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Address.

PROFESSIONAL REMINISCENCES.¹

BY BENJAMIN EDDY COTTING, M.D., ETC.

Mr. President, and Fellow-Members of the Norfolk District of the Massachusetts Medical Society:

THE officers of our Society have directed me to prepare a paper for this meeting. Having long and earnestly maintained that every member should attempt for the Society any duty assigned to him, I cannot consistently refuse to undertake the task now imposed upon me.

Although the subject enjoined and the topics indicated are not such as I would have chosen — involving, as they must, an unpurposed unfolding of self-matters — it is quite possible that an unvarnished story of some of the "labors, dangers and sufferings" of an old soldier, while groping in the mistiness of past times, may not be without interest to abler warriors, thrice armed with all modern improvements and in the light of the present, but even now in a perpetual struggle along the same line of oft-perplexing service.

At all events, the mandate should be obeyed; it is official, and "to be respected accordingly."

Repressing, therefore, personal disinclinations, and premising that I have scarcely any notes to refer to, I will endeavor to relate, as best I may, a few of the wayside incidents of my professional career.

I have now practised medicine for a full half-century. Fifty years ago, last August, on commencement-day, three years after graduating at Harvard University, I received at the hands of its President a degree of Master of Arts; and, after that, but on the same day, a diploma conferring, as it said, "all the rights, honors, and privileges pertaining" to a Doctor of Medicine.

A few weeks later I was admitted a Fellow of the Massachusetts Medical Society, and obtained its "License to become a practitioner of Medicine and Surgery . . . while a resident within the Commonwealth" of Massachusetts.

Armed and equipped with these formidable documents, a very bashful but an undaunted youth, I proceeded at once to affix to the door of my lodgings an indication that thereabouts did dwell a new recruit in the "great army" of those who, in the words of its foremost leader, are ever ready²

¹ "To do a world of good, and take a world of pay."

The professional "shingle" having been thus duly adjusted, a hasty retreat was effected, and the door bolted; lest some great accident or some pressing emergency should, perchance bring excited messengers too suddenly before the startled and inwardly-trembling neophyte. But no accident happened, no emergency arose. Perhaps it was the *sign*, it seemed indeed to say

"The smallest fevers gratefully received;"³

but it may have been too inconspicuous to be read by one who runs. It was indeed a modest affair compared with many since exhibited, — an early effort, by the way, of one who long ago became a noted

¹ Read, in part, before the Norfolk District Medical Society, October 25, 1887.

² Dr. Jacob Bigelow — P. B. K. Form, 1831

³ Dr. O. W. Holmes once said that every young Doctor's new sign declares this. Fevers, the first *e* in *pro* — Hibernice, fevers.

landscape painter. It is still in service, in humble contrast with what fashion or greater acquisitions have since seemed to demand.

I have been urged to tell, especially, of my first lodgings, the fittings-up thereof, my manner of living there, the books and instruments then thought necessary — for display, if not for study and use — that these things may be compared or, rather, contrasted with the requirements of young beginners of the present day. It is a sorry story; but here are some of the *res angustæ domi*.

In selecting lodgings the chief points were to get as near as possible to where other and older practitioners were congregated; and to be accessible to Dispensary and other equally promising districts, from which employment might at first be expected. I tried for Winter Street, then full of doctors, but the best accommodations obtainable, within my limited means, were on Washington near Bedford Street.

As it was, I was obliged to go up one flight, and to take a single room. It was forlorn enough, with bare, unpapered walls; and a hole in one side of it for a stove, if I could obtain one. I arranged a cot in one corner, and concealed it, as best I could, with a muslin curtain of no very elegant pattern or artistic construction. A fragment of a carpet on the middle of the floor; a pine table, with four attenuated legs supporting its corners and a cover of green baize, for a centre-piece; and three or four wooden chairs — one a rocking-chair which subsequently had a history — completed the furnishings. On the table were a dozen or more books, chiefly medical; and a well-worn dissecting case of the ordinary pattern.

What would a young beginner nowadays think of such a "den" as this?

Not many days after I took possession of my apartment, while quietly settling down to the dreary drowsiness of solitude and want of occupation, I was aroused from incoming torpor by one of the most gratifying surprises I ever experienced.

A Professor of the Medical School,⁴ — waiving the usual etiquette and custom which required the new-comer to make the first calls — came to my office. We had never been introduced; and an absurd custom clinging to some of us from under-graduate usages had prevented my speaking to him, except in answers to examination questions, while he was a teacher and I a student, lest it should induce the accusation of "fishing," or the seeking of favors and indulgences. He brought to me some publications of recent cases, and asked me to assist him in a private operation. Thus began an intimate and mutually-confiding friendship which terminated only with his life.

Weeks passed, and yet the public did not appear to care for the patient waiter behind the door, nor seem very much to need his services.

Hitherto all my needs had been amply supplied; but now, while money could still be had for the asking, I had fully determined not to ask for more. On the contrary, I entertained a faint hope that sometime I might be able to pay back what I had received subsequently to leaving college. But, that aside, the present was to be provided for. It would not do to expect that to-day's expenses might be paid by to-morrow's incomings. Such a course would soon lead to

⁴ George Hayward, M.D., etc., Professor of Clinical Surgery in Harvard University. The silver pitcher, now in possession of the Massachusetts Medical Society, he gave to me, some years later.

distress and discomfiture. But, as was then recognized and afterwards fully realized, it would often be a hard trial to subsist upon the little actually received, rather than to venture upon that which, though earned, had not been paid in. The prospect was unpromising, but the will was strong; and the many obstacles were at last overcome. The first steps were the worst.

Although a *voluntary* undertaking, nevertheless to live by one's self under such, even self-imposed conditions, at times having to go days with only bread and water, or with now and then the addition of an occasional dinner at a restaurant when by chance an extra fee came in, and this for months, was bad enough; but to feel obliged to "hold the fort" continuously, day and night, that nothing escape through absence, depriving one's self of all social or other needed recreation, became much more unbearable. The French have a saying that there is no necessary man, and I began to think that I was indeed the very individual the adage referred to.

Occasionally a friend would come in, and, by way of consolation, suggest that a calling which did not immediately *pay* was not worth following up.

A notable family once sent for me. They had sickness in the house. Their family physician, they said, had become old and so infirm that they felt obliged to give him up. They had long known of me and of my abilities and standing; had great regard for me, and they felt, in this serious emergency, that they could confidently trust in me — to tell them whom they had better employ as their physician. Keeping my self-possession as best I could I told them, without apparent hesitation, whom I would send for were I ill myself. They sent for him, and he ever after attended them.

I had saved a trifle from my allowance for student expenses, and only a few coppers remained, when a lady called me to her assistance. She was found to have a mammary scirrhus. After proper consultations with higher authorities it was decided that the organ should be removed. One day she took me aside, and, with great solemnity, asked me to tell her, upon my *honor*, whether I thought that I could do the operation *well*. She did not ask me, she said, to say as well as the eminent gentlemen who had seen her, but *WELL*. On my answer in the affirmative, she told me to come prepared to do it on the following Tuesday. Remember that there was no anaesthesia then. It required several strong persons merely to hold a patient, writhing and groaning, during such an operation. The operator, then, could not loiter to determine uncertain tissues. He could not stop even to tie up arteries, unless very important ones. He was obliged to go rapidly on, and to receive unmoved jets of blood in his face, or wherever they might fall. Yet he did not think it advisable to wear the butcher-like frock now sometimes seen, or to embarrass and prolong the proceedings by foul-smelling vapors or poisonous washes.

More than one of the assistants whom I invited (but not the aforesaid Professor of Surgery who kindly offered to be present and assist me), suggested the consequences of failure; but the operation was performed, and to the satisfaction of all. This was my first case after graduation, and it required some firmness of purpose to meet its exigencies. I am happy to see here present a gentleman,⁶ the friend of my earli-

est youth, who was with me and assisted in the operation I have just described.

While I was attending this patient a gentleman called for temporary advice, and insisted on paying a fee. It was the first payment for professional service, and the hesitating reluctance with which the amount was named and accepted is well remembered to this very hour. The service rendered did not seem to me worthy of any compensation — a common experience, I believe, with young beginners. The bank-note thus received (the smallest denomination then issued), was never parted with. It still hangs in its frame by my books, a constant reminder of the sensations it at first aroused.

But a few patients, however prominent, do not make a practice. This I well knew; and I had not taken a place among active practitioners with any intention of remaining permanently in the city. The truth was that, although I had had an unusual amount of actual practical experience for a student in those days, especially in obstetrics, through my connection with the House of Industry, I was still in a formative stage. At the House of Industry during my charge of it as *Interne*, besides a very large number of patients constantly in the wards with all sorts of diseases and ailments, including insanity, there were over thirty births and one hundred and fifty deaths. Thus an opportunity was afforded for the study of disease in all its forms and terminations, from earliest infancy to extreme old age. There, too, were many chances for autopsies, dissections, and operations on the subject.

A little knot of us students (I believe that I am the only survivor), had been in the habit of meeting together to report cases, and to *quiz* each other's work, criticising it, sometimes rather roughly, in diagnosis, prognosis, and treatment. In like manner we assembled for operations at the dead-house. The subject having been put into position, one would take the watch, for rapid action in those days was second only to thoroughly skillful performance. The watch-holder would call upon one of the others, at random, to do an operation then for the first time named. When finished the operator was subjected to the relentless criticisms of the lookers-on, who never failed to find some fault or omission, or to suggest some improvement. These and similar exercises were the source of incalculable good to each and all of us.

It was then the custom also, at the college, for students who were willing to be examined on the previous lecture to take the front seat in the lecture-room. Generally there would be half a dozen or so in this seat, though only two or three of us took places there throughout the whole course. We thought it better to fail there than to prove ignorant afterwards when ignorance might be more disastrous. Many corrections of unsuccessful replies were fixed firmer in our memories than our correct answers.

Notwithstanding all this, and perhaps in consequence of it as it showed our limited acquirements, I felt far from competent to assume at once on graduation "the responsibilities of a general practitioner" alone and unaided, especially in a country town to which I seemed destined.

Though constantly on the watch, the looked-for "opening" did not show itself to me. Determined to make but one move, and that for a permanent location, I staid on, attending additional lectures, "walk-

⁶ W. W. Wellington, M.D., etc., of Cambridgeport, Mass.

ing" the hospital, then the only one, the Massachusetts General, practising as I could, "getting up nights" for neighbors (always giving up the patient in the morning to the regular attendant), and bleeding for others in order to save them the trouble, and to become, as was then considered important, adroit in the performance of that frequent operation.

I made autopsies also, and I may interpolate here that I once gave up a lecture to make a post-mortem for a gentleman who left his patient apparently moribund the evening before. On our arrival the patient was still alive, and, more than that, subsequently recovered. The doctor lost the patronage of the family, and never afterward arranged for an autopsy unless sure that it would be a *post-mortem*.

So, too, I assisted in surgical operations whenever and wherever I could get the chance, adjusting dressings, cleaning up, etc., etc., in short, seizing (without expectation of pay), upon every opportunity of the kind that fell in the way. In those days beginners were thankful enough for any chance to gain experience, in order to become qualified to practice satisfactorily when established for themselves. Things seem much changed nowadays. According to some recent reports it is not always safe to ask a "young doctor" to take care of a poor patient unless prepared to pay the bills. And, improbable as it would appear, not long ago a lawyer's dunning letter was sent to a physician at the instance of another practitioner who had attended a non-paying patient of the former during his temporary absence.

Some of my college classmates, fellow medical students, went abroad. I saw the advantage of such a course, but was not able to follow their example — fully aware that no amount of application at home would, at that time, give the prestige of a short residence in a foreign capitol. Nowadays by its frequency, and by the increased advantages and the better teachings at home, this foreign service has become, in the way indicated, of much less importance.

Thus I held on, getting little but work and experience; enduring a real "famine," and *voluntarily* accepting privations such as young men of to-day would hardly credit were the half only told them. The experiment was indeed a severe trial in its daily demands on patience and fortitude, but it has proved of valuable assistance in inducing more appreciative views of human exigencies; and its "sufferings" now appear supremely trivial beside the many tragical struggles for existence which the profession daily calls one to witness. It showed too, that one if so resolved, or necessitated, can keep up appearances and live at as little cost in Boston as anywhere in the world.

After a while I could pay for a regular dinner, and obtained it of a worthy person, who, occasionally a patient, kept a boarding house in a distant part of the city. This also daily gave needed diversion from otherwise strictly professional pursuits. The distance also answered the intrusive question why all the meals were not taken at the same place.

Occasionally an elder practitioner would send a paying patient — a valued recognition, much needed and gratefully received.

After a year or so I obtained what I had at first sought, a room on the street-level in Winter Street, becoming the twenty-fifth practitioner on that short street.

Just before I left Washington Street a singular case

happened in the house where I had my office. An elderly man, afflicted with rheumatic and swollen limbs, requiring, as he thought, frequent applications of liniments, had been bathed at night-fall with an unusual quantity of alcohol and spirits of turpentine. On the approach of an attendant with a lighted candle the whole took fire and enveloped his limbs and lower part of his body in a sheet of flame. Though the blaze was quickly smothered the shock was too great, and he died in great suffering not many hours afterwards.

In Winter Street, quarters were somewhat better, though plain enough compared with modern requirements. Here I lived in the house. I added to my furniture a plain book-case, which at an auction cost me a couple of dollars, and I arranged my cot to be turned up in the corner out of sight in the day-time, as I still had but one room. Here I remained until I removed from the city.

While I was on Winter Street, Dr. Hayward, taking a vacation of six weeks, asked me to remain for a time at his house and attend to his patients. Afterwards he generously gave me all the fees as they were from time to time collected.

President Quincy sent to me under-graduates who were required to "make up" studies during their vacations. For hearing their allotted tasks, which caused me to review my college studies, I received compensation which greatly increased my very small pecuniary income.

A word for the rocking-chair. When Mr., afterwards Sir Charles Lyell, the geologist, first came to this country to lecture, I was temporarily curator of the Lowell Institute for my friend Doctor Jeffries Wyman, who then held the office. Mr. Lyell, who was a tall and undulating person, came to my office one morning, and, throwing himself into the chair, began to rock it quite violently. As he was uttering the words "we don't have such luxuries in England," over he went, smashing the chair to pieces. With hearty roars of laughter he pushed the fragments aside, and continued his visit, sitting on the floor with his hands clasped about his knees. As long as he lived he never escaped occasional questionings in England about his experience in American luxuries.

I was now getting a little more prosperous. I had also by this time collected a few more text-books — new works and monographs of the day — mostly at auctions which students frequented. Among the books was the new Forbes, Tweedie and Connolly Cyclopaedia, in four volumes, large double-columned 8vo, which was then thought to be so complete that nothing further would ever be required on the subjects of which it treated. Yet who ever hears of the work at the present day? But very few beginners, I imagine, then bought many books or set up large libraries.

For periodicals, I was permitted to join a Reading Club which took all foreign and domestic medical journals. Several physicians having large libraries offered the use of them. I was appointed librarian to the Medical College, which, besides putting my name on the annual announcement, and giving at all times free entrance to the college, required me to take care of its rather limited collection of oldish works; to be present every Saturday afternoon to loan books to such students as wished to borrow; and to keep posted so as to assist searchers in their investigations. I was one of the earliest subscribers to Braithwaite's Retro-

spect, which began as a very small and thin duodecimo. Its first volume, which I received in advance, contained an abstract of a paper on "the use of *Oil of Codfish* in Scrofula," setting forth most wonderful results. This paper came under the cognizance of an apothecary's assistant, who (having had a difference with his master and set up for himself), determined, on the strength of its alleged virtues, to try "*a run*," as he called it in telling me, on the article; little thinking, however, what a marvelous "*run*" it would become. "*Cod-oil*" was not a new thing as a medicine. I had tried it, but could seldom prevail upon patients to take any considerable amount of it. Newly started abroad, however, it was extolled and swallowed here *ad nauseam*. So much of the vile stuff did doctors pour down their patient's throats, and the people take of their own accord (for any and every disorder, after it had become fashionable), that the price of "*fish-oil*" in the market soon went up more than five-fold. As an example of the extremes to which fashion may lead even educated practitioners, a plump and pleasing, hectic-checked young woman was pointed out to me at an assembly, by her physician, as an instance of restoration to flesh and health by taking, he said, "more than a hog'shead of cod-oil." Extravagant language this, but not more extravagant than the reports of some of our most prominent practitioners at the time. The young woman died a few months after she was pointed out to me, in spite of the published cure by the "remedy."

Little is heard of the article now except in some mixture or emulsion to make it go down with the public.

But if few beginners bought books, fewer still collected many instruments. Surgery was not the comparatively easy thing, without ether, that it now is with anesthesia; and not so many then aspired to become operators. I had endeavored to qualify myself for the surgical emergencies of a country practice, where one must rely chiefly on himself and be ready to act at once or suffer in reputation, if the patient did not suffer in life or limb by delays attendant on obtaining a bolder if not an abler practitioner.

I had, of course, my common dissecting case. A German, Leitz by name, for some service I had done him, had made for me, while a student, several delicate instruments for sub-cutaneous tenotomy, and for strabismus, new operations in which, even this early, I had become quite expert. One of my teachers gave me a scalpel, an Evans, with which I performed my first operation after graduation, and my last a short time ago. It has been a much-used instrument, "my good English knife," as Dupuytren is said often to have exclaimed, holding up a favorite instrument. I had free access to an instrument-maker's armament, in consideration of many suggestions I gave him. I had also a present of tonsilotomes from the designer, and, from the same source, an amputating case, all the contents of which, I am sorry to say, I was (contrary to prediction) obliged subsequently to use, even the long ten-inch double-edged catling, in an amputation at the hip-joint. The saw of this case was a common carpenter's saw, fine-toothed, for hard wood. It was selected by myself, and fitted up with an ivory handle. The teeth of ordinary surgical saws are too raking for dividing bones readily.

Of course, as I went on, I obtained such books and instruments as were essential to immediate exigencies,

but from the start I was often obliged to follow Baldwin's dictum⁶ and use whatever came to hand as best I could. "A wooden *bicker* or bowl" for a compress in a desperate case, by a "rough and ready lad," is mentioned by Dr. John Brown, of Edinburgh, with high approval in his "Locke and Sydenham," pp. xi-xii. So, too, an iron spoon for a vectis, as used by a late member of this Society in an emergency, is worthy of commendation.

I had waited patiently in my Winter Street office, but at length the long-wished-for day came. While I was musing on hope deferred, and anxiously looking up a place, the fire was burning. Two of my former medical teachers, without concert or knowledge of each other's purpose, called upon me the same day and set forth the advantages of Roxbury.

I had long known its woods and pastures in botanical excursions, in which I collected specimens for the wild-flower corner of the Massachusetts Horticultural Society's weekly shows. From these gatherings remain some five or six hundred varieties dried and preserved, in suitable volumes, most of which are now in the possession of one of our professional neighbors. Moreover, I was not wholly unknown to some of its prominent citizens. I had, however, strange as it may seem, never thought of it as a place of residence, but a walk thither (street-railways were not, and stage fares were too much for the impecunious) soon determined the matter. One look was enough to take in the situation. In less than a week a location was selected, and a full practice begun.

Roxbury then had six regular physicians in active practice, and five or six more "doing a little something." There were two irregulars also, one of big and one of little pills, together with several medicine vendors of no great importance.

Among the first-named was an old practitioner, a thorough regular, who attended quite a number of the oldest families. He took a fancy to me, and gradually transferred these patients to my care. He had a pill, which he valued much, and which (though a formula of much older times) went by his name.

One day he hailed me in the street, and asked me whether I knew of his pills. I replied that I had heard of them. "Oh," said he, "they are invaluable—just have a pocketful always; and when people come to you with their long stories, and *you don't know what to do*, give them from your pocket" (smiting the action to the word, and bringing out a handful loose from his own) "give them half-a-dozen of my pills, and that will do the work for them. *Always keep a pocketful of them by you!*"

The fees then were very small, and, although a more expensive place to live in except in house-rents, it is a few years only since they were in reality raised to a limited equality with those in Boston proper.

As to getting about town, the main roads were pretty good for a country place; but the sidewalks were mere earth-paths along the travelled ways. There were no curb-stones. The streets were not generally lighted at night; never when a moon was expected to shine. Lights on vehicles at night were a necessity, and lanterns had to be carried by pedestrians. Rubber boots had not been invented, and heavy, well-oiled cowskins were a burden in the mud of stormy times, and hardly kept the feet dry. South of Dover Street there were a few houses only. Tremont Street was a

⁶ See Boston Medical and Surgical Journal, May 19, 1887, p. 480.

mere road, raised but little above the marsh. It was lighted as other roads were, with oil lamps, few and far between; and the lighting of "the Neck" with gas, years later, was a notable event. There were but few chances by the roadside to tie a restless horse, and I was one of the first to adopt the weight (now commonly used), invented by a brother physician,⁷ affixing an iron hook or snap instead of a buckle, the original means of its attachment to the bridle. The risks and fatigues of night-service can hardly be imagined by later beginners.

Roxbury then had about nine thousand inhabitants, but was beginning to increase rapidly in population. Now it is said to number more than seventy thousand. It was at that time, to me, a beautiful suburban town, not much less distant from Boston, in time, and not much more accessible than Worcester now is. Now it is, unfortunately, a "Southern District" only, as the law calls it, of a large city, and subject to all the inconveniences of such a relation.

Of my practice in Roxbury, I may say here as well as anywhere, that it was very much larger than I had ever dared, for a moment, to anticipate for myself there or anywhere else. This result was due largely to the unsought and very cordial expressions of goodwill and confidence of the Professors in the Medical School, and other eminent medical gentlemen of the city, who had observed my course as a student, or had witnessed my solitary talent, if I had as much as that, namely, a talent for *work*.

This practice, at times too large for one person, I think I can truly say I was never unwilling to share with others, especially with younger men or newcomers, struggling in their first efforts to get a foothold. I always felt impelled to this in remembrance of my own early struggles, and of similar assistance when most needed. For doing thus, all I ever asked was that the recipients should pass similar favors on to their successors. I never expected nor have I ever received commission or personal favor in compensation.

On the whole my practice, with such increase as naturally follows faithfulness to employers, was at first derived chiefly from new-coming residents, the patients of others voluntarily sent to me and from practitioners relinquishing business. Thus my success has been largely due to the profession's partiality; and I have tried to repay in some humble measure the great obligation.

My actual service has embraced all classes from the highest to the lowest; and for many years gave no time for rest day or night. I never added up monthly or yearly *charges*. Generally, once a year, each patient of supposed ability received an enclosed memorandum of his indebtedness, usually not made out by myself; and he was left to pay at his leisure. A plea of poverty never failed to secure a withdrawal of my claim. Some, who should have answered, never responded; and thus arose the saying that I own several undivided shares of houses, paid for in part (if paid at all) by fees withheld when they should have been rendered unto me for services. Seldom, however, have I been thus overreached by any who have not similarly endeavored to wrong others in their several occupations. On the other hand, many in course of time paid, whose indebtedness I had entirely forgotten.

This plan of mine has worked well with other prac-

tioners who adopted it at my suggestion. One can act independently if he does not know or remember that the applicant owes him money; and it is no harm in the long run to have many debtors for acts of unpaid kindness thus rendered to them. I tell young men to make as many such debtors as possible, thinking less of payment than of service.

As a whole, I do not suppose that a half of my work for those apparently, but not always really able (not including "charity" or "dispensary" patients so-called), has received pecuniary compensation. The rich, too, often exact more than they are willing to pay for, still, one cannot be a very large-hearted practitioner who does not find out at length, in self-satisfaction at least, "how much better a half is than a whole" — especially the gratuitous or unpaid half!

The practice of medicine must be very disappointing to those who follow it chiefly for the acquisition of wealth. Whoever practices it in a commercial spirit debases the calling and degrades himself. As a French writer has truly said: "Medicine is the noblest of professions, but the meanest of trades."

Some classes have seemed to think they are entitled to a physician's service as a matter of course, though no reason can be given for it. Formerly, clergymen were considered such beneficiaries. One year I attended eleven clergymen's families, most of whom received a larger income than myself. I felt obliged to exact payment of those not connected with local parishes. It is customary now, I believe, not to make even such exceptions. More than this, fees are now sometimes charged for attendance on brother-practitioners, or, if not charged, a liberal honorarium is readily accepted for such service. I never took a fee from a female teacher in our public schools nor often from males in the lower grades. During the war, I examined, gratis, the companies of recruits assigned to me. I also attended, as in the other cases alluded to without public or private announcement, the sick and the wounded officers and men from generals and admirals downward, and their families, without charge or compensation.

The greatest number of professional visits to separate houses I ever made in one day was forty-three (a few of the houses visited having more than one patient). It was one of the longest days of summer, and there was no time for rest, from early dawn to late at night. I once attended four births, in different parts of the town, within twelve hours; between twelve at night and twelve at noon following. It happened to be a February 22d, and the three boys were each called George Washington, while the girl received the name of Martha. The mothers were unknown to each other.

On one occasion, a father wishing to weigh a very large child, sent Bridget for scales. She brought a small pair. "Those will not do," said he, "they are not half large enough." "Oh," said Bridget, "then put 'im in twice."

I had, indeed, a full share in obstetrics. On the first of January following the April of my coming to Roxbury, I had on my list thirty-seven obstetric engagements. During the year following that date, I attended ninety-six cases; during the next, one hundred and fifteen cases; and so on, until I had a very large fraction of the whole number in the town.

This department was never satisfactory to me, nor do I deem it pecuniarily profitable, although the fee

⁷ The late Dr. John B. Brown, of Boston.

is considered large. If all the extra calls now usually demanded, and the wasted time were paid for, at average rates, without the lump-fee, the attendant's compensation would probably be greater than now; and the patient's family would not be so exacting of the physician when he was not actually needed.

I had been early put to my trumps in this department. When I had hardly finished my second year's studies, and when I had only imperfectly "assisted" by being present part of the time at two deliveries conducted by others, I was residing with a prominent Boston physician and was sent one dismal night to a distant residence to "keep the patient" until the doctor could reach the place, he being at the time in attendance on a similar case afar off in the opposite part of the city. The patient I was to "keep" was a young woman in her first pregnancy, who had come from the country to a friend's house, to make purchases for the event, expected some weeks later. I had not reached the place too early, but on entering the reception-room I was plied with numerous questions, rapidly put to me, chiefly as to qualifications and experience. While I was getting "very red because so very green," I put myself on the negative defensive; I would not force myself upon them; nor stand in the way of any other arrangement. I was sent to save them from any mishap, and probably would not have been so sent if thought incompetent. I added that I had no objection to their sending for another practitioner (inwardly I wished they would do it), but would remain only until they had procured one to their liking. Meanwhile a conference was going on, aside. Their messenger had left. The darkness and storm outside were appalling. In their ignorance of their professional neighbors, a haphazard choice might be worse than taking the one present, who, at least, had their own doctor to fall back upon. At this point, the urgent calls of the nurse interrupted their consultations; and I was hurried up into the patient's room. Suffice it to say that all went on happily, and I reached my friend's house at early dawn, before he himself had returned. I had told the family that the doctor would visit them during the day, but they replied that there was no need of two physicians in the case, and wished me to continue attendance. Accordingly the doctor drove me to the corner of the street and waited for me in his chaise while I visited my patient. This he repeated as the case required. All this happened in one of the doctor's "first class" families. He never saw the patient, but he charged and received a "first-class" fee. I had the experience.

The procedures in the lying-in room were then somewhat different from the present. The bed usually consisted of two sacks; one of feathers, the other, underlying, of straw. The upper was folded half up on itself, and the patient was placed across the exposed half of straw. After delivery, she was made to stand up, and, while the soiled clothing dropped, clean and fresh garments were slipped on her from above. She was then lifted up (by the doctor if he was strong enough),⁸ and placed in the bed, which in the meanwhile had been readjusted by the nurses. Thus "in the straw," and "putting a woman to bed," had a greater significance formerly than now.

adays. We, when youngsters, altered all that long ago. The patient, now, on a comfortable mattress, from which she is not to be removed, taking the position she pleases in an easily-detached dress, supplied with scores of napkins readily managed and quickly removed, passes neatly and with comparative facility through the ordeal.

For some readers, I may add that I never could see the philosophy of "supporting" the perineum, so-called; on the contrary, the plan usually recommended seemed to furnish a fixed point whereon to start a rent. Therefore, I have never done anything of the kind. And, as to ruptures, I am confident, the fact is that I have not had one in a hundred cases, never a bad one. The number of times that I have taken a stitch for real or supposed necessity, does not amount to half-a-dozen. To be sure I have not used a candle for visual demonstration, but I have always ascertained the condition of things by digital touch, adequate I still think, as the placenta in passing puts the parts upon the stretch. In the management of such matters I never had any other rule than to relieve extra pressure as circumstances demanded.

Before the idea was started that puerperal fever may be communicated, I was once in attendance on four cases of this disease (two, however, not until the fever had begun), while I attended eleven other patients without any injury to them. Once I attended a patient in the next bed to a puerperal fever case, and no harm resulted, both patients having the same nurse. In an epidemic of this affection, I have seen cases clearly indicated days previous to delivery. If ever a consecutive number of cases of this disease occurs in the practice of one physician, while none appear in that of others, the same is true of other diseases. For instance, I have known this to happen with scarlet fever, where "carrying" by the attendant was out of question, as he went to the patients only after the disease had manifestly revealed itself.

In fact, in spite of what non-practising theorists allege, I have never known of a case of this affection to have been unmistakably carried by an attendant, however much exposed he himself may have been. Various other theories explain such matters much better, if we cannot acknowledge our ignorance. Epidemics will prevail, and often confound the wise by their strange and unusual courses. The same may be said of all the portable diseases so-called. Thus it seems to me, and I have had some chance to learn of these matters at home and abroad. At any rate, the unnecessary alarms, so often carelessly raised, are more damaging to a community than any such portability was or can be. Witness, on a large scale, London's ordinary amount of scarlet fever, sensationally misnamed "raging,"⁹ the recent call for "red flags" in our own neighborhood, and the present "fright" (as we may now add) in a country place in another part of the State, where with less than a score of cases in four thousand inhabitants, according to the papers, "the town is greatly excited, and the authorities are blamed for not being more active in checking the spread of the disease." It is hard to be reconciled to the inevitable, the unavoidable — somebody must be blamed.

Of the incidents and experiences befalling me after settlement in Roxbury, some were certainly peculiar, others of a somewhat serio-comic character, of which one or two instances may be given in illustration.

⁸ I once knew a physician who acquired quite a large obstetric practice chiefly by being strong enough to take the patient up at arm's length and thus put her gently into her bed unassisted.

⁹ *Lancet*, November 26, 1887. p. 1073.

I happened to take with me Desault's apparatus for fractured thigh. The reputed surgeon of the place (Dr. F. Brown), who was on the point of removing from town, often made me friendly visits. Seeing this apparatus one day he declared it to be perfectly superfluous; that I had better make firewood of it at once; that there never had been but one case suitable for it in the town, and that that was hurried off to a hospital before a local doctor could reach the place of the accident.

A few days only after these remarks two cases of fractured thigh, within twenty-four hours of each other, occurred hardly a stone's throw from my residence. The one required my Desault, the other all the wit I had to construct suitable appliances from materials at hand.

An amusing incident occurred in connection with these accidents. As a large and full omnibus left its station, at the head of it sat a consequential individual, a self-constituted "boss" of local matters, and a would-be magnate of the town and vicinity. Overhearing a passenger at the other end of the vehicle relating the affair as they passed the place of the accidents, he loudly called out in a rough voice, "Who'd you say attended them?" On being answered "Dr. Cotting," again exclaimed, "Dr. Cotting! who in hell is he?"

I took the first opportunity to render a gratuitous professional service to his family, that he might recognize me as a near neighbor, call the place in which we lived by whatever name he chose.

My extemporary apparatus, somewhat improved upon and used afterwards in preference to any other, I published an account of in the *Medical Journal*,¹⁰ and, as a supplement, a description (both with woodcuts) of a "fracture-bench," so called, devised for his son by Dr. Monroe, a member of the Norfolk District Society.¹¹ Subsequently in repeated instances I found this "bench" easily set up and very useful.

The following season, on a Saturday afternoon, a master-mechanic, a very large and heavy six-footer, exceedingly muscular and strong, dislocated his shoulder. His physician made half a dozen or more attempts to reduce it. The patient suffered much, and roared lustily in the process. The parts became very sore and he very impatient, calling loudly for other assistance. I was stopped in the street by a messenger and taken to the place. I was told by the medical attendant of the attempts he had made, and that I might try *my luck* if willing. The extension made had been irregular and spasmodic, and I noticed a failure to fix the scapula.

Attending to this latter point, and putting several strong men on the arm that the extension might be slow, steady, and relentless, in less time than it takes to tell of it the reduction was effected, without apparent pain to the patient. Shouts went up outside from the crowds of workmen (it was pay day), and others gathered in the street, who thus and otherwise, quickly noised the event throughout the town. On my leaving the patient in his hands the doctor remarked that his previous efforts had probably relaxed the parts and rendered the operation easy for me. I accepted the explanation, but he never forgave me for my success.

A few weeks later I reduced, by pulleys, a dislocated shoulder of several months' standing; then, with-

out ether, a difficult not to say somewhat hazardous operation. It was deftly done, but I never heard mention of it outside the house wherein it occurred. So disproportionate, often, is fame to the merit of the service performed.

With such a start it is needless to say that for years after I had all the casualty surgery of the neighborhood that I was inclined to undertake. The building of the City Hospital brought a great relief to me in this laborious and generally ill-required work.

On the union of Roxbury with Boston, even before its full consummation, I was officially offered the place of attending surgeon in the hospital; again a year or two later, and once more after that: *thrice*, and *thrice* I declined. I have been accused of unwarrantable ambition. "Was this ambition?"

I have, however, held the position of consulting surgeon to the hospital, an honorary office, for now nearly twenty years.

I could tell of a register case, a true story; but strange, in faith more passing strange than the fiction on which Mr. Howells founded his popular little drama of that name. It was in short, an unwarranted fabrication by a listener at a register, who "didn't hear the consultants say anything about the patient!" But for a little forbearance on my part the story and the unavoidable defamatory inferences might have become a serious matter to the listener.

(To be continued.)

Original Articles.

SOME OF THE OBSTETRIC AND LEGAL RELATIONS OF INFANTICIDE.¹

BY F. W. DRAPEY, M.D.,
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In the proceedings of a body whose organic character and purposes are mainly devoted to the preservation of infant-life during its transition from the foetal to the personal stage of existence, any discussion of the method and proofs of the criminal destruction of that life is certainly novel, if not incongruous. Yet I venture to ask the indulgence of an Obstetrical Society to a brief consideration of a theme greatly out of its ordinary course, but having, nevertheless, obvious obstetric relations. The puerperal primipara and the new-born child are sufficiently familiar objects, under the frequent observation of the practitioner of midwifery; he gives to them his best care, tenderly, skillfully and safely guiding them through the ordeal, long awaited, patiently endured by the woman whose normal maternal instinct finds in the welcome first cries of her child abundant recompense for the pangs attending its birth. In the tragedy of infant-murder, too, as it is usually presented to us for study, the actors are the same; the puerperal mother, who is the active agent in the affair, and her child, just born, the easy victim of her unlawful act. The ever-marvellous mechanism of parturition is here again repeated, presenting no new features save in its surroundings; but in these, the contrasts at once appear which make an affair of child-murder a matter of novel interest to us. The physician's skill has no place in this lying-in. The throes of labor are borne in secret. Nature unaided and unguided accomplishes the delivery.

¹ Read before the Obstetrical Society of Boston, November 12, 1887.

¹⁰ Boston M. and S. Journal, Sept. 19, 1861.

¹¹ Ibid. Feb. 13, 1862.

There is no tender sympathy of kindred or of friends at hand, no trained attendant to comfort and encourage. It is obstetrics reduced to its simplest terms.

How women behave under these conditions, what powers of endurance they exhibit, what methods they adopt to conceal the fruits of their illicit indulgences out of wedlock, and what evidences we seek in the dead bodies of their new-born offspring to convict them of the criminal destruction of human life, it will be the purpose of this paper to illustrate. I offer the following notes of cases occurring in my experience as a medical examiner, as the most fitting introduction which I can present. From a considerable number of affairs of this class, I have selected two only, regarding them as typical examples of their kind; having in mind, also, the obstetric relations of the subject and choosing, therefore, the cases in which the mother, just delivered, was clearly shown to be, or with good reason was suspected of being, criminally responsible for the death of the child. During the past ten years, I have been summoned to inspect the dead bodies of two hundred and thirty new-born children, in all stages of fetal development, found in all sorts of places (privy-vaults, ash-barrels, snow-heaps, the shores of tidal or river waters, in back-yards and vacant lots) and presenting a great variety of anatomical appearances more or less indicative of violence as the cause of their death. How they came to be thus unceremoniously disposed of and whence they came, could only be conjectured in most instances; no clew to their origin accompanying them; they became the subjects of barren medico-legal investigations.

CASE I. Kate D., a healthy, unmarried Scotch girl, a primipara, nineteen years old, was charged with killing her new-born child under the following circumstances. In the last week of December, 1886, she undertook service as a cook in a small family in the suburbs of Boston. Her employer noticed the suggestive contour of the girl's body but kept her suspicions to herself. February 11th, on her return home after several hours' absence, Mrs. A., the mistress, found Kate in the kitchen, suffering from "cramps" which were declared to be due to menstruation, just then recurring after many months' suppression. Kate was sent to bed and was advised to apply hot cloths to her abdomen. Next morning, the girl was found at her usual place in the kitchen at five o'clock. She said she felt better and expressed her purpose to do her work as usual. She looked ill, however, and Mrs. A. sent her back to bed, where she remained through the day. On the 13th (Sunday), she was up and dressed, but spent much of the time on a lounge. That afternoon, Mrs. A. by some chance happened to look down into the privy-vault, which was situated at the extreme end of the dwelling house premises, and there discovered lying on the frozen contents of the vault, a bundle of white clothes. Taking it out, she found satisfactory evidence to confirm her surmises of the true nature of her cook's sickness, for the bundle contained the body of a new-born child. A physician was now called, who upon examination, found additional proof of recent parturition in the condition of the external genitals and in a small recent laceration of the os uteri. His patient repeated the story that her illness and flowing were due to menstruation, and the doctor, for good reasons, permitted her to continue her deceit without informing her of the discovery of the child in the vault. Her pulse and temperature were normal

and her puerperal condition gave absolutely no ground for anxiety.

Next morning, answering the physician's summons, I had an interview with the girl in his presence. With the utmost coolness and unconcern, in reply to my request that she would tell me just what had happened to her the previous Friday night, she said that she was taken flowing and that was all. When informed that her child's body had been found and that all of us knew that her sickness was the sickness of child-birth, she changed her confident tone and, after an outburst of tears, described her lying-in. She said that her pains began about six o'clock on the Friday evening; she supposed them to be her "turns" coming again. She declared that she did not know that she was pregnant, although she had twice been imprudent with her lover, whom she had left the previous June in Scotland. She had never told any one about her suppressed catamenia, and had not made any baby-clothing or other preparations for child-birth. At about three o'clock in the morning, while she was alone in bed, in her room, the baby came. She did not hear it cry or feel it move; she thought it was dead when it came. She got up in five or ten minutes after the child was born and went downstairs, through the dining-room, kitchen and laundry to the privy, and there something else came away from her. She took the baby down with her, and put it down the vault. She did not hurt it in any way during the birth and did not put her hands on it till she took it up to remove it. The navel cord broke when she arose from the bed.

Such was the girl's story. The anatomical appearances of the child's body did not fully correspond with it. In some regards, however, there was entire consistency. Her prolonged menstrual vacation was confirmed by the mature foetal development of the child: the weight was seven pounds and seven ounces; the length was twenty and a half inches; the hair measured an inch and a quarter in length and the nails extended beyond the tips of the fingers; there was a centre of ossification in the lower femoral epiphysis, of the size of a large pea; the pupillary membrane had disappeared.

The account of the time, progress and result of the labor was likewise corroborated: the funis was fresh, its length was eleven inches and its end was torn and without a ligature; the skin of the groins was smeared with fresh *vernix caseosa* and the face, neck and shoulders were blood-stained; there was no *caput succedaneum* to indicate a tedious labor; the skull-bones were freely movable; the colon was full of meconium throughout its length.

Beyond these two particulars, the mature development of the fetus and its recent birth without accident or delay, the young woman's declarations and the post-mortem condition of the child's body did not agree. She avowed her belief that the child was dead when it passed from her: opposed to this avowal were several facts in anatomical evidence. The lungs were expanded so that they nearly filled the pleural cavities; their color was pale gray, with a reddish tint; they crepitated distinctly on section and under pressure; their edges were rounded; their lobular boundaries were distinct; placed in water, with the thymus and heart attached, they floated high above the surface; cut while held under water, they emitted bubbles of air freely; each lung, each lobe and small sections of each

lobe floated freely in water, both before and after firm compression. The bronchi contained blood-stained froth. In the stomach, there was a mixture of air, mucus and free blood. In short, we found ample indications that air had been freely admitted to the lungs and stomach, before the child's death; while the body presented none of the appearances of still-birth and no abnormality to occasion that result.

The mother's statement, too, that she did not touch her child until, finding it dead, she took it in her hands to remove it from the bed, was radically at variance with many signs of violence which the body presented. Externally, there were ecchymoses above and between the eyes, on the right cheek, within both lips and on the left side of the neck. There were abrasions and excoriations, of various lengths and widths, on the forehead and nose, and (most significantly and numerously) on each side of the neck, four on the right and seven on the left, linear and superficial, oblique in direction and from an inch to a sixteenth of an inch long.

The right humerus and right radius were broken.

Upon internal examination the body presented further proofs of a violent death during, or immediately after, birth. Dissection of the neck demonstrated widely extended bruising, the parts being infiltrated with blood, on the left side from the clavicle to the parotid gland, and on the right side over a more limited area. Under the scalp, frontal and occipital, there were ecchymoses. The periosteum over the parietals was raised from the bone over a space an inch square, by a sub-pericranial effusion. Both parietals showed fissures, the left an L-shaped crack extending from its edge downward and forward, the right, a linear fracture an inch long, extending directly downward toward its centre. The brain was very soft, with more than ordinary injection of its meningeal vessels, but without sign of laceration or bruising of its substance.

The superficial vessels of the heart were fully injected. The blood was thin and dark. Its distribution in the cardiac cavities was not remarkable.

There were subpleural ecchymoses of both lungs, varying in size from that of a small pea to that of the little finger-nail. No punctate ecchymoses were found. Upon section the lungs displayed numerous dark red areas of hæmorrhagic extravasation, appearing as spherical or irregularly-shaped minute nodules, distributed equally in the two organs. The tracheal and bronchial mucosa was reddened.

These post-mortem appearances left but one reasonable conclusion, namely, that this child came to its death by the acts of the mother in her continued efforts to conceal the results of her amatory imprudence. That she was not as innocent or as ignorant concerning the true nature of her "cramps" as she professed, or as unconscious of the relation of causes and effects in her condition as she pretended, is shown in her neglect to call for the help of her mistress during the closing stage of her labor pains, while her repeated and fearful questionings relative to "what they would do to her" suggested strongly that her faith in the credulity of her story of the still-birth of her child was not absolutely unshaken. She was removed to the Boston City Hospital for puerperal convalescence. She remained here a month. With the exception of an attack of diarrhoea, which occurred three weeks after her admission and just as she was

about to be discharged, the convalescence was without complication or noteworthy incident. In due time the wheels of the judicial machinery of Massachusetts began to revolve about her case with becoming deliberation, and the result of it was that the grand jury concluded not to indict her.

CASE II. Josephine J., an unmarried woman about twenty-five years old, left her home in New Brunswick about the first of February, 1883, and came to Boston to meet the crisis of her lying-in, then impending. The father of the unborn child paid a part of the expense of the journey. The date of the impregnation was the previous June. The woman found a place at service and awaited coming events. At 5.30 A.M. February 24th, Josephine called her mistress, who found her suffering the characteristic pains of the first stage of labor. The matron remained with the maid for about three hours, watching the progress of things, and applying simple remedies, suspecting, without declaring, the true nature of the attack. After her mistress left her, the case proceeded as follows, according to Josephine's statement: At nine o'clock the child was born; she had felt its motions before its birth and afterwards, and she knew it was alive, although it did not cry. She broke the navel-cord and laid the baby on the outside of the bed. In about half an hour the after-birth came away. She then dressed herself, left the child on the bed, and went down stairs to the kitchen where her mistress was. The latter continues the account of the affair as follows: Josephine looked so badly on coming into the kitchen that she accused her of giving birth to a child and attempting to conceal the act; this charge Josephine denied, but presently, upon its reiteration, she admitted its truth, declaring that the child was dead when born, and adding that she had placed the body in a drawer in her bedroom closet. Going to the bedroom Mrs. G. found the child in a closet-drawer, but it was not dead. The drawer was shut. The child was breathing with difficulty, and Mrs. G. noticed that the mouth contained some white object which held the jaws open; upon removal this proved to be a piece of newspaper loosely crumpled together; behind this was a second piece, and behind this again, well crowded back into the pharynx, was a third piece rolled firmly into a wad or ball, of the size of an olive. The removal of this last obstruction enabled the child to breathe well.

Josephine sat in the kitchen all day holding her child wrapped in a shawl, as a substitute for the baby-clothing which she had neglected to provide in anticipation of her maternal duties. In the evening she went to an attic chamber and lay on a lounge with the child by her side. In the same room were two other persons, neither of whom was awakened during the night. About daylight Josephine roused one of her room-mates and said "My baby is dead!" She declared that she suckled the child at about two o'clock, and that then they both fell asleep, the baby lying on her arm. She knew nothing further until she awoke at daybreak and found the child dead beside her. There was no covering, she averred, over the baby's head, and she was wholly ignorant (or assumed to be) of the time and manner of the death.

The autopsy of the child's body (omitting unessential details), disclosed the following conditions: The weight was four and three-quarters pounds, and the length was eighteen and three-quarters inches. The

hair, nails, and centre of ossification in the lower femoral epiphysis indicated mature foetal development. There was moderate lividity of the general surface of the body, and especially of the nails, but none about the lips. The tongue was in its normal position within the mouth. Thick, whitish frothy bubbles appeared at the nostrils. The knees were flexed strongly. There was a diffused faintly-outlined dark blue discoloration of the scalp just above the hair-line of the forehead, but without swelling or other lesion of the skin. The front of the neck, over the hyoid bone, was reddened uniformly, without exoriation or swelling, and the skin above and below this point was more livid than that of the surrounding parts. Dissection of the neck found the appearances normal, except that there was a small ecchymosis at the inner edge of the belly of the right sterno-mastoid muscle; and in front of the angle of the jaw, in the right submaxillary region, there was another ecchymosis of about the size of a grain of rye. The larynx, trachea and bronchi were of normal color internally; they containing a few frothy bubbles. The epiglottis was erect. The upper part of the oesophagus was reddened. The heart displayed a right auricle fully distended with blood. The external vessels of the heart were injected. There were three small sub-pericardial ecchymoses in the interventricular groove. The blood was very dark in color but was loosely clotted. The lungs were quite fully expanded. Their color externally was a light red, with some limited areas of dark red at the posterior surface near the base. There were a few, not exceeding half-a-dozen, punctate sub-pleural ecchymoses along the lower border of the right upper lobe. Sections of the lungs showed a uniform dark red color, with fully developed hyperemia. The stomach contained a tablespoonful of clear, tenacious mucus, and a small mass of loosely coagulated milk. The spleen, kidneys and liver were injected. The intestines were normal, the colon containing meconium. The dissection of the head disclosed an ecchymosis in the frontal region beneath the discoloration noticed externally. Both frontal bones were fissured from their middle point outward immediately under these ecchymoses. In the occipital region, at the middle point, there was another ecchymosis, without any fracture. The brain was very soft. The meninges were only moderately injected, but the frontal lobes, the right especially, presented many minute reddish points of hemorrhage within their substance.

Here, again, as in the previous case, the judicial department of the State took a short-lived interest, and the grand jury in due time deliberated concerning the probable guilt of the unwedded mother. The conclusion was that her guilt was not sufficiently manifest to justify an indictment against her. Meanwhile, she had left the country, her errand in Boston having been successfully accomplished.

These two cases satisfactorily illustrate the usual features of such affairs, the characteristics of which are concealed pregnancy out of wedlock, attempted concealment of parturition, neglect to prepare for that event, secret endurance of labor-pains, attempted or accomplished destruction of the new-born child, extraordinary fortitude in the assumption of false appearances during the primary stages of the puerperal condition, and, finally, successful escape from judicial

prosecution. It is unnecessary to multiply examples of this class. I add a brief mention of two cases which will further show the marvellous endurance exhibited by women when urged on by the desire and purpose to keep their obstetric condition a secret. They will also demonstrate some of the difficulties which attend investigations of this character.

CASE III. Mary McC., unmarried, twenty years old, became pregnant for the first time in the spring of 1885. She kept at her work as a house-servant until well into the ninth month, when her increasing clumsiness required that she should have occasional assistance about her duties. Her employer, a widower with a family of young children, suspected her, but did not accuse her. At length, on the morning of November 4, 1885, Mr. B. had to get his own breakfast, his cook informing him through the closed door of her bedroom that she was sick, but would be quite well in a little while. When Mr. B. came home to dinner he found Mary sitting in the kitchen looking so pale and ill that he called a physician, to whom the girl insisted that nothing ailed her save a bad flowing turn after many months' suspension of her menstruation. She denied persistently both pregnancy and parturition, though confronted with the blood-saturated bed-clothing which her chamber offered as proof. The doctor dispatched her to the hospital in spite of her protestations, and after her departure a prolonged search was rewarded by finding the body of a newborn child in the attic of the house, secreted under a pile of rags and blood-stained quilts. The placenta was with it, and the funis was entire.

The child was maturely developed, a well-formed female foetus, weighing nearly eight pounds. The surface of the body was very livid; the lips and tongue were purple.

On the front of the neck, near the middle point, there was a crescentic abrasion, the outline representing very nearly the curve of a finger-nail at the end. Over the thyroid gland, there was a scarcely discernible spot of reddening of the size of a large pea. The scalp was without the caput succedaneum of a prolonged labor.

Dissection of the neck found a very small and indistinct ecchymosis on the thyro-hyoid muscle.

The lungs responded negatively to the hydrostatic test; when they were placed in water, either entire or in larger or smaller sections, they sank quickly to the bottom of the vessel. No bubbles appeared when section of the lung tissue was made under water. The organs were of dark color, of dense consistency, with sharp edges, and devoid of crepitation; on their inferior and posterior surfaces were some sub-pleural ecchymoses of the size of a large pea.

The heart was empty and firmly contracted. The stomach and small intestines were empty, their walls being in close apposition. The vessels of the peritoneum were injected as were also those of the meninges. The scalp and skull, however, displayed nothing abnormal.

This case might well be classed as an example of what the books call "infanticide by omission," the mother having neglected to prepare for the birth of her child and having accomplished her desire that the fruit of her illicit pregnancy should perish, not, perhaps, through any overt act of violence on her part, but by her consenting to its death before it lived and breathed outside her body; or while it lay under the

bed-clothing between her thighs, unable to establish the act of respiration.

When informed of the discovery of her child's body the young woman in this case abandoned the false explanation which she had previously given of her extraordinary hæmorrhage, and admitted that she had been betrayed by her lover under a promise of marriage, but she had not realized or admitted that her altered form and absent menstruation were the result of that betrayal. She said that at about half-past two o'clock in the morning before her baby was born, she was taken with cramps which awakened her from sleep; these grew more severe until, at half-past four, "the whole thing came away from her at once." She did not hear any cry or feel any motion on the part of the child; she did not lay her hands on it either to harm it or to help it in its birth. She lay quietly in bed till eleven o'clock, flowing freely most of the time; then she got up, dressed herself and carried the dead child to the attic. In the interval between half-past four and eleven, the child lay in bed between and under her thighs where it was born.

The only anatomical disproof of her statement which the autopsy developed was the extremely slight echymosis on the front of the neck; but this was outweighed by the many negative indications that the child had died as a fetus before it had lived as a person.

CASE IV. Annie P., a cook in a gentleman's family occupying a suite in a well-known apartment hotel near Commonwealth avenue was suspected, not of any unlawful act involving the reproductive organs, but of the larceny of sundry articles of value belonging to her employers. This suspicion having ripened to full maturity, detectives were called in to interview her. Their examination of her was long and thorough. Their conclusion was that the girl was probably guilty and they so reported to the family. The head of the household, after consultation with the officers, decided to discharge her from service at once, rather than to proceed against her on a criminal charge, and she left the hotel late in the evening to go to her home in another part of the city. As she left, she asked and received permission to return early the next morning to take away "a bundle." Just after she had gone, and while the officers were still in the building, the chambermaid went to the wood-bin of the suite below to see if "Annie had secreted any of the stolen things there." She found a bundle, but not the one she sought; the bundle contained the body of a new-born child. Near it were sundry articles of feminine underwear much soiled with blood. In the hopper of the adjacent water-closet, a blood-stained night-gown was found by the officers. No placenta was discovered. It was agreed that it would be best to await the girl's appearance in the morning, upon the ground that this proof of her anxiety about the "bundle" would be of value in case of need. True to her appointment, she appeared early the next day, walking towards the hotel where she was presently taken into custody by the officers to await the result of the autopsy of the child's body. The medical examination developed the fact that the child was still-born; or to state the matter more accurately, that evidence of living birth was wholly wanting. The mother was thereupon permitted to continue her puerperal convalescence in the City Hospital, under the care of Dr. Doe, whose first procedure in the case was to remove a full-sized pla-

centa from the patient's vagina, where she had carried it more than twenty-four hours. Her story of the child-birth, when all motives of secrecy were removed, was as follows: She admitted the illegitimacy of her offspring and estimated that she was about three weeks before her full term when the birth occurred. She made a misstep in her kitchen in the afternoon and this mishap was followed by a few slight cramp-like pains. She went to bed, however, as usual, and slept till she was awakened at about half-past two o'clock in the morning by regularly recurring pains. She got up at three and lay on the kitchen floor. After two hard pains, the child came from her. She made no outcry. There was so little disturbance that the girl who occupied with her the bedroom immediately adjacent, was not awakened, though the door was open. When the child was born, she fell into a swoon or stupor, and lay quietly on the floor for about ten minutes. Then rousing herself, she found her baby lying dead between her thighs. She reached up to the kitchen table, found a pair of scissors there and cut the navel-cord close to her own body. As soon as she felt able, she washed the blood from the floor, wrapped the child's body in her skirts and placed it in the wood-bin behind the kitchen. In the afternoon, she carried it to the place where it was found, meaning to take it away and dispose of it at her earliest opportunity. During the day, she attended to all her duties, preparing the three meals of the family as usual, and fancying, until she fell into the hands of the officers, that her secret was safe. She made a good recovery, without any accidents or complications.

(To be continued.)

DETACHMENT OF THE RETINA IN BOTH EYES WITH ALBUMINURIA OF PREGNANCY: REPLACEMENT OF RETINA.¹

BY O. F. WADSWORTH, M.D., BOSTON.

DETACHMENT of the retina is so infrequent in connection with the albuminuria of pregnancy, that I wish to place a case on record. The case is further interesting as presenting what is also quite unusual in albuminuric retinitis, very extensive choroidal changes.

Mrs. —, twenty-seven years of age, was of rather delicate constitution, but generally in good health. She had a light attack of scarlet fever in the winter of 1885, which confined her to bed only two days, and for six months following the attack had occasional back-ache. She was married in the winter of 1886, and when I was called to her early in March, 1887, was about seven and a half months pregnant.

Except that for a short time she thought she was growing stout, probably due to a little œdema, no unusual symptom was noticed till February 23d, 1887. On that day œdema of the eyelids was observed, but excited no particular attention.

February 27th, she took a walk out of doors and got rather tired, and on the morning of the 28th complained of indistinctness of sight. As this continued and increased, Dr. C. P. Putnam was summoned on March 2d. There was then moderate œdema of eyelids and legs; quite poor vision; the urine was loaded with albumen, and contained many hyaline and granular casts.

March 3d, I saw her in consultation. There was

¹ Read before the American Ophthalmological Society.

moderate edema of the eyelids. The media were clear. There was slight haziness of the disc and all the posterior part of the retina in both eyes; the retinal veins were perhaps a little larger and darker than natural, but there was no marked change in the vessels, which were everywhere clearly seen. In the right eye there was a very general detachment of the retina, mostly with but a thin layer of fluid between it and the choroid; but well toward the equator outward the retina curved sharply forward and its vessels appeared quite dark. At the macular region the refraction was some 5 D. less than at the disc; the retina here was not quite transparent, and showed, when accurately focussed, very faint parallel grayish lines; at the centre was a redder oval, not so red, however, as in the normal condition. In the left eye also was a detachment of the retina of considerable extent over the posterior part of the fundus, but of less degree than in the right. The appearances in the macular region were similar to those in the right. No attempt was made to measure the vision.

March 4th, pilocarpine nitrate, gr. $\frac{1}{2}$, was injected subcutaneously. This caused much sweating and salivation and some vomiting, and, as the directions given were misunderstood, Mrs. — continued sitting up in bed for a long time and became much exhausted. The following night she had a good deal of headache. During the next two days she thought her sight better.

March 6th, the haze of the discs and the surrounding retina was somewhat greater, but the retina in and about the macular region was decidedly less prominent; indeed, in the left eye no detachment in this region could now be made out with certainty. Toward the equator in the right eye there was a prominent detachment along the outer and lower parts—in the left, prominent detachment along the inner and lower parts. In the upper and inner equatorial region of the right eye, the upper and outer of the left eye, the retina was in place and of normal appearance. There were one or two small hemorrhages in each retina. On hasty examination of the vision, words about equal to 2.25 Sn. were read.

March 7th, subcutaneous injection of pilocarpine was repeated.

March 8th, still more haziness of discs and retinae, of faintly yellowish tint, but not enough to obscure the vessels materially. The central portion of the retina perhaps less prominent in the right eye, the grayish markings on this part (resembling the lines on a coarse lithograph) rather more distinct. The bulging detachment toward the equator was now wholly below the horizontal meridian in each eye. Right, 9th of Sn. 3. Left, words of Sn. 1.5.

March 9th, there was great edema of one labium, to relieve which the patient lay flat on her back, and headache, which had generally been present in some degree since the 4th, was much more severe on the 10th and the following night, and vision became worse.

The morning of the 11th, the opacity of the retina had increased in both eyes, and in the left eye there was a faint appearance of radiating stripes around the macula. In the right eye it was doubtful if there was actual detachment in the macular region, and that in the lower equatorial region was less, but over a small space a little downward and inward from the disc the retina curved forward. In the left eye no detachment

could be made out anywhere. Vision was decidedly less, but as it was thought this might be the effect of the headache, which still persisted, although not severe, it was tested again some hours later when the headache had passed off, and was then in each eye much as on the 6th.

The night of the 11th, headache was again very severe. 2 P.M. of the 12th, examination with the reversed image only, while the patient was lying down, gave about the same condition as on the 11th.

Meanwhile the urine had ranged from 40 to 50 $\frac{1}{2}$ in the twenty-four hours, except once, during which time pilocarpine was given, when it was 27 $\frac{1}{2}$, and the bowels had been kept free. It contained one quarter to one half per cent. of albumen, broad and narrow hyaline, coarse and fine granular casts.

The afternoon of the 14th, consultation with Drs. Minot and Chadwick. There was now found a considerable amount of ascites, which had not been present twenty-four hours before. It was decided to induce premature labor. During the consultation slight pains had begun, and these were encouraged. About midnight there was a sudden convulsion. Ether was given, she was bled about 16 $\frac{1}{2}$, and delivered at 4 A.M. of the 15th. The child was got to breathe after considerable manipulation, and did well.

The mother convalesced slowly but uninterruptedly. Vision was at first very low; sixty hours after delivery she could see only movements of the hand in a shaded room.

March 26th. Vision had improved during the last few days so that she could see that her baby was wrapped in a plaid blanket. In each eye the disc outline was indistinguishable, the whole posterior part of the retina gray, opaque, sprinkled with whitish soft-edged patches and small hemorrhages; in the left were radiating stripes around the macula, somewhat more pronounced than on the 11th. No detachment could be made out in the left eye, but in the right, far downward, the retina bulged forward over a small area, on which the vessels appeared very dark. In both eyes, well upward and laterally, the retina was transparent, and there were seen irregular pigment changes in the choroid, partly lighter, partly darker than normal.

April 14th, she saw, as she had for some time, "as through a moving veil, as of falling water," but much better. She read slowly at 10' words about equal to Sn. 1.75. The eyes were not tested separately, but the left was evidently the better. L. F. of normal size. R. F. a little contracted above, in other directions normal. Right, disc outline rather indistinct; a few white spots about the macula, but the retina generally transparent; numerous and extensive changes in the epithelial and choroidal pigment, darkish patches extending across the macular region and smaller ones scattered widely over the fundus, also much absorption of pigment; far downward detachment of retina to small extent. Left, the appearance of the fundus was very similar to that in the right, but the choroidal changes, although numerous and extensive, were not so great, and there was no detachment.

Mrs. — was last seen on May 7th, soon after which date she went to the sea-shore. The discs were somewhat more defined, but in other respects the fundus was much the same as on April 14th, except that now no detachment could be discovered in either eye. R., J. 13 at 6" — 8"; L., J. 5 at 6" — 8".

I have been informed that a slow improvement of sight has continued.

NOTE. December, 1887. There is still slight but constant shimmering before the right eye. R. V., with $(-)$ 36, $\frac{1}{2}$. There are small defects in the central portion of the field, but the extent of the field is normal. L. V., with -24 C -24 cyl. axis 20° , $\frac{1}{2}$; field normal. The pigment changes in the fundus are somewhat less, and the white spots in the macular region have disappeared. The retina is everywhere in place.

Clinical Memorandum.

HYDRAMNIOS.¹

BY WILLIAM INGALLS, M.D.

Mrs. S., twenty-seven, in labor with her second child, June 15, 1887. My first examination proved the os to be high, patulous, admitting the finger, which touched, I thought, the head of the child, which was stationary during a pain or two, and that the vagina was roomy. Two hours later the pains had become stronger, the os somewhat dilated and still high, and the membrane in contact with the head. I now examined the abdomen which was large, not "globular" in form, undulating during pains as well as in their intervals. At the end of another hour pains had become stronger, the os a little more dilated and not much lower, the membrane still tightly covering the head. I now tore the membrane but not an ounce of fluid followed. Forceps were applied and the delivery was followed by a torrent of amniotic fluid for four or five seconds. The child was perfect.

In November, 1885, Mrs. S. was delivered by instruments of her first child, which was born dead.

In June, 1886, she was attended by Dr. Buckingham, who reports from the patient that "her menstruation began one month after the birth of her first child, and has appeared with intervals of six or eight weeks ever since, that for the last eight weeks she has been flowing constantly. Her opinion is that she has had a number of abortions and that she now believes herself pregnant, and that she has felt motion; has had no morning sickness." Dr. Buckingham continues; "abdominal examination proves little or no enlargement; vaginal, proves the os to be wide-mouthed, the cervix torn; absence of fœtus, no clots nor pains."

Persisting in the belief that she was pregnant, Dr. W. L. Richardson was called in consultation, who assured her she was not so. Treatment was advised but declined, on account of her unshaken opinion. Counting back, conception took place about three months after the visit of these gentlemen.

In the "selected obstetrical works of Sir James Y. Simpson," there are these items:

"*Hydramnios*, large size and globular form of the uterus, with no irregularities; tenseness of the abdominal parietes; absence of fetal movements; rapid increase of the size of the abdomen; pain in different parts of the uterus, especially in the groins and pelvis; œdema or anasarca of the lower extremities; difficult respiration; on examining 'per vaginam,' the inferior surface of the uterus much expanded; ballottement unusually free and distinct. Treatment, rupture the membranes."

In my case there was not globular form of uterus, nor was there irregularity. There was no tenseness of abdominal parietes even during pains; no œdema or anasarca of lower extremities. The lower segment of the uterus was expanded.

The subject "*Hydramnios*" is treated quite fully in Charpentier's *Encyclopædia*, there being reports from forty-five observers: plural births, deformity of fœtus, thickening of membranes, fœtal ascites, faults in the cord, and other mal conditions; the observation by the author after their recital is this: "We, therefore, conclude that pathological anatomy gives us no certain data; for all the above lesions have often been found in cases in which there was not the least trace of dropsy of the amnion." In the only case under the writer's care, which occurred years ago, the child had double hare-lip and fissure of palate.

McClintock noted that out of thirty-three cases of hydramnios, one terminated in abortion at five months, one at six months, ten in premature delivery; in twenty-one cases the child appeared to have obtained the normal term, nine of them still-born, five of them putrid, ten born alive but died in a few hours after birth.

It is between the fifth and seventh month of pregnancy that the realization of some abnormality is manifested by those who do not go on without mishap.

Reports of Societies.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

C. M. GREEN, M.D., SECRETARY.

NOVEMBER 12, 1887, the President, DR. WILLIAM L. RICHARDSON, in the chair.

DR. DRAPER read a paper on

SOME OF THE OBSTETRIC AND LEGAL RELATIONS OF INFANTICIDE.¹

DR. BLAKE said that the present laws concerning infanticide were defective, and he believed it to be the duty of medical men to strive to effect such a change in the laws that guilty mothers can be punished. The cases reported by the reader illustrated what he believed to be the fact that there is less danger in labor among the classes least removed from a purely animal creation,—apparently on account of the comparatively low development of the nervous system. In the highly civilized classes conditions and results vary widely from those observed in women of a low grade of civilization.

DR. J. P. REYNOLDS said it was an interesting inquiry whether the state of the law is responsible for the present careless view of fetal life, or *vice versa*. It is a remarkable fact that many people do not think that the fœtus has any rights in the first half of pregnancy; and it is astonishing to see how many married people think it is no crime to destroy fetal life. He questioned whether it was a well-established fact that women delivered in the manner described by the reader did well without good subsequent care: he believed that without careful after-treatment such women often had trouble. The reader's cases had good care in a hospital.

¹ Read before the Obstetrical Society of Boston, November 12, 1887.

¹ See page 7 of this number of the Journal.

DR. SINCLAIR said that in regard to the criminality of abortion the moral sense of very many people was blunted; he had been generally unsuccessful in his efforts to persuade people against resorting to this unnatural escape from their trouble.

DR. STRONG asked the reader what the legal distinction was between the abortionist and the mother who killed her new-born infant.

DR. DRAPER replied that abortion was considered by Statute law as a crime against the mother and not against the fœtus. He thought the present law was wrong and should be changed so as to designate the work of the abortionist as a crime against the fœtus.

The PRESIDENT asked the reader whether, in case a child's head only is born and the child breathes, it is considered alive enough to inherit property, but not alive enough to be killed.

DR. DRAPER said such was the fact. He would like to have an expression of opinion on the following hypothetical cases:

1. A primipara is accused of infanticide, her new-born baby having been found dead in a privy-vault: the plea in defence is precipitate labor, and that the baby was born and fell into the vault while the mother was in the act of defecation. Is this plea a good one?

2. A new-born infant is found dead with fracture of the skull: the mother's plea in defence is that she being in precipitate labor the baby was suddenly expelled and fell upon the floor, and that she could not help it. Is this a valid plea?

DR. J. P. REYNOLDS said he was once called to a primipara in labor and found her sitting on a chamber-vessel, and in the vessel was the baby, drowned in the liquor amnii: the child was a large one. There was no evidence that the mother was responsible for the accident, although it is hard to imagine how the mother could have mistaken the expulsion of a large fœtus for the passage of faeces.

DR. BUCKINGHAM, a guest, spoke of a patient at full term who had had a slight sensation of discomfort only; but when she arose from a seat at the window to go to her bed, the baby was delivered on the floor.

DR. BOARDMAN had seen two instances of precipitate labor in the same patient. In one instance, as the mother was stooping over a chamber-vessel, the baby was expelled and struck the vessel, without, however, suffering injury. In a subsequent labor, the woman was delivered suddenly while standing; but the baby was saved from possible harm by being caught before it struck the floor.

The PRESIDENT spoke of a girl of about eighteen who was sent into the Rotunda Hospital in Dublin, having had slight pains in her stomach: she was found not to be in labor. In the evening, while the girl was waiting, the baby was born suddenly without, according to her own statement, any pain.

As an illustration of the apparent impunity with which women often resume their daily affairs soon after labor, DR. FARLOW, a guest, cited the case of a washerwoman who went to her employer's and performed her usual day's work, and returned for the same service a week later. In the intervening week she had given birth to twins of full size.

DR. DOE once attended a primipara in severe labor followed by hæmorrhage: on the third day thereafter she was found at the wash-tub.

DR. ABBOT mentioned the case of a iv-para whom he delivered of twins, and who got up the next day

and resumed her work: she never had any bad symptoms. In another case, to which he was once called before breakfast, the baby was born before his arrival and the mother was found sitting up washing her breakfast dishes.

DR. FORSTER cited the case of an unmarried girl, who was delivered unattended, who cut and tied the funis herself, carried her baby to an asylum and then walked to the Hospital: she made an excellent convalescence.

As an instance of the occasionally observed ability of women to bear the pains of labor in silence in order to conceal their condition, DR. GREEN mentioned the case of a primiparous girl of seventeen, who, being in a lodging-house, did not wish the fact of her being in labor to be known in the house. The labor was twelve hours in duration and was terminated with forceps, and no anæsthetic was used. Throughout the labor and the forceps delivery no sound escaped the patient's lips: she made a speedy and non-febrile recovery.

DR. RICHARDSON cited the case of a cook who served dinner for a dinner-party and remained at her post until the meats were sent up. She then went upstairs, was delivered of a living child, tied the cord, and returned to the kitchen in time to serve coffee and dessert: she then fainted and fell to the floor.

DR. INGALLS read a brief paper on

HYDRAMNIOS.²

DR. FORSTER reported the following case of

INVERSION OF THE UTERUS.

"Inversion of the uterus is a rare occurrence. Braun states that of 150,000 births in the clinics respectively under the charge of Spæth and himself, not a single case of complete inversion has come to their notice. There was one case in 190,000 confinements at the Rotunda Hospital in Dublin."

Reading this in Lusk, after returning from a confinement case early last Monday morning, I thought the following case would be of sufficient interest to briefly report:

Sunday afternoon I was called to Mrs. S., twenty-seven, American, in labor with her first child. At about 5 P. M. the membranes broke, and a breech and right foot presented. The pains were regular, and the patient's strength good. After the scrotum appeared at the vulva slow progress was made, and at 12 P. M. I decided to give ether and deliver. Ether was given at quarter of one. The administration of the anæsthetic was intrusted to a brother practitioner, whose assistance I had obtained for that purpose. The delivery was easily and rapidly made by first bringing down the presenting foot, there being no compression of the cord. The child was alive, and soon cried lustily at five minutes of one. The delivery of the head caused a tear of the perineum, necessitating the introduction of two stitches. My assistant offered to take charge of the placenta while I prepared my needles. This I allowed him to do; returning to introduce the suture, I was surprised to find what I first thought to be the placenta occupying the vagina, but he quickly informed me the placenta had all come away, and I then remembered seeing it in the basin. Sooner than it takes to write it, I was horrified to see the uterus completely inverted and

² See page 13 of this number of the Journal.

outside the vulva. I lost no time in returning the organ, and with comparative ease succeeded, although at first it required considerable force. Some hæmorrhage followed, but I carried up some ice and was soon able to check it, the uterus rapidly and firmly contracting. The rent in the perineum was stitched, and by two o'clock, the pulse being at 78, I left the patient.

Antisepsis, as practised at the Boston Lying-in Hospital, was used throughout the case, with the single exception that the ice was taken from a basin of water caused by the melting of the supply provided for such an emergency as occurred.

There was no symptom of shock present, and really very little hæmorrhage. On the third day two odorless clots came away, and a large one on the fourth. The lochia had been inoffensive, the uterus firmly contracted, the milk-supply sufficient, the patient comfortable.

THE NEW YORK ACADEMY OF MEDICINE.

STATED Meeting, December 15, 1887. DR. T. H. BURCHARD read a paper on

THE MODERN TREATMENT IN STRANGULATED HERNIA.

He said that, encouraged by the remarkable successes obtained in the treatment of non-strangulated hernia by the methods suggested by Banks, Czerny and others, surgeons had latterly paid special attention to the radical cure operation as applied to cases in which strangulation existed, and the results achieved had been most gratifying. The general principles upon which, as a legitimate surgical procedure, the operation was based were the following:

(1) A more general recognition by the profession of the value of time in the earlier stages of the strangulation; so that surgical relief could now generally be rendered before pathological changes which were irremediable, had taken place in the tissues.

(2) Modern herniotomy implied an abandonment of those uncertain and pernicious methods and practises which, founded on a false pathology, had sought to relieve the strangulation by producing a condition of systemic relaxation. It was now recognized that spasm, as a causative agent in the production of strangulation never exists.

(3) Modern herniotomy restricted the employment of taxis to within limits which were rational and safe. Necessary as properly directed taxis was in the reduction of strangulated hernia, by its indiscriminate and reckless use irreparable damages had not infrequently been done the intestine; and he could not but feel that it had been a misfortune to designate by a special appellation the manipulations employed in reducing hernia, since the practice had exaggerated their importance in the treatment, and been a fruitful source of abuse.

(4) Modern herniotomy implied the early resort to a cutting operation. Many lives had had to be sacrificed before the profession seemed to realize that the gangrene and ulceration, the fecal extravasation and stercoraceous vomiting, the peritonitis and collapse, were not necessary and integral portions of the primary conditions of strangulation, but secondary complications, developing later on in the progress of the disease, and the legitimate result of delay in affording relief to the original constriction. If, however, the strangulation

were relieved before inflammation of the gut or adjacent tissues had supervened, these grave dangers could be avoided. The practice advised by Dr. Burchard was, if possible, to cut every case of strangulated hernia in which gently applied taxis, under anaesthesia, preceded, as a rule, by the application of ice, does not yield reasonable expectations of success within about one hour after positive symptoms of strangulation have presented themselves. In his opinion nothing was gained by delay, while everything was risked.

(5) Modern herniotomy was an antiseptic operation; demanding the fullest application of Listerian principles.

(6) Modern herniotomy required in the disposition of the hernial sac the finest impartiality of judgment. Certain cases required incision, while in others the strangulation could be readily reduced without opening the sac; so that it would be folly to thus complicate the operation and expose the patient to unnecessary danger.

(7) Since Mitchell Banks, of Liverpool, had urged the possibility and expediency of perfecting the old operation of kelotomy, so as to add to the operation done for the relief of strangulation the inestimable advantages of an operation for radical cure, the strongest possible encouragement had been given for the attainment of an early, thorough and perfected operation.

Regarding the special treatment of strangulated hernia, Dr. Burchard said that he had nothing novel to add to the excellent recommendations already published on the subject. His experience had led him to the adoption of a plan of treatment substantially as follows:

(1) Pain allayed, vomiting quieted, and nervous tranquility secured by the hypodermic administration of morphia with atropia.

(2) As soon as practicable a careful examination is made of the hernial tumor; any attempt at reduction being studiously avoided.

(3) If evidences of local inflammation are present, or if there is much swelling of the tumor, a poultice of flaxseed meal and cracked ice, or the ice-coil is at once applied; these being dispensed with, however, if the patient is feeble or the strangulation is of long standing.

(4) A stimulating enema of turpentine and oil, or a large emollient of thin flaxseed tea, is administered, and the rectum thoroughly washed out. Should it be required, the patient is catheterized. If the tumor is at all disturbed no attempt at taxis is made until

(5) The patient is anaesthetized; permission having first been obtained to proceed with the operation in case taxis should fail.

At this point, Dr. Burchard said he wished to emphasize the advantages to be gained by putting the patient under full anaesthesia (preferably by chloroform), covering the tumor with a rather large and heavy ice-poultice, elevating the lower extremities, and keeping the hands entirely off for a period of from thirty to forty minutes. In a number of instances thus treated he had had the satisfaction of seeing the tumor almost imperceptibly slip back of itself, even after prolonged taxis had been unsuccessfully employed. As to just how long the attempt at reduction by taxis was justifiable, no absolute rule could be laid down. To the practised touch a moment was sometimes sufficient to determine the possibility of a suc-

cessful reduction. In other cases it was advisable that the trial should be prolonged for twenty, or even thirty, minutes, provided always that only the gentlest manipulations were employed.

Taxis having proved unsuccessful, the operation should at once be undertaken. By careful dissection the sac should be fully exposed; when, if the strangulation were of recent occurrence, and the sac free from inflammation and of normal appearance, an effort might be made, by gentle taxis, to secure its return into the abdominal cavity. Should adhesions bind down the sac, they might be broken up if not too extensive; precautions being taken that all bleeding has been effectually checked before the sac is returned. If constricting bands should girdle the body of the sac and prevent its return, they should, if possible, be divided. Adhesions around the neck of the sac were to be treated with great deliberation. Having pointed out the complications and dangers to which such adhesions might give rise, he mentioned that serous effusion within the sac might be safely gotten rid of by puncturing the sac with a capillary hypodermic needle.

If now the sac could not be readily reduced, he went on to say, it should be carefully opened. Unprejudiced surgeons, he thought, were at present agreed that in all those cases where it would be safe to replace the hernia by simple taxis, if that were possible, the same might be done after restraining adhesions of the sac or constricting bands around its neck had been dividing with the knife. But in those cases in which the symptoms were suggestive of an aggravated condition of the bowel, and on account of which it would be dangerous to attempt to reduce it by taxis, it was necessary to open the sac. The sac having been opened, the stricture should be sought for and divided.

Dr. Burchard here alluded to some points of practical interest in connection with the return of the gut. One of them was in regard to cases of deep congestion. How far the vitality of the bowel was consistent with change of color, drying of the secretions, emphysematous crackling, and fecal odor, was a difficult matter to decide. He had seen two cases in the practice of the late Dr. James R. Wood in which a gut that was actually purple was replaced, and in both instances with the best possible results. In one case of his own, where a deep furrow marked the seat of the stricture, and where the gut itself was of a dark maroon shade, the condition of the intestine did not warrant its reposition for nearly three hours after the operation: while in another case, of more prolonged strangulation, with grave constitutional symptoms (the condition of the gut being almost identical, with the exception of the furrow, or groove), the circulation was restored in one-fourth the time. He said that he could not feel that we were ever justified in returning strangulated intestine until it gave some evidence of reanimation; while it was perfectly possible to keep it enveloped in moist flannels and rubber tissue for several hours. In cases of ulceration it was sometimes advisable to practice partial excision before returning the intestine, and in some instances the condition did not warrant this until several hours after the operation. Extensive perforations and lacerations occurring in herniated bowel necessitated the formation of an artificial anus.

Treatment of adhesions. If acute and simply binding down the body of the sac, they might be gently

broken down. If they surrounded the neck of the sac, binding the intestine to the upper end of the sac, or the intestine to the cord, or to an undescended testis, it was necessary to accomplish the operation with the greatest possible gentleness and circumspection, on account of the extreme friability of the tissues. Chronic adhesions might be divided with more boldness, provided no traction were made on the inflamed intestine. In all cases the intestine, both above and below the strictured portion, should be carefully examined after the operation.

The radical cure. The modern operation found its greatest advantage in the radical cure it secured by the complete closure of the sac, and the permanent obliteration of the hernial canal; and it had been successfully performed upon all forms of hernia, inguinal, femoral and umbilical, with equally satisfactory results. In the present light of hernial surgery he thought that no operation for strangulated hernia could be said to be properly performed without the final closure of the hernial canal. By this practice five decided advantages were gained.

(1) Complete isolation of the peritoneal cavity, and its permanent closure.

(2) Permanent closure of the patulous orifice through which the gut escaped.

(3) Shortening of an abnormally elongated hernial canal.

(4) Prevention of septic percolation into the cavity of the abdomen in case suppurative should ensue.

(5) The inestimable advantages that would result to the patient from a permanent cure.

In the performance of the operation the clinical requirements were, first, a safe and satisfactory disposition of the sac, and second, the total obliteration of the hernial rings, and the accurate coaptation of the sides of the canal.

Disposal of the sac. The sac might be dealt with in one of several ways:

(1) It may be reduced within the abdominal cavity, and the canal then obliterated.

(2) It may be left within the canal (especially when firm adhesions prevent its safe return), and the superficial tissues and the skin be firmly approximated over it.

(3) It may be ligatured, the hernial investment amputated, and the stump returned.

(4) It may be ligatured and amputated, and then invaginated in the canal.

(5) It may be drawn up upon itself and fixed as a bulwark against the internal ring, as in Macewen's operation.

The abdominal wall may be divided longitudinally and parallel to the pillars, and the sac then woven into the fibrous structure, as suggested by Dr. Joseph D. Bryant.

The first method, he thought, should be dismissed from consideration except in very acute hernia, on account of the danger of causing adhesions, with their attendant pain and discomfort, or of lighting up a peritonitis.

The objection to the second method was that with the sac remaining *in situ* complete obliteration of the canal could not be secured. A canal thus treated became exceedingly sensitive, and a truss could scarcely be worn. Between the remaining methods a choice could sometimes be made only after mature deliberation.

Dr. Burchard said he had operated in nine cases of strangulated hernia, in which he had been enabled to carry out the operation in all its details. Eight of these had recovered, and one died on the fourth day from delirium tremens. Having alluded to a number of interesting points in connection with these cases, he spoke, in conclusion, of two practical matters of importance: (1) In cases of stercoraceous vomiting and collapse, nothing had equalled in his experience the use of hot water employed as a stomach douche, as practised by Tait. A long, soft rubber tube was passed into the stomach, and a stream of hot water very gently injected in a continuous current. By this means the stomach was not only thoroughly washed of its fecal contents, but the best possible stimulant in cases of hernial collapse was furnished by hot water so employed. (2) As a factor in the production of acute general peritonitis, concealed hernias in exceptional localities were apt to be overlooked. He had met with two instances of this kind in his own experience; one being a case of bubonocoele of a direct variety, and the other one of concealed femoral hernia.

Dr. ROBERT F. WEIR made some remarks on the question,

HOW SHALL THE SAC BE TREATED IN HERNIOTOMY?

He said that Dr. Burchard had covered the ground so completely, that but little remained to be said. Like Dr. Burchard, he thought that the surgeon should be guided by the circumstances of each individual case, and he did not advocate any one method of procedure to the exclusion of others. He illustrated by diagrams the operations for radical cure by Macewen and Czerny, and went on to say that while the radical operation unquestionably marked an improvement in this branch of surgery, it could not as yet be regarded as a perfected operation. Having given some statistics showing the comparative frequency of relapses, he said, in conclusion, that surgeons were everywhere practising the operation, and, he feared, too freely; that is, too freely in non-strangulated hernia.

Dr. W. B. DE GARMO read a paper on

THE CONSERVATIVE TREATMENT OF IRREDUCIBLE AND INCARCERATED HERNIA.

He said, in opening, that his paper did not relate in any sense to strangulated hernia. He would present the histories of a number of cases, which were intended to show that the two opposite opinions concerning operative interference and non-interference were both wrong. He would advocate operation in certain cases which could not be reduced, but he thought it unwise to operate in all cases. The first case which he related was one of irreducible inguinal hernia of ten years' standing. The first day, he devoted one hour to making taxis (by which term he wished to be understood as meaning certain very gentle manipulations, which were quite different from the taxis usually employed), but with apparently very little effect. By the fourth day, however, he succeeded in reducing the hernia by this means. At first, a truss could be worn for only a short time, but the tolerance of it gradually increased. The second case was also of ten years' standing, and the hernial tumor was of the size of a foetal head at full term. The hernia was complicated, as was frequently the case, with a piece of omentum, but it afterwards disappeared under the pressure of the truss. After the

hernia was first reduced, it was impossible for the patient to wear the truss in a standing position for a time.

The third case was characterized with attacks of colic occurring in connection with the hernia. The hernia was gradually reduced by gentle manipulations, after which a truss was worn with comfort, and by the end of a year the patient thought himself cured. As a result of jumping from a carriage, however, the hernia became strangulated. An operation was then performed, and he made a rapid recovery. Dr. De Garma narrated seven other cases, and said, of the ten, there were seven reductions and two failures, while one case was abandoned on account of the patient having diabetes.

He then went on to speak more particularly of the manner of changing these supposed irreducible hernias into reducible ones. The first thing, he said, was to see that the mass was freely movable in the sac, and then use compression, rather than ordinary taxis. In the second place, the tumor was to be separated from the vicinity of the testicle, if it were situated in the scrotum. In other words, it was to be perseveringly stripped from its lower adhesions and gradually worked upwards, no force whatever being used. The complete separation of the omentum so frequently forming a part of the mass was accomplished before the reduction proper was commenced. In some cases, Dr. De Garma is in the habit of directing self applied taxis, to be practised daily. After the reduction, the hernial sac usually remained; but if the hernia was kept properly in place by a well-fitting truss, the sac often disappeared in the course of time. Taxis was to be practised from fifteen to forty-five minutes at a time, and repeated once a day. None of his patients had been confined to bed for more than one week.

In those cases in which it was found impossible to reduce the hernia the tumor was compressed by a truss, and a strong suspensory support was also employed. It was important, however, to distinguish the contents of the tumor. If only omentum were present no trouble would result, but if bowel were present the truss would be apt to cause more or less discomfort, and probably lead to strangulation.

Dr. H. G. GERSTER read a paper entitled

REMARKS ON STRANGULATED HERNIA IN CHILDREN.

This, he said, was a very rare condition in children, and he had met with but four instances of it in his experience. There was nothing peculiar in the character of the strangulation in such subjects, and he would direct attention only to a point of difference in the treatment required, as compared with that in adults. This was on account of the difficulty of preventing infection of the external wound in small children. In most instances the hernia was congenital, and the neck of the sac was usually not very wide. On account of the danger of infection he advocated an open treatment of the wound. Primary union did not occur after suturing, and, therefore, after securing occlusion of the sac and the abdominal opening, he packed the open wound with iodoform gauze, and thus secured an aseptic condition.

Dr. Gerster then proceeded to relate the histories of the four cases that he had seen. In one of them, a child two years and three months old, an error of diagnosis was made. The tumor was at first mistaken for hydrocele; but the true nature of the case became ap-

parent when the hypodermic needle was inserted and brought away intestinal matter. It was also found to be a strangulated hernia; but as no urgent symptoms were present no active interference was made at this time. By the next day, however, all the ordinary symptoms of strangulated hernia had manifested themselves, and the radical operation was performed. During this, a slight wound was made in the gut on account of the adhesions present, and this was sewed up with the Lembert suture. In another of the cases, strangulation of the hernia occurred four separate times in connection with eclamptic attacks, to which the child was subject. It was always successfully reduced under the use of chloroform; but when the accident happened the fifth time it was determined to perform the radical operation, after which there was no further trouble from the hernia.

DR. V. P. GIBNEY said that he should like to make some protest against the strong condemnation of taxis which Dr. Burchard had expressed, as he had seen a number of aggravated cases of strangulated hernia reduced under taxis as employed by the average practitioner. As regards strangulated hernia in children, he did not recall a single instance in all his experience in which the strangulation could not be reduced with the aid of chloroform. Furthermore, if it could be reduced, it could be cured simply by the wearing of a suitable truss. As the operation was a more serious one than in adults he thought, therefore, that operative interference should never be resorted to in children; and such interference became still less necessary in the light of the successful results accomplished by the conservative methods advocated by Dr. De Garmo this evening.

DR. WEIR said that he had had two cases in children like Dr. Geyster's, and both had proved fatal. In two other cases he had successfully reduced the hernia without operation, by resorting to the expedient of inserting the finger into the rectum, and thus combining internal with external pressure.

DR. DE GARMO said that he had met with only temporary incarceration in children. No bad results had ever occurred, and he had never found it necessary to resort to taxis in such cases. In reply to a question from Dr. Weir as to just what he meant by taxis, he said that the gradual working of the tumor loose by passing the fingers around it was not taxis proper, but rather pressure. By taxis he meant the manipulation of the neck of the sac, but employed in such a way as to avoid pressure back against the abdominal rings, which was apt to be resorted to in taxis as commonly practiced.

NEW YORK NEUROLOGICAL SOCIETY.

STATED meeting October 5, 1887, the President, C. L. DANA, M.D., in the chair.

CASE OF CONGENITAL ABSENCE OF THE FACULTY OF CO-ORDINATION.

DR. G. M. HAMMOND presented a boy four years of age, brought to his clinic on account of inability to walk. He was born at full term. Labor was natural. He appeared to be perfectly healthy at birth, but shortly afterward he became sick, and continued more or less ill for six months. The attending physician diagnosed colic. Since recovery from this attack

the patient had had no sickness. The special senses were normal. The patient understood as well as other children of his age. Perhaps he did not speak as plainly as he should, but two other children in the family, perfectly healthy, talked in the same manner. There was no history of syphilis. The patient was well formed. The muscles of the limbs were well developed for a child who did not walk. Muscular reaction to both electric currents was normal. The reflexes were normal. The only apparent reason for his inability to walk was want of power to retain his equilibrium. He could crawl on his hands and knees perfectly well unless he attempted to go very fast, when he would fall, and he always fell toward the right. He could stand holding to a chair, and walk pretty well if held upright. There was also inco-ordination of the upper extremities. He widened his base in standing. Dr. Hammond had not decided whether there was congenital absence of sensory tract in the cord or cerebellar disease.

DR. JULIUS RUDISCH had seen two similar cases, both in girls, one about eight years old and the other about thirteen. The first was seen some years ago, was under observation but a short time, and his recollection of the case was indistinct, but he was impressed with what he took to be muscular weakness, not simply ataxia, but weakness in the back. The child, if sustained, could walk well; if not sustained it would fall, like the boy represented by Dr. Hammond. The older patient could walk, but in a peculiar ataxic way in the position of marked lordosis. The legs were well developed, and for that reason he thought the trouble was in the muscles of the back. The cases were not, in his opinion, congenital locomotor ataxia.

DR. N. E. BRILL, thought such cases were not uncommon, especially among idiots. The gait of the boy presented reminded him of the swaying motion of a cat sent Dr. Spitzka by Professor Wilder. Other actions than walking were natural. Rumpf reported a similar case and found a rudimentary cerebellum. Dr. Spitzka removed the cerebellum of this cat and found it natural. Dr. Brill thought we had to distinguish in these cases between locomotor ataxia and static ataxia. Dr. Hammond's case appeared to be one of static ataxia due to rudimentary cerebellum.

THE PRESIDENT had found in his case-books one in which a provisional diagnosis of infantile ataxia was recorded. The girl, about two years old, was well-nourished, large. Could not co-ordinate the hands or feet. In addition there were some forced movements: the head would suddenly plunge forward.

VESICO-GENITO-POST-FEMORAL NEURALGIA AND NEURITIS.

DR. LANDON CARTER GRAY read a paper, in which he described two cases, seen during the year, of a peculiar variety of neuralgia and neuritis that had not, so far as he had been able to ascertain, been hitherto described. The first patient was a man aged forty, good general health, but marked lithamic temperament, subject every summer to quasi-malarial attacks. Hitherto his neuralgia had been gastric, or intestinal. He escaped his usual attack this year until in July the temperature fell in one night forty-eight F., and on the second day following, when getting out of bed, the patient felt a sharp tingling pain

through the buttocks, perineum, scrotum, tip of the penis and down the back of both thighs to somewhat above the knee. Some slight smarting was felt in urination. Toward the afternoon the pain began to lessen, but became much worse again, following a Turkish and Russian bath. The cutaneous pains became violent, urination scalding, the bladder became parietic. The urine had to be forced into the urethra. For four days the temperature was from 100 in the morning to 102 or 103 in the afternoon, the neuralgic symptoms still existing.

The second case was that of a female, aged thirty-five, seen in consultation with Dr. Burge, September 6th. During the past two years the patient had had a good deal of sciatica; otherwise had had good health. In December last she was suddenly attacked with sharp pain in the buttocks, perineum, labia, and down the back part of the thighs to the knee. There was simultaneous retention of urine, requiring the catheter. Several weeks later Dr. Burge saw the patient and found tactile anaesthesia of the buttock, perineum, labia, and the back part of the thighs to just above the knee. Dr. Gray saw the patient nine months after the onset of the trouble. She then had vesical anaesthesia, and voided urine without her knowledge. Over the area just mentioned, except the labia, which he was not allowed to examine, he found impairment of the tactile, temperature, and pain senses, but slightly less marked near the knee than above. There had never been any motor impairment.

These cases had a clinical interest because a knowledge that such a neuralgia might occur would make us chary about diagnosing a central affection, as we might well be inclined in the early stage, especially when there was vesical, motor, or sensory paralysis.

Dr. RUDISON asked whether an examination had been made for prostatitis, which caused symptoms in a degree like those described.

Dr. GRAY said the area of distribution of the pain was not like that in prostatitis; besides, the second case occurred in a female.

Dr. W. H. THOMSON referred to the case of a woman from the country, a locality said by her physician to be free from malaria. After a prolonged convalescence from an attack of pleurisy she began to suffer severe pain in the anterior part of the left thigh, and from slight trouble with the bladder, the pains coming on certain days of the week, lasting one day and two nights. This continued five months, when she was free until the following fall. The medicine prescribed by Dr. Thomson had not prevented a return of the singular symptoms again the present fall. There was no indication of sciatica.

DISCUSSION ON THE USES OF HYOSCYAMINE.

THE PRESIDENT stated that there were two preparations of the drug, the crystalline and the amorphous, the former seemed to be similar in property to the opiates, while the latter seemed to have neurotic properties. He had heard that hyoscyamine was employed in the asylums for the insane in New York, but not very successfully, whereas in the asylums of Pennsylvania its success had been marked. He had employed hyoscyamine in paralysis agitans, in chorea, and in a few cases as a hypnotic, and it had been employed as a hypnotic to a considerable extent in his service at Bellevue Hospital. The number of cases of chorea in which he had used it was six; in three it

was noted to have been of benefit, or caused very rapid or very marked improvement. One of the cases was marked, and had not yielded to other treatment. In three cases the results were very doubtful. He had employed it in four cases of paralysis agitans, in two, he thought with unquestionable benefit. In two it seemed to produce no benefit. On the whole, he thought that unless given at rather an early stage of paralysis agitans it did no good. The form employed in chorea and paralysis agitans was the crystalline, but he was not sure that the amorphous form would not be the better preparation in such cases. He thought we could get along perhaps as well without as with hyoscyamine.

Dr. B. SACHS's experience with hyoscyamine had not been very extensive, but he had employed it in a few cases of paralysis agitans, acute mania, and the insomnia accompanying the neurasthenic condition. He had employed only the crystalline form. In contradiction to what the President said, that it was best to give it in the early stage of paralysis agitans, he remembered one case in which every other therapeutic agent had been tried without success, when hyoscyamine was administered in about one-hundredth of a grain doses twice a day, with the effect of making the patient very much more comfortable, and of diminishing somewhat the annoying movements of the hand. In another chronic case it had been of no benefit. He had obtained no effect from the drug when administered to allay the excitement of acute mania. It had also been disappointing in insomnia accompanying neurasthenia. It seemed to be of more value against insomnia from mental restlessness.

Dr. N. M. LESZYNSKY said that about eight years ago it was quite fashionable to use hyoscyamine in asylum practice, and he had employed it in chronic mania, acute mania and epileptic forms of insanity. First, he used the amorphous, and later, sulphate of hyoscyamine; it was claimed that the latter form was easier absorbed, and produced its effects in smaller doses. The sulphate was also preferred for hypodermic use, in which manner he had employed it in one-sixtieth of a grain doses. To patients with recurring attacks of maniacal symptoms the drug was given a few days before an expected attack and continued until the attack was aborted.

In a state of exhaustion he would regard hyoscyamine as a dangerous drug to administer, but where there was no objection to its use on that ground he had known it to produce sleep where chloral and morphine had failed. Given to patients subject to epileptiform convulsions before menstruation it seemed to avert the attack. He had given it in small doses in two or three cases of chorea, and thought it produced some benefit.

Dr. L. C. GRAY had been using hyoscyamine ever since it had been introduced to the profession, and he must say that, for certain purposes, there was no drug in the pharmacopoeia that he could not better afford to dispense with. The most convenient form was in tablets, one one-hundredth of a grain. In some people hyoscyamine would produce seemingly serious retention of urine. It might also produce disastrous results if given to persons whose general strength was below par. In an old gentleman, with atheromatous arteries, hypertrophied and feeble heart, one one-hundredth of a grain of hyoscyamine caused a condition of collapse. He knew of one patient suffering from

melancholia, who was sent to Greenwood by hyoseyamine. He had given it in two cases of chorea, one being an exceedingly violent case, the child finally dying in a convulsion. To that patient he could never give a second dose of hyoseyamine, because of the alarming prostration which a first dose would cause. In another case in which the child had to be held in bed, the drug proved an effective means of restraint, but the child was always found prostrated to a marked degree the next day. In paralysis agitans it had been very useful, and came to be with him a routine treatment. He thought the reason why it had been more benefit in his practice, was that he combined with it some stimulant or tonic to prevent its depressing effect. He gave with it good food, one or two grains of quinine a day, sometimes alcoholic stimulants. He had satisfied himself that it was the hyoseyamine in this treatment which had a restraining effect upon the movements in paralysis agitans.

But it was especially in cases of mental trouble that hyoseyamine was of great benefit. In insanity with hallucinatory symptoms, especially in the early stage, before the patient could be taken to an asylum, hyoseyamine would do much toward restraining the patient, and it would seem, aided in cutting short the disease. He was very careful to give no more of the drug than was absolutely necessary, and he combined it with bromide of potassium which increased its effect. He had never seen hypnotic effects from hyoseyamine.

Dr. W. H. THOMSON said that his experience with hyoseyamine almost from the beginning, rather prejudiced him against it. One of the first cases in which he employed it, was that of a Judge, troubled with insomnia. The next day he was unable to hold court, had bladder symptoms, etc. He found it useful in asthma, with considerable dilatation of the right side of the heart, without bronchitis, but a congested state of the lungs. He had employed it in facial neuralgia, headaches, and various neurasthenic conditions, but had nothing definite to say about its effects. One patient with paralysis agitans was benefited by it among many with whom it was a failure.

Dr. KELLOGG had used hyoseyamine in cases of mental excitement, but it had not proven the sedative he had supposed it would. But it controlled muscular excitement. He had failed to get any hypnotic effect from it. He had not been favorably impressed with its after-effect in acute mania.

Dr. H. S. HINKLEY had found it serviceable in allaying maniacal excitement. Dr. Waitzfelde, of the Pennsylvania Hospital for the insane, had used hyoseyamine of bromide, and spoke very highly of it.

Dr. RICHARDS had given five to seven drops of a one per cent. solution in several cases of insomnia without effect.

—A grocer was recently prosecuted at Sheffield, England, says the *Medical Press*, for selling white pepper which the analyst said was not fit for use, because it contained decomposing matter, owing probably to the berry having been steeped in urine sewage. The analyst was re-examined, and stated that one method for rubbing off the black husks in order to make white pepper was steeping them in cow's urine. This was done in India. A nominal fine of five shillings and costs was imposed. Notice of appeal was given.

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EIGHTEEN EIGHTY-EIGHT.

WITH the taking down of the calendar for 1887, and its replacement by its successor for 1888, it becomes once more the pleasant duty of the JOURNAL to extend to its friends, whether readers or contributors, its cordial new-year wishes for their personal and professional prosperity. To all alike, whether they have been long-time subscribers, and have watched the JOURNAL'S growth through many of its fifty-eight years of life, or whether they are now for the first time numbered among our readers, comes our hearty wish that they may long live to enjoy and profit by the good things which we hope and expect to be able to present to them in this and in coming years.

Thousands of babies are to be born in this year of Grace: thousands of men, women, and children are to suffer, as disease, often preventable, too rarely prevented, continues to march in its well-worn path, and the "old, old fashion" of death is to have its multitude of followers. And so the work of the busy physician is ever ready at his hand, as the generations of men, like the leaves of the forest, pursue each other in unceasing round of change.

Οἱ περ φθλῶν γενεή, τοιγάρ, καὶ ἀνθρώπων.

For all in our profession who are bearing the burden and heat of the day, it will be our aim in the coming year, as in the past, to bring what best we can of help to the successful accomplishment of their work, and to this end we invite the coöperation of all who can find the will and the opportunity to cull from out of their own especial experience what may be of advantage to their fellow-laborers.

THE PRESBYTERIAN HOSPITAL AND THE NEW YORK HOSPITAL SATURDAY AND SUNDAY ASSOCIATION.

A GOOD deal of unfavorable comment has been occasioned by the withdrawal of the Presbyterian Hospital from the Hospital Saturday and Sunday As-

sociation, on the ground that at a recent meeting of the Association the constitution was amended by the striking out of that part of it which stated that one of the objects of the Association was the encouragement of specially designated gifts to the institutions represented in it. The institution which has taken the most active part in rendering the movement as far as possible unsectarian has been St. Luke's Hospital, under the auspices of the Protestant Episcopal church, which originated the Hospital Saturday and Sunday collections in this country. It is also a noteworthy fact that at first St. Luke's was the only hospital which received the proceeds of such collections, and that ever since the general Association was formed at the suggestion of the managers of St. Luke's, it has always received by far the largest amount of all the other institutions embraced in the Association, in specially designated contributions. Since this action has been taken by the Presbyterian Hospital a number of letters expressing their deep regret concerning the matter from many prominent Presbyterians, including a number of well-known physicians, have been received by Mr. Miller, President of the Hospital Association. Most of these gentlemen have also signed a formal paper in which a large number of the foremost citizens of all creeds offer their cordial support to the Association in its efforts to make the hospital collection entirely unsectarian, and urge the public in general also to stand by it and contribute generously to its funds.

In order that there may be no misunderstanding about the position of the Association, since many erroneous ideas have been circulated in the community, the President and Treasurer of the Hospital Association have published an authorized statement, a portion of which is as follows: "Owing to a change in the constitution by which the clause was stricken out which committed the Association to the stimulating and fostering of designated gifts, it has been inferred that designated gifts will be no longer received." This is a mistake, and the position of the Association regarding this matter is best stated by quoting a passage from its last appeal, which reads: "Contributions are especially solicited for the general fund, which will be divided among the associated hospitals on the basis of free care for the sick poor. Gifts may be designated, however, for any hospital in the city, and such gifts will be duly forwarded by the Treasurer of the Association to the hospital indicated by the donor. Another wrong impression is that, in the distribution of the collection, 25 per cent. is deducted from designated gifts; the truth being that before any distribution is made by the Distributing Committee, all designated gifts are sent in full to the hospitals for which the donors intended them. Whatever remains is known as the undesignated or general fund, which is then placed at the disposal of the Distributing Committee for division among the associated hospitals according to the free work done by each. When, however, any hospital has received in designated gifts \$1,000, or more, the Distributing Committee has

taken that fact into account, and, under the discretion given it by the Association, subtracted 25 per cent. of such designated gifts from the sum which would otherwise come to such hospital as its proportion of the undesignated fund; and the amounts thus withdrawn have been divided in equal proportions among the ten or twelve institutions receiving least from the collection." It is a matter of universal regret that the unity of the work of the Hospital Association should be broken by the withdrawal of the Presbyterian Hospital, especially for such a cause as that assigned; and, as has been pointed out, its action seems all the more extraordinary when it is found to be a fact that it reports this year \$11,000 more annual income from invested funds than does St. Luke's, and that its income last year was considerably in excess of its reported expenditures.

APHEMIA.

THIS word has been sometimes used as synonymous with aphasia, but its signification is more correctly limited to the loss, more or less complete, of the memory of the co-ordinated movements necessary for the articulation of words. The word aphasia is now used in a more generic sense as the amnesia of signs, and includes as species, aphemia, sometimes called motor aphasia, as also word-blindness, word-deafness, and agraphia, (sensorial aphasia). Among the synonyms of aphemia the following are in use by various authorities: *logoplegia* (Jacquod), *laloplegia* (Lichtenstein), *ataxic aphasia* (Kussmaul) *ammonomia* (Piorry), *verbal paralysis* (Tamburini).

This is the classical form of aphasia, and has an interesting history in connection with the first scientific attempts at cerebral localization. Sixty-two years ago Bouillaud understood and described this motor aphasia, which he recognized as independent of all lesion of the external organs of articulation and the nerve cords which connect them with the cerebrum, and which he attributed to a destroying lesion of the cerebral organ which co-ordinates the divers movements concerned in articulation. "It is," according to Bouillaud, "a loss of memory which does not deprive its victims of the faculty of expressing their ideas and desires by other signs than spoken language, such as gesture and writing."¹

Broca's original description of this affection² will still pass as current coin; and to this physiologist science is most deeply indebted for the direction and precision which have been given to studies in this department of psycho-physiology and pathology. It was Broca who first designated this peculiar speech-paralysis by the name *aphemia*:

"There are cases where the general faculty of language remains unaltered, where the apparatus of hearing is unimpaired, where all the muscles of articula-

¹ Bouillaud, Clinical and Physiological Treatise on the Encephalon, Paris, 1825.

² Broca, Bull. de la Soc. Anatom. de Paris. 1861, 2d Serie, T. vi. p. 359.

tion are intact, and yet, where a cerebral lesion has abolished the power of articulate language. . . . These patients hear and understand what is said to them; their intelligence does not seem to be seriously, if at all, impaired; they emit vocal sounds readily, and yet the only utterance which they can give to their thoughts or desires, or in response to questions, is limited to a very few words, sometimes monosyllables, which may have no relevance to the ideas which they wish to communicate. Some have lost every vestige of articulate language, and cannot utter a syllable. . . . The language which they formerly spoke is always familiar to them, but they cannot execute the series of methodical and co-ordinated movements which correspond to the word or phrase sought for."

This is unquestionably the most common and the most easily recognized form of aphasia, and every physician in general practice is continually seeing instances, generally, it is true, in connection with right-sided hemiplegia, but sometimes as an isolated affection. The following is one of Broca's typical cases, as cited by Kussmaul.³

"A man eighty-four years of age, by name Le Long, had an apoplexy, with unconsciousness, one year and a half before his death. Aphasia remained as a sequence until the end, aphasia, without any other paralysis whatever, with good intelligence, good memory, and good comprehension. He performed properly all voluntary movements of the tongue, lips, etc., and could make himself comprehensible to others by means of gestures and five words, which he uttered somewhat indistinctly although he was able to articulate distinctly the sounds of which they were composed. . . . He had at his disposal only those five words, with which he supplemented his very expressive gestures: *oui, non, trois* instead of *trois, toujours* and *Le Lo* instead of *Le Long*—that is, three perfect and two mutilated words. He affirmed with *oui*, and denied with *non*; for all numbers he employed *trois*, indicating the exact number which he had in his mind by an adroit use of his fingers; he used the word *toujours* when he could not indicate his meaning by any of the other words."

In the description above cited it is said that the intelligence of these patients does not seem to be much, if at all, impaired; they appreciate the meaning of spoken words from the fact that the cohesion between sound and meaning is unimpaired in aphemia, it being the cohesion between sound and articulation which is broken.⁴ It is certain, however, that in all cases of aphasia there is a greater or less degree of enfeeblement of the intelligence which makes itself manifest when the proper tests are applied. The true aphasic finds it difficult to grasp an abstract idea, command the attention, or sustain any intellectual effort.⁵

As for the anatomical situation of the lesion which causes motor aphasia, pathologists are attaining clearer light and greater certainty as the years roll by, since first Gall located the *word-sense* and the *speech-sense* in the frontal lobes (1810-1819); since first Bonilland announced as the result of over five hundred autopsies, that the speech centre was in the anterior lobes of the cerebrum (1825); since Marc Dax in 1836, proclaimed the constant occurrence of disturbances of speech with lesions of the left hemisphere, and Broca, in 1861,

came forward with his epoch making discovery of the concomitance (he regarded it as the invariable concomitance), of motor aphasia, with lesions of the third frontal convolution on the left side, more particularly with lesions of the posterior third of that convolution. Broca's proposition which has been confirmed by thousands of careful observations, and which is now admitted by physiologists as a general law, to which there are few exceptions, is, that the development and exercise of the speech-function is dependent on integrity of the left frontal convolution. We say *few exceptions*, for doubtless in left-handed persons the corresponding gyrus on the right side is the one on which devolves the co-ordination of speech movements, as appears from the findings of numerous autopsies in left-handed aphasics; moreover, we do not think that science, is yet in condition to affirm that in rare cases parts in the vicinity of Broca's convolution (the insula, gray matter bordering the fissure of Sylvius posterior to the third frontal, etc.), may not contain the centres concerned in word-ideation and word-execution. This is, however, certain, that much that has been in times past alleged in opposition to Broca's localization is vitiated and rendered inconclusive by defective observation. This was especially true the first five years after the announcement of Broca's discovery and during the unprecedented storm of opposition with which that announcement was greeted: even Trouseau was caught tripping by Broca himself, who found a spot of softening in a post-mortem specimen, which the former had overlooked,⁶ and Charcot, in a remarkable case which first seemed to bear against Broca's doctrine, afterwards acknowledged that it gave support thereto—though Broca's centre was intact, a portion of the centrum ovale underneath it, and a part of the internal capsule constituting the inferior pediculo-frontal fasciculus were destroyed.⁷ In fact, no observation against the above-mentioned localization is valid, unless in a given case of aphasia, supposed to contradict such localization, it be shown that, along with integrity of the third left frontal, there was also integrity of the nerve fibres proceeding therefrom, and of the underlying structures. For it is clear that a clot of blood, a neoplasm, or other cause, which interrupts the continuity of the fibres proceeding from a nerve centre, will just as surely paralyze the function of that centre as an immediate lesion thereof.

In fine, the essential importance of the posterior extremity of the third left frontal convolution for the exercise of the function of speech remains, in the language of Nothnagel, at the late Congress of Internal Medicine, at Wiesbaden, as also of his co-reporter Naunyn, "unattackable,"⁸ and we may conclude that the association of aphemia with lesion of Broca's centre is so constant, that the clinical observer in presence of a case of motor aphasia is justified in making an almost absolute diagnosis as to the seat of the trouble.

³ Ziemssen's Cyclopaedia. Vol. xiv. p. 734, 764.

⁴ Ferriar, Functions of the Brain. p. 276.

⁵ This is also a marked feature of syphilitic aphasia. See Fourrier, Syphilis der Geveue, Chap. x.

⁶ Bernard. De l'Aphasie et de ses diverses formes. Paris, 1885.

⁷ Bernard, loc. cit. p. 216.

⁸ Sixth Congress of Internal Medicine held at Wiesbaden, April 13 to 16, 1887.

THE TREATMENT OF HERNIA.

SINCE 1803 the management of the Boston Dispensary have furnished trusses to those patients whose power of earning a subsistence depended upon their wearing this instrument. The trustees of this institution, mindful of the benefit which this custom has conferred upon the poor, have determined to establish a special department for the treatment of all forms of hernia.

Of the many charitable organizations in this country for the relief of human suffering, but very few include in their forms of aid the supply of trusses. Certainly no class of people can possess a stronger claim for consideration than those who suffer from hernia, both because of their large number and the peculiar nature of their affliction.

Societies have been established in this country and abroad—notably in London and in New York—for the treatment of this disability. In the former city there are two societies whose sole purpose is the relief of the ruptured poor. The National Truss Society, established one hundred years ago, provided 1,401 trusses for its patients during 1886. The London Truss Society, which has existed for eighty years, furnished, during 1886, 9,372 trusses. The New York Society for the relief of the Ruptured and Crippled, founded twenty-four years ago, supplied trusses, during the year 1886, to 4,061 patients.

The importance of this form of relief cannot be too strongly emphasized. The frequency of hernia, and the disastrous results which follow from its neglect, or from improper treatment are familiar facts. To supply a patient with a truss is by no means sufficient. The truss must be adapted to the peculiarities of each individual case, and this involves anatomical knowledge to diagnose, and skill, together with mechanical ingenuity, to treat.

It is certainly time that the application of trusses should be taken out of the hands of ignorant laymen and pseudo-doctors, and placed, as the application of orthopaedic instruments has been, in more highly educated and discriminating hands.

OFFICIAL REPORT ON THE NEW YORK QUARANTINE STATION.

THE State Board of Health, under the date of December 10th, made a report to the Governor of its investigation into the recent outbreak of cholera at Quarantine, New York Harbor, which has only just been made public. Much of the testimony on which the report is based was furnished by Dr. Balch, the secretary and executive officer of the board, who made a personal examination of the Quarantine Station; but this has been amply corroborated by trustworthy evidence collected by the president of the board, Mr. Newbold.

The result of the investigation is abundantly confirmatory of the developments brought to light by the

committee of the College of Physicians, of Philadelphia, and the nature of the report may be inferred from the following extract: "It is the unanimous opinion of those posted on such matters that it would be difficult to imagine a worse state of affairs than now exists at the Quarantine Station. It is hard to realize in this age of civilization that the harbor of the city of New York should be so inadequately provided with facilities for the prevention and extinction of an epidemic." The serious defects of the Health Officer's administration are clearly set forth, and it is shown that Dr. Smith's work was not regarded as satisfactory by the health authorities of the city; while the changes for the better which were made after the arrival of the *Britannia* were plainly the result of suggestions from physicians and experts by whom the station had been inspected. Such a report, it is to be hoped, will have some effect even on a New York Legislature, and induce it to put an end to a condition of affairs so disgraceful to the State. Governor Hill has more than once made a good appointment for Dr. Smith's position; but the legislature, for political reasons, has always refused to confirm it.

MEDICAL NOTES.

—Cholera existed at the close of the year in Sardinia. There has also been a moderate increase of the disease in Chili, and the Peruvian Government has closed its ports against all shipping from the Chilean republic.

—Dr. Roux, surgeon of the Cantonal Hospital in Lausanne, recently administered two six-gramme doses of extract of male-fern to a girl of twenty-one, and obtained as a result ninety bothrioccephali latii. The delivery of this mass was as might be supposed, rather a serious thing for the girl, and the counting of the parasites was also a serious thing for the doctor, occupying as it did, four and one-half hours.

—Dr. Norman Bridge, one of the attending physicians to Cook County Hospital, recently refused to treat as charity patients persons able to pay, but admitted to the hospital under political favoritism, and for his refusal was severely criticised by the *Chicago Tribune*.

—The *Medical News* reports a revolt of venereal patients in the hospital of Santa Maria, at Naples, where a number of women suffering from specific diseases are under treatment and the authorities had forbidden the friends and paramours of the patients from calling upon them. This was followed by an open revolt for eight hours, during which the furniture of the hospital was demolished, windows and doors broken, and twenty-two of the Sisters of Charity in attendance were injured more or less severely. The patients attacked the police, and wounded several. Order was finally restored, and twenty-eight arrests were made. A reform in hospital management is evidently needed.

BOSTON AND NEW ENGLAND.

— The will of the late William Hilton, which was filed in the probate office for Suffolk county last week, provided for the ultimate distribution of almost half-a-million dollars among various charitable and religious institutions. Among them, those of special interest to medical readers, are the Massachusetts General Hospital, which is to receive \$50,000, to be invested as a separate fund and called the "William Hilton fund," the income to be applied for the support of free beds. The Boston Dispensary, \$50,000, the income to be used for the purposes of the institution. The Children's Hospital, \$10,000. Harvard, Amherst and Williams Colleges, and Phillips Academy, Andover, also get \$50,000 each.

— The new City Hospital of Haverhill was dedicated and formally opened on the 29th of December. The late Hon. E. J. M. Hale gave, in 1882, \$50,000 and a site for the building. To this was added a generous gift by Mr. James H. Carleton in 1886, which greatly hastened its completion. The site for the institution, which was substituted for the one first indicated, is a gift of Mr. Carleton, and located in the picturesque region of Lake Kenosha. The trustees of this institution are the Mayor, ex-officio, Nathan S. Kimball, Samuel M. Currier, Addison B. Jacques, Amos A. Sargent, Samuel K. Towle, and John Crowell. The medical staff consists of Drs. O. D. Cheney, Maurice D. Clark, John F. Croston, W. D. Holden, L. J. Young, and G. C. Clement. The consulting physicians are James C. How, Ira E. Chase, Oliver S. Lovejoy, Otis H. Johnson, and William D. Collins. The superintendent is Mr. James F. Drew, and the matron Mrs. J. F. Drew.

The exercises of the dedication consisted of an opening address by His Honor, Joseph H. Sheldon, Mayor; historical sketch by John Crowell, M.D.; prayer by Rev. A. Boynton; address by O. D. Cheney, M.D.; a letter read from Samuel K. Towle, M.D., a trustee, now surgeon of the National Soldier's Home, Virginia; singing by the Alpine quartet. Dr. John Crowell delivered an able and interesting address, giving the history of the inception and progress of the undertaking.

— Since the middle of August a malignant type of diphtheria has been prevalent in Pittsfield, Mass. The local Board of Health think twenty-three of the cases may fairly be traced to one milk route. The milk farm supplying this route, though apparently in excellent condition, has voluntarily given up its business. The sanitary arrangements of one of the school-houses have been found to be so bad that the building has been closed. The State Board of Health has been appealed to for advice.

NEW YORK.

— A Burial Reform Association has recently been organized under the auspices of the Protestant Episcopal Church, although it is intended that it shall be undenominational in character. Among the reformatory measures which it seeks to carry out are the following:

The exercise of economy and simplicity in everything pertaining to funerals.

The early interment of the body in soil suitable for its prompt resolution into its ultimate elements.

The use of such material for the coffin as will rapidly decay after burial.

The substitution of burial plots for family vaults. The encouragement, on sanitary grounds, of the removal, in crowded districts, of the body to a mortuary, instead of retaining it in rooms occupied by the living.

— On the 19th of December, a boy died at the New York Dispensary from heart-failure resulting from shock due to loss of blood after having a tooth extracted. Uncontrollable hæmorrhage followed the drawing of the tooth, and death followed in twenty minutes. The physicians at the Dispensary expressed the opinion that the lad was the subject of hæmophilia.

— The Board of Estimate and Apportionment have made an appropriation for the expenditures of the Commissioners of Charities and Correction for the coming year considerably in excess of the amount allowed for 1887, in order to carry out some of the reforms in the management of the institutions for the insane under the care of the department which the investigation of the Board of State Charities, last summer, showed to be needed.

— The City Board of Health having received a communication or letter from the Captain-General of Cuba to the effect that small-pox was raging in Cuba, and that the supply of vaccine virus had become exhausted, referred the matter to Dr. Edson, Chief of the Bureau of Contagious Diseases, who, on December 24th, shipped to Havana three fine, healthy, vaccinated calves for the propagation of virus.

— On the occasion of the formal opening, December 29th, of the Sloane Maternity Hospital and the Vanderbilt Clinic, in connection with the College of Physicians and Surgeons, Dr. T. Gaillard Thomas made the principal address.

— Among the numerous charitable bequests in the will of the late Mrs. John Jacob Astor, are included \$25,000 each to the Women's Hospital and St. Luke's Hospital.

CHICAGO.

CHICAGO AS A MEDICAL CENTRE.

— *Chicago is something of a medical centre.* It is doubtful if the profession of the East fully understand this fact. There are no less than eleven schools of medicine in town, of one sort or another, that are of the regular profession, or are recognized by the State Board of Health. Four of these are regular medical colleges, diplomas from which now qualify for practice before the State Board, although the Board has declared that after 1890 neither the diplomas of these nor of any other colleges will be accepted that do not require four years of study and three full courses of lectures. These colleges are: *Rush*, the oldest and largest, nearly fifty years of age

(the oldest educational institution in the State, its friends enjoy saying); the *Chicago*, now approaching thirty years of age; the *College of Physicians and Surgeons*, the youngest of them all; and the *Woman's*, which is about eighteen years old. The last named is a woman's college, as all the others admit only men. *Chicago College* tried the experiment, before the *Woman's* was founded, of admitting female students, but the experiment did not work well, and it was promptly abandoned at the end of a single term.

The *Chicago College* has been a department of the Northwestern University for many years. *Rush College* has recently become the medical department of the Lake Forest University, near Chicago, an institution under the control of the Presbyterian order. These regular schools may be said to be in a prosperous condition, if the fact of their graduating a total of nearly or quite three hundred persons annually may be taken as evidence of prosperity.

There are two homœopathic colleges and one of the so-called eclectic school. Of these three, the original and first homœopathic school is the most prosperous; it probably graduates as many pupils as the other two combined. This school boasts that it teaches the "Simon pure" article of homœopathy, while its rival teaches a mongrel between this and regular medicine.

There are two regularly chartered schools for practitioners, covering the entire practical field of medicine. These are the *Chicago Polyclinic* and the *Post-Graduate School of Medicine*; the former continues its instruction throughout the year, the latter only for three months of the summer. The number of pupils in these schools is always small, but the organizations are over two years old, and their managers declare they are here to stay. In each the habit of Eastern schools of this kind, of dividing the year into periods or courses of six weeks each, is pursued.

Then, in addition to this formidable array of opportunities, there are two chartered schools for instruction in the specialties: one the *Chicago School of Dermatology*, the other the *Chicago Ophthalmic College*. The former has a faculty of five professors, the latter one of eleven professors. The former offers to cover, in addition to dermatology, the fields of genito-urinary, renal, and rectal diseases; the latter teaches only ophthalmology, otology, and laryngology, and both admit only practitioners.

In addition to this long list of strictly medical schools, there are here no less than four schools of dentistry, all of which have sprung up within five years. The first was the *Chicago College of Dental Surgery*, which started out to teach only medical graduates to be dentists, the laudable purpose being to make dentistry a department and specialty of medicine. But the number of students of the sort admitted was too small, and the plan was, after a couple of years, changed to that of an ordinary dental college. The other schools have been organized since. One of these newer acquisitions is a department of the Northwestern University, another of the Lake Forest.

Each school gives instruction in anatomy, physiology, materia medica, and chemistry—it is alleged, as thoroughly as any medical college—in addition to the strictly dental studies. The branches referred to are taught by medical men, and each one is a professor.

Chicago is really a paradise of professors. Among all the schools above referred to, there are not less than one hundred professors who are medical practitioners—to say nothing of the dentists—and a few hold chairs in two or more institutions. The lowliness of fees and other circumstances compel most of these doctors to perform their professional duties *gratis*—probably not a third of them receive a compensation from their schools that can be called more than nominal. In addition to the professors, are more than half as many lecturers, demonstrators, and other instructors who are practitioners of medicine, a large majority of whom receive no compensation. Perhaps in no other city of its size is more unpaid instruction in medicine given by so large a number of men as in Chicago.

To add to the character of the city as a centre of medical study, seven of the medical schools are located within a quarter of a mile of the large public hospital, the Cook County, and two other hospitals (the Hospital for Women and Children and the Presbyterian) are not farther away. Another of the schools, the *Chicago Medical*, is within easy reach of the Mercy, the Michael-Reese, and the St. Luke's Hospitals.

Now, we are aware that the criticism of the East would be, and is, that all this medical teaching is hurried, crude, and lacking in thoroughness, and that out of it all there is not a sufficient addition to the stock of knowledge—not sufficient investigation and research. To the first charge we plead not guilty. As teaching schools, there is no doubt most of these institutions are successful in a high degree, and their graduates, as practical men and successful practitioners, rank well. To the second charge, the reply is that it is true, but is, has been for several years past, and is going to be in the future, less and less true as time passes. It is a fact that there is not here a chair in any of the schools, or a laboratory of any sort that is endowed; there is no endowment of research. But the hopeful and thoughtful members of our profession do not believe it will always or long be so; our millionaires, and they are numerous, will not forever be wrapped up in pork, grain, dry goods, stocks, and railroads; indeed, the evidence of this truth is already apparent in some handsome endowments of institutions not medical. Medical research seems to be about the last thing to be endowed.

An encouraging sign is the fact that more careful study and investigation in a private way are being done each year. Another matter for congratulation is the starting of the great Newberry Library, under the directing hand of Mr. Poole. It is expected that it will be especially a library for students, and there must be a large corner and outlay for medicine.

Miscellany.

PILOCARPINE IN ACUTE AFFECTIONS OF THE RESPIRATORY ORGANS.

IN certain acute affections of the respiratory organs, Dr. Wyss, as quoted by the *Medical Record*, has given small doses of pilocarpine, as one-sixth of a grain, with decided benefit. A case of acute coryza is reported, with intense congestion and swelling of the conjunctiva and nares, and pharyngeal dryness. Recovery in three days under the use of one-sixth of a grain of pilocarpine at bed-time. An acute attack of laryngitis in another patient with loss of voice was similarly benefited. A man, aged forty-four, suffering from acute pharyngo-laryngitis with frequent attacks of suffocation from oedematous swelling. Experienced marked relief with restoration of voice after the first dose of pilocarpine taken at bed-time, and had no more attacks of suffocation. A case of acute laryngo-bronchitis with violent dyspnea and labored respiration was speedily relieved by a quarter-of-a-grain dose at bed-time, and another of bronchitic asthma and hypertrophic rhinitis was similarly benefited by one nightly dose of a sixth-of-a-grain. This patient, who had been for many years a great sufferer from asthmatic attacks, stated that no other remedy had ever given her such rapid and permanent relief.

Dr. Wyss prescribes pilocarpine as follows :

R Hydrochlorate of pilocarpine . . . half a grain.
Distilled water . . . three ounces.
To be divided into two or three equal parts by the graduation of the phial. Of this, one-half or one-third is to be taken directly after having retired to bed.

THE DANGERS OF DUSTS.

A PAPER was read by Dr. Henri Napias, before the Congress of Industrial Hygiene, held at Rouen, on the dusts developed in industries and the method of guarding against injury from them, of which we find the following abstract in *Building* :

Dusts in the air call for especial consideration, from the fact that, besides vitiating the atmosphere in the way that gaseous impurities also do, they exert a mechanical action when brought in contact with the respiratory and digestive systems.

Even when they are wholly toxic or essentially irritant effects, they are foreign bodies and obstructive, and are always in danger of exerting a traumatic action or causing abrasions. They are, therefore, all dangerous, while the dangers arising from them may be various in character. Mineral dusts, whether of stones or of metals, are the most dangerous, because, besides being hard and sharp and liable to cut the tissues, very many of them are also poisonous or caustic.

Dusts of organic origin are less dangerous, but they vitiate the air, communicate unpleasant qualities to it if they are of an animal nature, and are frequently vehicles for the conveyance of infectious germs. Various inconvenient affections of the lungs are caused by breathing these dusts, among which may be counted phthisis, not as produced directly by them, but as often ultimately induced by the abrasions or deterioration of the tissues which they immediately occasion.

The readiest and most available means of removing dusts is by ventilation, and when this can be so di-

rected as to take them away as soon as they are formed, it is almost sovereign. It will not do, however, to rely upon general ventilation, for that will at most remove the dusts but imperfectly, while its usual operation will be more likely to distribute them more widely among the operatives.

The remedy should be applied to light dusts by means of chimneys or draught-flues; and to the heavier ones by means of blasts to drive them away. In cases where the dust itself is the object of the manufacture, or is to be applied in the manufacture, the remedy is to conduct the processes in closed apparatus. When either method is practicable, the dust may be kept down or removed by water, or the articles may be worked in a moist condition.

Some workmen employ masks or respirators as means of individual protection, and they may in some processes be the only efficient means available. They are liable to the objection that they are always cumbersome and inconvenient; and frequently the workmen will become careless about them, or refuse to be bothered with them, and will leave them off. They should not be depended upon when any practical means of keeping down or removing the dust can be employed.

TREATMENT OF INTESTINAL INVAGINATION IN CHILDREN.

HERZ has written on the above subject (in the *Arch. di. Pitol. Inf.* for May, 1887), and a *résumé* of his paper is given in the *Archives of Pediatrics*, November, 1887. It is believed by the author that in many cases of intestinal invagination spontaneous reduction will take place if the patient is relaxed by anæsthetization, or at most with the use of moderate taxis. Should the case be rebellious to such means, a large volume of air should be injected into the intestine, to be followed, if necessary, by a sufficient quantity of water. The more recent the invagination and the lower in the abdominal cavity its situation, the better will be the chances of success. The child should be placed upon his back with the knees bent, and a gum-elastic catheter should be introduced as far as possible. Through this the air should be slowly forced for about two minutes; during the intervals of injection massage being mildly practised over the supposed seat of invagination. If water is to be injected, a warm bath should first be given, lasting half an hour. The child should then be anæsthetized, the head and shoulders being on a higher plane than the abdominal cavity, and three or four litres of water slowly and gently injected, the greatest care being taken to avoid rupturing the intestine. Instead of three or four litres of water at the ordinary temperature, a single litre of very cold water may be used. Should these means prove unavailing, the only resource remaining is laparotomy.

OBITUARY. JAMES R. NICHOLS, M.A., M.D.

Dr. James R. Nichols died at Haverhill, Mass., January 2d. He was born in West Amesbury, now Merrimac, Mass., July 19, 1819. He had many advantages for securing an education, attending the district school but one term during the winter. But by dint of especial effort in his leisure hours, he gained a practical knowledge as apothecary's clerk, which led to his subsequent high reputation as a chemist.

At twenty-two he commenced to study the theory and prac-

tice of medicine under Dr. Randall Flint, of Haverhill, and later he attended the medical lectures at Dartmouth College. He received his M.D. diploma at that institution in 1867, joining the Massachusetts Medical Society the same year, and subsequently received the honorary degree of M.A. He engaged in the drug business on his own account in 1843, but continued his researches in chemistry previously begun, and which at that time was just beginning its development. He soon became an experimenter and investigator in all the new discoveries of the times, which gave him a wide reputation through his writings and lectures.

After an extended European tour in 1867, during which he acquainted himself with many workers in the field of industrial chemistry, he established himself in Boston as a manufacturing chemist under the firm name of James R. Nichols & Co. This firm early carried on an extensive business in all parts of the country, and was the first to manufacture the finer class of chemicals, such as had previously been imported from Europe.

Dr. Nichols established the *Journal of Chemistry* in Boston, in 1865, and had ever since continued to edit it. This journal holds a high place in its special field, having more recently

been called the *Popular Science News*. He revisited Europe in 1872, and on his return, relinquished business in Boston and returned to Haverhill, where he has since resided.

In 1878, Governor Rice appointed him a member of the State Board of Agriculture. He was always identified with agricultural affairs, and published many important papers treating on the subject.

Dr. Nichols was the author of three well-known works, the first two of which were published prior to 1872—"Fireside Science," and "Chemistry of the Farm." The last, entitled "Whence, What, Where," was published in 1883, and has thus far reached its eleventh edition.

Dr. Nichols was twice married. His first wife was a daughter of E. A. Porter, of Haverhill, whom he married in 1844. He formed a second union with a daughter of the late James Gale, in 1851, by whom he had two children, of whom one, a son, succeeds him as editor of the *Popular Science News*, and the other, a daughter, is the wife of Mr. J. G. Cupples, one of the publishers of this JOURNAL. Dr. Nichols founded a public library in his native town of Merrimac, in 1878. His own private library is one of the largest and most valuable in the State.

REPORTED MORTALITY FOR THE WEEK ENDING DECEMBER 24, 1887.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Typhoid Fever.	Diph. & Croup.	Scarlet Fever.
New York	1,481,920	700	267	20.86	17.36	.56	11.34	2.94
Philadelphia	993,801	339	93	12.18	8.41	2.32	6.67	.87
Brooklyn	745,108	297	139	25.81	14.62	.34	14.74	5.10
Chicago	725,000	—	—	—	—	—	—	—
St. Louis	420,000	—	—	—	—	—	—	—
Baltimore	417,000	146	61	15.87	12.09	1.86	5.58	—
Boston	400,000	172	67	20.88	17.40	6.38	—	11.02
New Orleans	212,750	107	33	15.81	8.37	2.79	7.44	—
Buffalo	225,000	—	—	—	—	—	—	—
District of Columbia	210,000	71	23	9.87	9.87	2.82	—	1.41
Pittsburgh	210,000	96	36	24.96	15.60	8.32	11.44	1.04
Montreal	186,257	—	—	—	—	—	—	—
Milwaukee	170,000	36	—	30.58	13.90	8.34	8.34	—
Providence	121,000	—	—	—	—	—	—	—
Richmond	100,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,000	25	11	8.00	16.00	—	—	—
Charleston	60,145	31	4	16.15	6.46	3.23	3.23	—
Portland	40,000	14	3	14.28	14.28	7.14	7.14	—
Worcester	68,583	26	10	23.10	23.10	7.70	11.55	—
Lowell	64,051	—	—	—	—	—	—	—
Cambridge	59,630	21	7	23.60	9.44	4.72	9.44	4.72
Fall River	56,863	21	7	18.88	—	—	9.44	—
Lynn	45,861	14	3	28.56	14.28	—	14.28	—
Lawrence	38,825	19	5	10.62	5.26	5.26	—	5.26
Springfield	37,577	—	—	—	—	—	—	—
New Bedford	33,393	11	7	45.45	9.09	—	45.45	—
Somerville	29,692	15	5	26.66	13.33	—	—	13.33
Salem	28,084	16	1	37.50	75.00	—	37.50	—
Holyoke	27,894	10	6	—	10.00	—	—	—
Chelsea	25,709	9	1	33.33	33.33	—	11.11	22.22
Taunton	23,674	9	3	22.22	—	11.11	11.11	—
Haverhill	21,795	7	1	28.56	—	14.28	14.28	—
Gloucester	21,713	5	0	—	—	—	—	—
Brookton	19,759	2	0	20.00	—	20.00	—	—
Newton	19,759	2	1	—	—	—	—	—
Malden	16,407	5	2	20.00	—	—	—	20.00
Fitchburg	15,375	8	3	12.50	12.50	—	—	—
Waltham	14,609	6	1	33.33	—	—	16.66	—
Newburyport	13,716	5	2	—	20.00	—	—	—
Northampton	12,896	3	—	—	—	—	—	—

Deaths reported 2,251: under five years of age 802; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 436; consumption 302; acute lung diseases 306; diphtheria and croup, 208; scarlet fever 67; typhoid fever 40; diarrheal diseases 35; malarial fever 24; measles 19; whooping-cough 12; cerebro-spinal meningitis 11; erysipelas 11; puerperal fever seven, small-pox two. From diarrheal diseases New York 15, Philadelphia six, Brooklyn, Baltimore, Nashville and Fall River two each, Boston, District of Columbia, Pittsburgh, Charleston and Somerville one each. From malarial fever, New York nine, Brooklyn six, New Orleans five, Baltimore four. From measles, Baltimore eight, New York six, District of Columbia two, Brooklyn and Boston one each. From whooping-cough, New York three and Boston three each, Philadelphia, Brooklyn, Pittsburgh, Milwaukee, Charleston and Waltham one each. From cerebro-spinal meningitis, New York five, Milwaukee two, New Orleans, District of Columbia, Lynn and Somerville one each.

From erysipelas Brooklyn five, New York three, Philadelphia, Baltimore and Worcester one each. From puerperal fever, Pittsburgh two, New York, Boston, Milwaukee, Charleston and Cambridge one each. From small-pox New York and Brooklyn one each.

In the 28 greater towns of England and Wales with an estimated population of 9,244,069, for the week ending December 10th, the death-rate was 21.1. Deaths reported 3,746: infants under one year of age 831; acute diseases of the respiratory organs (London) 408; whooping-cough 116; scarlet fever 91; fever 77; measles 73; diphtheria 44; diarrheal 27, small-pox (Sheffield 17, Bristol two, Hull one) 20.

The death-rates ranged from 15.6 in Plymouth to 32.2 in Newcastle-on-Tyne; Birkenhead 19.8; Birmingham 23.1; Hull 17.5; London 22.1; Leicester 20.0; Liverpool 19.4; London 19.5; Manchester 29.2; Nottingham 20.9; Sheffield 23.8; Sunderland 17.7.

In Edinburgh 21.1; Glasgow 24.0; Dublin 35.6.

The meteorological record for the week ending December 24, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole, of the United States Signal Corps:

Week ending	Barometer.		Thermometer.		Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	
Saturday, Dec. 24, 1887.																		
Sunday, .. 18	29.15	33.0	42.0	30.0	100.0	100.0	90.0	97.0	N.	W.	W.	36	16	23	R.	N.	O.	14 .31
Monday, .. 19	29.78	34.0	38.0	28.0	80.0	60.0	75.0	72.0	N.W.	N.W.	N.W.	26	24	18	O.	O.	C.	
Tuesday, .. 20	30.05	39.0	48.0	28.0	68.0	58.0	92.0	66.0	W.	W.	W.	11	6	5	C.	F.	T.	
Wednesday, .. 21	29.77	35.0	40.0	34.0	100.0	96.0	80.0	92.0	N.E.	W.	W.	12	6	12	R.	O.	C.	12 .17
Thursday, .. 22	29.76	27.0	36.0	21.0	79.0	61.0	73.0	71.0	W.	W.	W.	8	24	18	F.	F.	C.	4 .7
Friday, .. 23	29.94	21.0	27.0	15.0	69.0	59.0	55.0	64.0	N.W.	N.W.	N.W.	12	14	9	C.	C.	O.	
Saturday, .. 24	29.89	25.0	33.0	16.0	69.0	80.0	83.0	74.0	N.W.	E.	N.	8	8	4	F.	C.	O.	
Mean, the Week.	29.763	30.6						76.6										263 .48

¹ O, cloudy; C, clear; F, fair; G, fog; H, hazy; S, smoky; R, rain; T, threatening; N, Snow; *T, trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 24, 1887, TO DECEMBER 30, 1887.

BAXTER, J. H., colonel and chief medical purveyor. Ordered to inspect the medical purveying depot at St. Louis, Mo. S. O. 296, A. G. O., December 23, 1887.

BAXISTER, WM. B., first lieutenant and assistant surgeon. Ordered to proceed to Fort Lowell, Arizona, and report to commanding officer for duty upon the arrival of Surgeon P. J. A. Cleary, at Fort Wingate, New Mexico. S. O. 153, Department of Arizona, December 20, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING DECEMBER 31, 1887.

BIDDLE, C., passed assistant surgeon. Detached from the Marine Rendezvous, Philadelphia, and placed on waiting orders.

CLERDRE, C. J., medical director. Detached as member of medical examining board December 31st, and ordered to Norfolk Naval Hospital, January 5, 1888.

BRADLEY, M., medical inspector. Detached from Naval Hospital, Norfolk, January 5, 1888, and placed on waiting orders.

CLARK, J. H., medical inspector. Detached from special duty at Portsmouth, N. H., and ordered as member of examining board at Washington.

SOCIETY NOTICES.

MASSACHUSETTS DENTAL SOCIETY.—At the meeting of the Massachusetts Dental Society, December 9, 1887, the following officers were elected: President, H. C. Meriam, Salem, Mass.; first vice-president, G. A. Gerry, Lowell, Mass.; second vice-president, R. R. Andrews, Cambridge, Mass.; secretary, G. F. Eames, 62 Trinity Terrace, Boston; treasurer, E. Page, Boston; executive committee, E. B. Hitchcock, A. H. Gilson, W. E. Page, J. K. Knight, E. C. Leach.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.—THE SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE will meet at 19 Boylston Place, on Wednesday, January 11th, at 7.45 o'clock. Papers: Dr. W. N. Bullard, "A Case of Cerebral Localization with Double Trophing." Drs. E. H. Bradford, J. J. Putnam, and Morton Prince will open the discussion. Dr. George B. Shattuck, A case of "Hereditary Locomotor Ataxia (Friedreich's Disease)." Dr. Henry Jackson, "Fifty Cases of Scarlet Fever."

A. L. MASON, M.D., Chairman.

ALBERT N. BLODGETT, M.D., Secretary.

GYNÆCOLOGICAL SOCIETY OF BOSTON. The annual meeting of the Society will be held at the Medical Library Rooms, No. 19 Boylston Place, on Thursday, January 12th, at 4 o'clock P.M. Program: President's Annual Address, by Dr. H. C. White. Annual election of officers. A collation will be served after the exercises.

H. J. HARRIMAN, M.D., Secretary.

APPOINTMENTS.

The following appointments have been made at the Carney Hospital, January 1, 1888: Dr. Drumme, Senior House Officer;

Dr. Walker Foley, Junior House Officer; Mr. J. P. Gaffney, Assistant Intern; and Messrs. W. S. Beaumont and Gihlin, for out-patient assistants.

PRIZES FOR ESSAYS ON MEDICO-LEGAL SUBJECTS.

The Medico-Legal Society of New York announces the following prizes for original essays on any subject within the domain of medical jurisprudence or Forensic Medicine:

1. For the best essay — one hundred dollars, to be known as the Eliot F. Shepard Prize.

2. For the second best essay — seventy-five dollars.

3. For the third best essay — fifty dollars.

The prizes to be awarded by a commission, to be named by the President of the Society, which will be hereafter announced. Competition will be limited to active, honorary and corresponding members of the Society at the time the award is made.

It is intended to make these prizes open to all students of Forensic Medicine throughout the world, as all competitors may apply for membership in the Society, which now has active members in most of the American States, in Canada and in many foreign countries.

57 Broadway, N. Y.

CLARK BELL, Secretary.

DEATHS.

Died in Wilmington, N. C., December 31, 1887, Edward Emerson Swallow, M.D., M.M.S.S., late of Waltham, Mass., aged thirty-four years.

In Haverhill, Mass., January 2, 1888, James Robinson Nichols, M.D., M.M.S.S., aged sixty-eight years.

BOOKS AND PAMPHLETS RECEIVED.

Wounds, Their Aseptic and Antiseptic Management. By David Prince, M.D., Jacksonville, Ill. 1887.

The Radical Treatment of Trachoma. By A. E. Prince, M.D., Oculist to Wabash Hospital and State Institution for Deaf and Dumb and Blind. Reprint.

Proceedings of the Connecticut Medical Society, 1887. Ninety-sixth Annual Convention, held at Hartford, May 25th and 26th. New Series. Volume III. No. 4. S. B. St. John, M.D., Secretary.

Forms for Systematically Recording Observations and Results of Treatment in Affections of the Throat and Nose, Including Adjacent Associated Areas. By Scanes Spicer, M.D., B. Sc. London: H. K. Lewis. 1887.

Report of the New York Post-Graduate Hospital, Including the Babies' Ward. Founded February 1, 1884. For the Year Ending May 1, 1887.

Medical Lectures and Essays. By George Johnson, M.D., F.R.S., etc. London: J. & A. Churchill. 1887.

Report of the Surgeon-General of the Army to the Secretary of War for the fiscal year ending June 30, 1887. Washington. 1887.

The Treatment of Uterine Fibroids by Electrolysis. By W. E. Stevenson, M.D. Cantab., M.R.C.P., in charge of the Electrical Department at St. Bartholomew's Hospital; Physician to the Grosvenor Hospital for Women and Children. London: J. & A. Churchill. 1887.

Lecture.

THE HISTORY OF MEDICINE.

INTRODUCTORY LECTURE.¹

BY J. S. BILLINGS, M.D., LL.D. (HARV.) SURGEON, U. S. A.

UPON the front of the new building on Boylston Street which is occupied by the Medical School of Harvard University, there are stamped ten names, arranged in two rows. The names in the upper row in the order given are: Paré, Galeu, Hippocrates, Celsus, Versalius; and those in the second row are, Haller, Harvey, Sydenham, Hunter, Bichat. You know that these are the names of men who have been specially prominent in the history of medicine—names which have a special significance to educated physicians.

At the end of this course of lectures I hope that those who have listened to them will have a clearer idea than they now have as to why these ten names were selected for that position, and how they are connected with the origin and progress of medicine considered with reference to both its scientific and its practical aspect. But while these lectures will be devoted mainly to indicating the influence which certain individuals have exercised on the progress of the healing art, it must be borne in mind that to fully understand this influence, it is not enough to consider only what physicians have said or done. As Carlyle says, action is solid while history can be only linear. To attempt to isolate the history of medicine, and to comprehend its curious ebbs and flows of doctrine, from medical writings only, is like cutting a narrow strip from the centre of a piece of tapestry and speculating upon the origin and purpose of the cut threads and fragments of patterns that may be found in it.

We cannot appreciate Hippocrates without some knowledge of the Greek schools of philosophy; we cannot understand Galen, without knowing the teachings of Plato and Aristotle; it is not possible to see why such strong opposition was made to Vesalius and Van Helmont if we know nothing of the history of Catholicism and of the Protestant reformation; and the existing differences in regard to medical legislation and education in civilized countries cannot be fully appreciated without information as to the mode of development of the polity of the several States.

Medical history, in fact includes much that belongs also to the history of philosophy, jurisprudence and science, the chief difference being that different names are used as milestones and guide-posts.

The origin of medicine, like that of most other arts and sciences, is to be explained from tradition and inference rather than from history. There are two classes of legends and opinions relating to this subject, corresponding to two different classes of minds or of mental action, which are essentially opposed to each other, and which correspond to the division of thinkers and writers into two great camps as expressed by the saying: "All men are born either Platonists or Aristotelians."

The first opinion, which we find as a tradition everywhere, is that medicine is of divine origin; that it was taught by the gods to men; and as this communication would of course be made to those most intimate with and specially engaged in the service of

the superior powers, it is from this point of view natural that we should, in early times, find the healing art in the hands of the priests, and connected with religious ceremonies, while, from another point of view, these last facts would be considered as the true explanation of the legend.

The second opinion includes such explanations as that given by Hippocrates, that it arose from experience of the effects of certain foods or injuries, developed at a later period, as we shall see, into the doctrine of the Empirics; and such accounts as those given by Herodotus, Strabo and Pliny, of the custom which prevailed in the earlier days of Egypt, Babylon and Rome, of taking the sick man into the street or to some public place, where all persons passing by, inquired as to the nature of his disease and gave him the benefit of their personal experience if they had any. It is added by the historians that all who saw one thus exposed were bound to approach and give their advice; and, if human nature then resembled that of the present day, it is probable that the duty was not neglected, since it was of the nature of a pleasure. According to this the custom which now prevails that every one feels it to be eminently courteous and proper to advise a person complaining of pain, a cold, etc., as to what he should do to obtain relief, is a relic of survival from Rome or Assyria. This tradition is, somewhat more probable than the first; but we can hardly suppose that physicians of some sort, by whatever name known, should be wanting in such cities as Rome and Babylon, when we find them among barbarians and wandering tribes. We usually find among these last, and among the nations of antiquity, traces of two systems of medicine and of two classes of physicians, one lay, the other sacred, corresponding to the two legends just referred to.

Let us first inquire as to the condition of medicine among savage and barbarous nations of recent times in order to obtain some positive data from which we may reason by analogy.

Here we find that the priests are usually physicians or medicine men, and are the superior practitioners who are resorted to in obscure and difficult cases, but that there are, as a rule, other persons, often women, who treat diseases with simple and natural remedies. Disease, if severe, is thought to be due to the influence of the evil eye, or to the entrance of an evil spirit into the body of the sufferer, or, if he has not contributed properly to the support of the priest, or has been guilty of disregarding his opinions in any way, his complaint is considered as due to the vengeance of an offended good deity.

The essential remedies are incantations, steam-baths, propitiatory offerings, music, noises of various kinds, and removal of the evil spirit by suction.

Abundant testimony to the truth of these statements may be obtained from authentic accounts of the North American Indians. It should be remembered, however, in examining these accounts that these tribes use the word medicine, or what is usually translated thus, in several very distinct senses. In general, it refers to that which is extraordinary or supernatural, and the medicine man is one who possesses a knowledge and control of such matters. In particular, it may mean something like spirit, for every animate, and some inanimate objects are supposed to have their own medicine or peculiar principle. When the buffalo is seen to plunge his horns into the earth, especially

¹ To a course of eight lectures before the Lowell Institute of Boston. Delivered December 27, 1887.

just before a combat, he is supposed to be making or acquiring "medicine," that is strength, like Antæus. In like manner any article or substance which produces unusual effects upon any person, sick or well, is medicine. The term is also frequently employed in a sense which can be best illustrated by an example: An Indian may undertake to do, or to refrain from doing, some particular thing for a certain specified time, as, for instance, that he will not have a firearm in his lodge, nor will he enter a lodge in which one is kept; that he will turn only to the right and never to the left; that he will not allow any one to pass between himself and a fire, or any similar observance, and this he does to make medicine. Very great importance and value is attached to the successful completion of such obligations or vows, and the medicine so made is supposed to insure good luck and prosperity. In addition to these meanings, every Indian has his own peculiar medicine charm or talisman, and sometimes there is also a tribe medicine, usually some animal or reptile, indicated by a badge or token. The medicine man is much more than a physician; he is priest, rain-maker, and minister plenipotentiary of the supernatural powers, both good and evil. The remedies used by the medicine men of the Carolina and Florida tribes as described by Lawson² and Coreal³ were conjurations, shaking of rattles and prolonged suction either by the lips or by a sort of cupping horn. Scarifications with a sharp flint were used with the cupping and the blood obtained was carefully and secretly buried, as it was supposed to contain the evil spirit—a very widespread and ancient idea.

Dr. Barnes, late Surgeon General, U. S. A., told me that the practice of the Seminole medicine men, as he observed it, consisted essentially in rubbings and strokings corresponding to what is called animal magnetism. They also had their annual purifying of the blood by purgatives and fasting, which occurred just prior to the green-corn feast.

In Schoolcraft's work on the Indian tribes are several interesting papers on aboriginal medicine, one of which is a report by Major Alvord (subsequently Paymaster-General United States Army), on the Oregon Indians, from which I abstract as follows: "In some of these tribes any child may be trained for the position of medicine man; but among the Nez Percés the position is inherited from father to son."

All the tribes have great faith in their medicine men, and believe that they have the power of killing by charms and enchantments, and when, as sometimes happens, a man becomes possessed with the idea that the medicine man is hostile to him, and is "making medicine" against him, he will pine away, refuse to eat, and die of hypochondria and melancholy.

The consequence of this implicit faith is that when a death occurs it is often attributed to the doctor, and the relatives of the deceased avenge his fate by killing the supposed murderer. "Three doctors (says Major Alvord), have been killed for this reason within the last four months in different tribes within forty miles of this post." I cannot learn, however, that this custom has operated in deterring students from entering the profession. The tribes have women doctors also, but these sorceresses are not so much feared, and are not held so strictly responsible for results as are the medicine men.

The faith of the Oregon tribes led, in 1847, to the massacre of Dr. Whitman and others in the Presbyterian mission in the Cayuse Country, because in an epidemic of measles many died under Dr. Whitman's treatment, since they would, contrary to his directions, plunge into the icy-cold mountain streams in the height of the disease; and the war thus commenced lasted for two years.

Father Heekewelder, in his careful and reliable account of the Six Nations,⁴ states that among them there are two sorts of doctors, one which used herbs, roots, and the sweatoven, and had no superstitious notions except that when an emetic is to be administered the water in which the potion is to be mixed must be drawn up a stream, and, if it is for a cathartic, down the stream.⁵ The second class are the usual medicine men, or priests, who attribute disease to witchcraft, and frighten it away by grotesque dresses, incantations and horrible noises.

Hunter,⁶ in his account of the medicine of the Osages, also refers to two classes of medicine men, and gives a list of the medicines used by the lay physicians, which is of interest.

Bancroft, in his work on the native races of the Pacific States, has collected accounts of their medical customs from which may be quoted the following (Vol. I, p. 418): "The California Indians for all complaints put forth the charm of woven paces and of waving hands. The medicine men fare better than their northern brethren, as the death of the patient is attributed to the anger of the god, and consequently the physician is not held responsible. The temascal, or sweat-house, is the same here as elsewhere."

Very wonderful statements as to the powers of the Indian medicine man have been reported, as, for instance, in a paper in the *Atlantic Monthly* for July, 1866, by J. M. Browne, who resided for some time among the Blackfoot tribe. Among other things he tells of a contest between two rival medicine men which occurred among the Assiniboines in 1855.

"The rival medicine men, each furnished with his medicine bag, his amulets, and other professional paraphernalia, arrayed in full dress and covered with war-paint, met in the presence of a great concourse. Both had prepared for the encounter by long fasting and conjurations. After the pipe, which precedes all important councils, the medicine men sat down opposite to each other, a few feet apart. The trial of power seems to have been conducted on principles of animal magnetism, and lasted a long while without decided advantage on either side, until the Black Snake, concentrating all his power, or 'gathering his medicine,' in a loud voice commanded his opponent to die. The unfortunate conjurer succumbed, and in a few minutes 'his spirit,' as my informant said, 'went beyond the Sand Buttes.'"

Such stories as this require much better verification than Mr. Browne seems to have obtained, but the occurrence alleged is not impossible.

The so-called medicine bag of the North American Indians is essentially the same in character and purpose as the charms, amulets and talismans of Oriental

¹ Lawson's History of Carolina, London, 1714, p. 214.

² Voyages de François Coreal, Aust 1722, T. I, p. 35.

⁴ Heekewelder on North American Indians. Trans. Hist. and Lib. Committee of Am. Philos. Soc., Philadelphia, 1839, 1, p. 218.

⁵ This is essentially the old doctrine of signatures corresponding to the teachings of Van Helmont that if anyone in gathering the leaves of asarabacca shall pluck them upward they will purge by vomit; but if wrested downwards they will purge by stool.

⁶ Hunter (John D.) memories of a captivity among the Indians. S. Lond. 1823, p. 401.

nations, and its proper title is "the mystery sac or bag."

The medicine of other uncivilized races is essentially the same as that of which I have been speaking. In Australia the "bilbos," or doctors, endeavor to produce a proper respect and impression in the minds of their patients by the use of a number of slender rods, from six to nine feet long, which are stuck in the ground in the form of a crescent, and are addressed with speeches and gestures. Blood-letting is used, the flowing blood not being wasted, but rubbed on the body of the doctor, in the belief that both parties are thus strengthened. Women, however, are never bled nor allowed to have the blood of other parties placed on them. To cure the headache a string is tied around the head of the patient, and the operator, who is always a woman, takes an end of the cord between her lips and frets them with it until they bleed freely. The disease is supposed to be attracted by the blood, and to pass along the cord to reach it. Suction for local pain is much employed, the end of the performance usually being the production of a piece of bone, which is exhibited as the concentrated essence of the pain. The same practice is found among the Guayacura tribe in Brazil, and in each case the saliva is carefully buried. In the Tonga Islands, and in Patagonia, and among all the South American tribes, the medicine men are the priests who take charge of all difficult cases; but I need not weary you with details. Precisely the same state of things is found in Africa, and very graphic and amusing accounts of the ceremonies used to drive the devil out of the sick man will be found in most of the works of African travellers. Drum-beating, chants and charms are the means used to induce his satanic majesty to depart.

It is also worthy of note that among savage nations we meet with peculiar diseases in which only equally peculiar medication is of service. For instance, the Cossack women are sometimes affected with what is known as the *anadyski bol* or sickness, in which they are in a sort of trance, speaking unknown tongues, and fall into convulsions if certain articles are not brought to them.⁷

Still more remarkable is the *tigretier* disease of Abyssinia, which, commencing with fever, reduces the patients to skeletons, and is often fatal, and can only be cured by music and dancing, being in many respects analogous to the so-called tarantism of southern Europe, or the famous dancing mania which broke out in the fourteenth century. Although such diseases are usually found only among barbarous and ignorant people, they may appear in civilized countries in the form of epidemic chorea or convulsions, often connected with religious ceremonies, as in the convulsionists of St. Medard, the leaping ague of Scotland, or the jerks of the Methodists in Kentucky and Tennessee some years ago, and also, in exceptional cases, without any religious connection. In all such cases magical medicine is of peculiar efficacy.

The very general use of suction as a remedy among savage tribes, not only in this country, but in Africa and the South Sea Islands, is curious and not easy to explain. It may possibly be connected with the animal instinct of licking a wound, which, in the child, is shown by the carrying the injured finger to the mouth, and which, according to Charles Lamb, led to the discovery of the pleasures of roast pig.

The Shamans and wizards of savage tribes, while admitting to the initiated that they make use of sleight-of-hand to impress their patients, have, nevertheless, a belief in their supernatural powers. The ceremonies of initiation into the *Coufraternité* are such as to powerfully stimulate the brain, and a hypnotic or mesmeric state seems often to be produced by them. They also produce hypnotic phenomena in some of their patients, and, in this way, produce effects which, to those not familiar with such phenomena, may seem good evidence of the possession of supernatural power.

It is by no means necessary to cross the ocean or to go west of the Mississippi to find specimens of Shamanism, or of spiritual medication. In the South, you may even yet find a few Obeah men or witch-women who are resorted to by some of the colored population. And here, as in all countries, you can find plenty of what is known as folk medicine, which, as Mr. Black says, contains "the unwritten record of the beginning of the practice of medicine and surgery."⁸ He also points out that three explanations of disease and death appear to be prominent among barbarous and ignorant peoples, namely: "(1) The anger of an offended external spirit. (2) The supernatural powers of a human enemy. (3) The displeasure of the dead."

Now, whether, or not, the quaint superstitious and practises which are found in folk-medicine, as among savage races, are to be explained on the theory that they are fragmentary relics of survival of what was once a complete system of philosophy, or of ancient superstitions and fears, it is very certain that the use of ceremonies, charms, and incantations characterizes, also, the ancient medicine of all nations of which we have records.

As the fundamental principle on which it depends — namely, unreasoning belief — exists in the majority of human beings, it is not strange that it exists in various forms at the present day in all countries, even in the most civilized. Very possibly some of this audience, when children, have tried some charm against warts; and the faith-cure, the consultation of mediums for medical advice, and the effort to ward off death by prayer, either public or private, all of which depend on faith in what we may call supernatural beings and forces, are not uncommon among you.

There is also abundant evidence that any of these methods sometimes have had, and do have, the desired effect, at least, for a time. There are two different ways of viewing such phenomena, corresponding to the two great classes of human minds to which I referred a few moments ago. The first is to assume the existence of beings and forces, or of a particular form of matter which are not ordinarily cognizable by the senses, nor subject to ordinary methods of investigation. This is the doctrine of magic and its derivatives, of which I shall speak hereafter. The other way is to consider how far the results of magic, faith, etc., can be accounted for by what we now know of the mechanism and functions of the human body, and especially of the nervous system.

(To be continued.)

— The *Lancet* records a case of multiple minute corneal ulcers following exposure of the eye to electric light.

⁷ Kennan (G.) *Tent Life in Siberia*, London, 1874, p. 355.

⁸ *Folk Medicine, a Chapter in the History of Culture*, by William George Black. London: The Folk-lore Society, 1882.

Address.

PERSONAL REMINISCENCES.¹

BY BENJAMIN EDDY COTTING, M.D., ETC.

FOR some time before and nearly up to my day the art of medicine had been in a rather quiescent state. Diseases had been classified and named; and tolerably well defined methods of treatment had become authorized. There was, indeed, an ever-recurring similarity in these methods for the several diseases. If polypharmacy prevailed, it was polypharmacy according to rule. Given a disease, "a course to steer by" was pretty well laid out. No sick man ever escaped it. Nor, for that matter, did the well fare much better, if they wished to have health assured to them. Venesection, and other prophylactics, were resorted to as the several seasons came around. But the taking of "spring medicines" was thought obligatory on all. Draughts, emetics, and cathartics, were apportioned out to adults with a free hand. Sulphur, with cream of tartar and molasses, was periodically administered to the young; while a new-born infant was not considered fully prepared for life's journey until its stomach had been filled and emptied by a potation of molasses diluted with the vesical secretion of the first youngster that could be secured for the purpose.

Then, too, a doctor's call meant something. An emetic-cathartic inevitably followed the first visit, no matter what the disease might be. No wonder the coming of a doctor was dreaded in those days. But the practitioner then had one advantage—his course was plain. He was called to *do something at once*, and he generally did it. If after that he could only be sure of his nomenclature, his subsequent action was equally simple and marked out for him. "Tell me the name of my patient's disease," said a young doctor who had just then pitched his tent near mine, "and I shall readily know what to prescribe for him!" In all this the practitioner's course was simple and easy. He had to be "heroic" only, with the lancet and heavy doses, and his responsibility was cancelled. If successful, he had been lucky in hitting upon the right medicine; if unsuccessful, it was the patient's misfortune, the fault of the stars, perhaps, but not of the remedies, so-called, nor of the attendant if his treatment had been sufficiently tamulous. But, alas, for the cautious or unheroic practitioner. His failures were accounted no better than homicides, if not indictable.

But medicine was not wholly at a standstill when I began its study. New investigations, new methods, and new doctrines were enlivening its followers. Auscultation told a new story of the chest to those who had ears to hear. Peyer's patches had begun to show themselves. The numerical method was in full discussion. Louis and his followers were loudly proclaiming the results of his observations. With some, observations were everything; to number their details the chief object and end of science.

But the greatest demonstration of the day, one destined to revolutionize ideas in the treatment of disease the world over, and for all time, was then promulgated to the startled profession. That a fever sometimes would have its run was generally admitted, but

that self-limitation is the rule in most, if not all diseases, was a doctrine the profession was not prepared for.

For what reason I know not, possibly a "philosophical tendency" sometimes attributed to me, I hope truly, I inclined at once to the new doctrines, and even went a little further. Young in medicine as I was, I ventured to ask if disease be self-limited and medicines will not arrest it, why dose it at all,² except to make the patient more comfortable, and if possible diminish his risks. I sought, therefore, for opportunities to observe disease, undisturbed by medication. Fortune favored me.

One of my companions³ was a student, who, previous to taking up medicine, had resided a long time in Germany for other studies, and was a thorough German scholar. Coming home, he had brought with him as curiosities, original publications of the author and followers of the "New System," as it was called. This was beginning to tickle the fancies of unstable heads hereabouts, both in and out of the profession. My friend (who had now abandoned his previous occupation and begun the study of medicine), became interested in "the system," and I shared his interest. By his aid we could study its pretensions from first sources. Together we tried its efficacy. Then we tried parallel cases, and we soon found that for every case in which he could show recovery under its methods I could produce one equally successful treated without medicines. We gave "the system" a fair trial, but both of us soon became convinced by our actual experiments that there was literally *nothing* in it—nothing in its dogmas or its therapeutics. Nature was as fully capable, we found, to cure diseases without as with its assistance. It is unnecessary, perhaps, to add that neither of us became a convert.

When afterwards the practitioners of this "system" were asked to leave the Massachusetts Medical Society, I advocated, for the sake of argument, the society's allowing the *practice*, without committal to its doctrine,—the making a trial of its merits in practice as I had myself done, and as the Society had advocated with other new plans or medicines. It would give, I argued, the regular practitioner a number of elegant placeboes. My proposition met with decided, almost furious opposition from men who declared emphatically that *they never* used placeboes, that to use a placebo was a detestable imposition. Yet these men admitted that they used drop-doses of spirits of nitre in typhoid fever! They advocated expulsion, but years afterwards counselled leniency lest "persecution" should "increase the popularity" of such practitioners who had now become active and obnoxious disorganizers.

There can be no greater mistake than to attribute modern mild medication to the partial success of this baseless folly. This last was a reduction of the former to absurdity. If local tradition and gossip of the day at the place of its origin were correct, the "hayseed pellets" were suggested in derision of the ptisans and gum-syrups of eminent French practitioners, and the "system" was devised afterward when its author, to his great astonishment, found that his satire was taken for new science by the sapient public. The "system" now exists in name only, to at-

¹ Read, in part, before the Norfolk District Medical Society, October 25, 1887. Continued from page 7.

² See Boston Med. and Surg. Journal, July 4, 1872.

³ The late Joseph H. Dorr, M.D., etc. He was the most accomplished conversationalist I ever met with, excluding professionals.

tract the fanciful and the ill-advised. Its theory and its treatment receive no support from scientific men. Its recipients swallow its pretensions and its pellets with wondrous simplicity, not knowing the import of its name even. When cured under it, nature cures them. Seldom, however, do such patients escape the "regular" doses they so often denounce, even at the hands of their own attendants.

It has been rather amusing, as time has rolled on, to hear my dissent to such doctrines and practice attributed to prejudice due to ignorance of the whole matter, when probably, with my friend, I had tested the subject by rigid experiments more fully than had all its boastful pretenders hereabouts put together.

As for personal experience, during pupilage I took care of unnumbered cases of measles, and scores of patients in scarlet fever without medication; banishing, no easy matter, hot saffron and similar teas, the then usual resort in such cases "to bring out the eruption," and allowing abundance of light, air, and water, then so often denied the sufferers. Many cases of typhoid fever were also entrusted to my management, and many were the undesired compliments I received for skill in medication which had been successful by omission.

Not many years ago there was a severe epidemic of typhoid among the gentry at the west end of London, with numerous cases and many deaths. As the dwellings were faultless in construction, drainage, and water-supply, and, as theorizers must have second causes, the milk-supply was charged with the introduction of the fever. The milk was of the best character, and from faultless farms especially selected for these people. A man had died on one of these farms a short time before, but his disease had not been even suspected to be of a typhoid character. The story fabricated out of this death, ill-founded as it was, seemed to satisfy the demands, but the assumption is said to have cost the companies over sixty thousand dollars, without utility. Nevertheless, milk is still taken by everybody, in England as well as in other countries, and epidemics continue to break out where they cannot be attributed to it, or to any other discoverable cause. Thus epidemics will occur when and where least expected. They have always done so, and probably ever will continue, in spite of the "authorities called upon to suppress them," to the end of time, or until the limit assigned to them in the course of nature.

A most eminent zoologist once gave in detail to an equally eminent mathematician the conditions of existence of a parasite, its manner of reproduction, its rise, its residence in different "hosts," the dangers that beset it throughout existence, etc., etc.,—and the mathematician *calculated* that, by the doctrine of chances, the creature could not be reduced to extinction. From this there would seem to be but little probability of our being able to "stamp out" disease by destroying its microscopic or invisible causal or attendant organisms, by means of "germicides," or by a proclamation of the sheriff, while we fail in ability to exterminate a tape-worm or an acarus, or any similar visible monster. Is it not more than probable that disease, like other created things, will leave the world, if ever, as the ancient saurians did, or the dodo in historical times, only in the course of events.

I early had experience in two severe epidemics of typhoid: one during pupilage, and one just after grad-

uation, the latter when acting *locum tenens* while the resident physician of a large village took a vacation. The outbreak began just as my friend was leaving, and continued until sometime after his return. By his books it appeared that the disease had occurred in over seventy houses in our circuit. No cause for it could be assigned. Other neighboring physicians were equally occupied, in their villages, and I was fully acquainted with their treatment. My own methods were generally acknowledged to be at least as good as theirs; and I had not used active or perturbing medicines. Their measures were generally of the more "heroic" kind. I saw one of their patients taken out of a wet sheet, "a cold pack" as it was called,—dead! The fever had been broken up.

In an epidemic of typhus fever, some years later, and among immigrants chiefly, I took care of three hundred and seven cases without administering drugs. Thirty-one died or about one in ten. In the same epidemic and in the same class of people, at Ward's Island (where the commissioners declared in their report that the "practice had been among the most successful,") there were two thousand and nine cases, with four hundred and twenty-seven deaths, or more than one in five. This was noticed by officials nearer home, who publicly reported, in print, of my cases that "it was apparent that the mode of treatment must have been judicious and skillful from the small number of deaths which occurred."

Moreover, in this epidemic, another point was noticed; some of the attendants were attacked. Of these, where the onset was of the severest character, even to delirium, there were instances of rapid abatement and of convalescence in a few days, the disease having been "broken up" by non interference.

Before I came to Roxbury I had practised venesection so often for other physicians that its performance was to me an insignificant matter, yet so thoroughly had I become convinced of its uselessness, or harm, that I did not bleed in the first case of pneumonia, here coming under my care. The patient was a man of standing and influence. I suffered much anxiety during his illness, for I well knew that if he died I should be unsparingly denounced by practitioners and laity, and perhaps be obliged to leave the place. Still I resolutely did as I would be done by. The man recovered, with less damage apparently than is usual in such cases. I have never bled in that disease since. Moreover, the influence of this case, with other similar cases, was surprisingly marked on the general practice of the neighborhood. Practitioners hereabouts soon began to learn that milder measures and less disagreeable doses, matters which I often advocated at our Medical Meetings, are quite as effective for good, and deprive the sick-room of much of its discomfort and dread.

About the time of my pupilage, surgery was thought to have reached a pretty high degree of perfection. Some of its ablest men had gone but many remained. I do not call to mind any startling innovation or radical change. The subcutaneous division of tendons was for a while much talked of, but a "run" in that direction did not promise a great deal, for as one of its principal performers, who really seemed to have foundation for his remark, said in my hearing, that he did "not see why, in God's name, all deformities occurred among poor people."

The great revolution in surgery came not long

after, on the *accidental* discovery of anaesthesia. I call this an accidental discovery, though in fact it was rather the accident of an accident. An adventurous dentist happened to have a nervous patient, who wished a tooth extracted, but failed in courage at the critical moment. The dentist, out of patience, sought for something to engage her attention while he could seize the tooth. He applied to a well-known chemist for a gas-apparatus to serve as a *ruse*. The latter, as the dentist was leaving, called out in an nonchalant manner, "why not try ether, that'll put her to sleep." This was more than the dentist asked for, and there is no evidence that at the time either of them was contemplating a *painless* operation. That point was not in question. Control of the patient was the only object then sought for. With his forceps on the tooth the dentist would finish the operation, no matter how *painful* it might be.

Now sulphuric ether was then well known to chemists, and taught by them, to be capable of producing "a degree of intoxication when its vapor was inhaled by the nostrils," but taught always with the caution that "this may prove dangerous or even fatal." Our chemical teachers, this very chemist among the rest, had annually told us all this, for I quote their very words. How much the dentist knew of ether is uncertain, nor is it material, but, heedless of consequences, he at once obtained some, tried it upon himself, and *slept a while, unharmed*. Thus far a chance-word had had its effect. Had the dentist known as much as the chemist was supposed to know, perhaps he also would have thought such experiments, as his own upon himself, too "reckless," as the chemist called them, and the discovery would not have then been made by him.

Again, a fortuitous occurrence, the turning point in the whole matter. By good luck the dentist's next patient happened to be one (and we have since known not a few such) to "go off" without a struggle on the very first inhalation. This was a lucky chance indeed, for had it been otherwise, the whole thing would have failed. The agent was administered. In a moment the patient, to the untrained eyes of the operators, seemed to be expiring, apparently *in articulo mortis*. The dentist, startled but not demoralized, immediately extracted the tooth, to have something to show for his venture. The patient, reviving as quickly as he had succumbed, declared that he "knew nothing of the operation and had not suffered pain." The astonished dentist, controlling his emotions, at once obtained an attested written document to that effect; and immediately sought to have his discovery confirmed by others whose authority would not be questioned. Thus a succession of chances produced a glorious result.

These facts, and they are the *facts*, should not detract from the honor due him who so quickly seized upon the offered boon, had it thoroughly tested, and made it available to the world. Therein was the merit, and the whole of this was his and his only; and he should have the credit of it.

All these things I was personally cognizant of at the time. Most of the parties except the dentist, who was previously unknown to me, were among my intimate friends or relatives; and while I dwelt near enough to know all the facts in the matter, I was fortunately far enough away to escape being involved in the controversies. I knew the chemist long and well, and I am as sure of it as of my own existence, that

without the dentist, or one like him, this discovery would not then have been made. When asserting his claims before a body of scientists, the chemist was asked by an eminent savant (who had just come among us, and happened to be present) "doctor, did you make one leetle *experi-ment*?" The chemist hesitated; but on a repetition of the question was obliged to confess that he did *not*. "I think it would have been better, doctor, had you made one leetle *experi-ment*." Therein was the gist of the whole matter!

That one who had never made an experiment in that direction, and who at first had, with an emphasis and rightly, disclaimed all connection with it, and had denounced it as "a — humbug," should have, so soon after its success was known, claimed the merit of the *whole thing*, is sufficiently surprising; but that a demagogic foreign practitioner, who had subsequently merely made use of a kindred agent, a deadly one at that, *brought to him by another person*, should have had the effrontery to appropriate to himself the whole credit of obtaining true anaesthesia, and to accept civic and other honors in return for such meritorious achievement, is almost passing belief. A well-deserved and withering castigation at the hands of the ablest of Boston physicians almost took the life out of the victim, and made the friends of the trickster writhe. They should now cease to worry his manes with undeserved laudation.

Of the great revolution in surgery effected by anaesthesia, there is no need of mention here. It has not only enabled the performance of many and formerly impossible operations, with ease and safety, but has wholly altered the manner of operating. Sometimes an old operator becomes impatient at the slowness of the procedure, and longs to take the knife and finish it with a stroke.

The first experiments in this country with chloroform were made at my house, by the chemist above spoken of, who had received the article from Edinburgh, only a few hours before. He, himself, administered it to several then present, one of whom experienced alarming symptoms. In the present knowledge of its deadly character, the wonder now is that a fatal result was averted.

There has been another, milder, and more recent sensation which has not wholly subsided. I refer to Listerism. That there was need enough in some foreign hospitals, possibly in our own though I cannot think it, for a cleaner management of wounds and wounded persons, and for less objectionable dressings, no one need be told who had visited them in days gone by. But the opposite extreme does not seem to have been called for; accordingly, much of the original trumpery and complicated processes of the new scheme have been abated. Less cumbersome dressings have been adopted. The foul smelling agents that were first considered essential have, it is said, been abandoned by their originator, as harmful or even dangerous, while it is sought to sustain the "principle" by other more agreeable and less pernicious substitutes.

If, as of old, simplicity of dressings, cleanliness, proper chance for exit of secretions or accumulations, (and it is difficult to understand even now, why the thread of a "long suture" so much inveighed against, soft and flexible as it is in the moisture around it, is not as good a conductor for drainage as a tube many times larger, and liable to become rough by erosion, etc., and, where there are no long sutures, a depend-

ent point left uncompressed will ordinarily answer all needed purposes)—if these things, with rest and support of the parts involved, are thoroughly attended to, there will be less need of the harmful measures and agents even now advocated, whatever may be the accepted theory of absorption or infection. A few years ago the true principles and methods in the care of wounds were well set forth by one of our members before the Massachusetts Medical Society, in a paper which the late Surgeon George A. Otis, United States Army, compiler of the "Medical Memoirs of the Civil War," highly approved of and supplemented.⁴

It has been said that every surgical aspirant must invent a splint. Without ever having been such an aspirant, but having "a mechanical turn of mind," I have used half a dozen or more, constructed by myself, or adapted for simplicity or availability. Accounts of some of these I published; mention, however, should be made of the great value of splints constructed of pasteboard, or thick paper strengthened by strips of iron,⁵ a suggestion of the late Dr. Ira Allen, a much lamented member of this Society. They are easily made, are very firm, and exceedingly light, so light that the patient hardly recognizes their application. I have made and used dozens of them. They are susceptible of any kind of shape or twist, being admirably adapted, for instance, to fractures of the elbow, of the patella, Colles's, and even to fractures of the neck of the thigh bone—enabling the patient to sit up, to be moved about easily, with freedom from most of the usual restraints enjoined in such injuries.

When I began bandaging was a complicated and cumbersome matter, difficult for the attendant and a burden to the patient. For example, the regulation bandage for fractured clavicle required three rollers of nine yards each and a large axilla pad, the application of which was a severe test of a student's adroitness and proficiency in the art of bandaging. I tried many schemes to get rid of some of this, and to find simpler and equally effective methods. Naturally, I was pleased with the handkerchief bandages of Dr. Mayor, of Lausanne, of which he had published an account;⁶ and I obtained many useful hints from his very practical suggestions on extemporaneous treatment of accidental and other injuries. His two handkerchief arrangement for fractured clavicle was an immense improvement over the cumbersome affair mentioned above.

I have also altered if not improved a few minor operations, and originated one which seems at length to be finding favor in the profession.⁷ It is founded on a new principle, and promises uniform relief from a very troublesome and disabling affection.

In a pecuniary point of view surgery has not much to recommend it to the general practitioner. Occasionally a large fee is heard of, but the average is small. From the nature of their employments surgical cases occur mostly among laborers and the poor. Personally it helped me in a marked degree in a somewhat peculiar manner. He who dosed largely was considered the bold man, the "heroic" practitioner. No matter how small the dose, I have never been accused of fear to give a larger, or of want of heroism.

My surgical boldness effectually precluded such a charge! . . .

In 1848, I went abroad to see how much better they order these matters in foreign lands. My famine was over. I had repaid to my over-generous parents the cost of my professional education, principal and interest; and had laid up enough to authorize the proposed outlay. . . .

It was a year of revolutions. We were in Paris during many sanguinary *émeutes*, and the four days of the great insurrection, seeing enough of fighting, and military surgery. I passed several months in attendance on the services of the noted men of the time, in the hospitals and elsewhere, and then visited some of the principal medical centres, on the Continent and in England. . . .

In 1860, I made a more extended tour, through Spain, and eastward as far as Constantinople and the Black Sea. . . . Desirous of acquiring some little knowledge of people in the ordinary exigencies of life, in their homes as well as in public institutions, in most of the places I visited I sought opportunities to see private patients with some medical resident, and this of course in addition to the ordinary sight-seeing and routine of most travellers. Thus in Rome, after having *done* the city even to a fearful descent into the catacombs, I became the guest of Dr. Valerj, medical professor in the University. Through him a door was opened to things not usually accorded to strangers. He showed me hospital and private patients, and the medical collection of the College. One of the latter was rather unique, representing the fingers of the operator passing into the abdomen through the walls of the gravid organ at term, in an attempt to dislodge its contents! Through him, too, I was made a corresponding member of "*l'Accademia de' Quiriti*," a prominent Society of all sciences.

When in Rome we had an opportunity to witness a "real miracle." Some thousands had assembled in St. Peters, to assist in the canonization of a saint. Many hundreds of candles had been lighted and the illumination was at the point of completion, when a very long ladder slipped from the hands of the workmen and fell diagonally across the multitude. The impending fall had been noticed in season for the crowd to divide, and to let the ladder come crashing down without striking any one. As soon as the appalling murmur of the terror-stricken mass had somewhat subsided, an official jumped upon a seat and loudly proclaimed that no one had been injured. To the Pope, who came in at this moment, the circumstances were explained and the story of the wonderful escape told, to his apparent great satisfaction. The ceremonies proceeded without further delay. The next evening, as we had predicted, an illuminated broadside appeared attributing the complete safety of the people to a miracle of the new-made saint. Dr. Valerj, however, whispered in my ear that he had that day attended three premature deliveries directly attributable to fright and shock from the accident.

(To be continued.)

— Dr. Fordyce Barker says in the *American Journal of Obstetrics*, that the most valuable remedy for hemorrhages, occurring near or at the climacteric, is a combination of equal parts of fluid extract of hamamelis and fluid extract of hydrastis.

⁴ See Boston Medical and Surgical Journal, July 23, 1874, also April 25, 1878.

⁵ See paper by G. E. Hersey, M.D., in New Hampshire State Medical Society's Communications, 1875, p. 39.

⁶ "Nouveau Systeme de Deligation Chirurgicale," Paris, 1838.

⁷ Boston Medical and Surgical Journal, April 7, 1887.

Original Articles.

SOME OF THE OBSTETRIC AND LEGAL RELATIONS OF INFANTICIDE.¹

BY F. W. DRAVER, M.D.,
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REGARDED from the obstetric point of view, these cases are chiefly useful for their negative significance. They illustrate the principle that parturition in its normal processes does not involve pathological elements, but is physiological in nature. They hint that meddling midwifery may well be reserved for abnormal conditions only. They show that healthy women are not dependent on the interference of art to guide them through the crisis of child-birth safely and quickly. They tell us that primiparae are not inevitably condemned to suffer hour after hour of tedious labor. They remind us that the dreaded microbes are not always successful in colonizing for mischievous purposes, even when the conditions, mental, moral, physical and hygienic, apparently favor. These women, pregnant out of wedlock; anxious through the whole period of utero gestation to maintain the appearance of virgin elasticity; dreading, too, the outcome of their follies; depressed by the perpetual fear of exposure; carrying their secret burden with constant apprehension of the suspicious eye or the accusing word; ignorant of the true nature of the process of child-birth, yet knowing well that it is something hard to endure; these women were the most proper subjects for puerperal fever to fasten upon and destroy. Yet they were exempt from accident in child-birth and its convalescence; the lacerations, hemorrhages, syncope, air-embolism and other baleful disasters which the accoucher remembers and apprehends as among the possible incidents of each new case to which he is summoned, formed no part of the history of these unattended labors. The women gave birth to their children according to nature's plan.

All this is not to be regarded as in any sense an argument against the intelligent practice of the obstetric art. It is not saying that there is no use for the methods and measures which modern midwifery approves. It is not a protest against the admirable demonstration of the utility of antiseptic precautions lately made before this Society. It is not a hint that the attendant in a lying-in room should stand with folded arms till the first cry of the extruded child warns him that he may now proceed to cut and tie the funis as his primary overt act in a normal labor. To use these cases in such a way, does not enter into the writer's purpose. The lesson which they teach is of another sort, and one which every obstetrician's experience amply illustrates, namely, that normal midwifery does not require meddling interference and that the highest art consists in the prompt recognition and skillful management of abnormal obstacles to parturition.

In one other respect these cases are of some interest to the obstetrician. They show the extraordinary endurance which healthy women may exhibit. If the constraint of secrecy were removed from these patients, if the fear of discovery were not an ever-present and controlling force in their conduct, they undoubtedly would have presented all the emotional manifestations to which obstetricians are accustomed

in the lying-in room. But held in check by a firm purpose to conceal their sexual imprudence and its consequences, they suffered their pains in secret, making no outcry; dreading, instead of welcoming the approach of help and sympathy and after all was over, stoically assuming the appearance of an ability to do their usual daily tasks. For such fortitude, though misdirected, they deserve to be mentioned with their dark-skinned sisters of the Indian tribes, who disdain to delay the migratory march of their people, for such a commonplace event as a lying-in; but the child being born, it is put at once upon its travels, with the puerperal mother, as if nothing had happened.

There are other obstetric relations which these cases suggest and which would well repay examination. Affairs of infanticide frequently give rise to such questions as these:

To what extent do artificial respiration, inflation of the lungs and other measures of the accoucher for the resuscitation of the apparently asphyxiated newborn child interfere with the value and reliability of the hydrostatic test and other proofs of respiration?

Is it probable that a woman in labor would be able to do fatal violence to her child in attempts innocently made by her to aid her delivery?

Is it probable that a woman, more especially a primipara, mistaking labor-pains for colic or a call to defecate, can have such a precipitate parturition while seated in a privy, or a water-closet, that her child is dropped from her and destroyed in a perfectly unavoidable and excusable manner?

May women be delivered unexpectedly while in the standing posture in such a manner that the child, rupturing the funis in its fall, can come upon the floor with such force as to produce injuries to the head, fatal in character and easily mistaken for those produced intentionally?

Is it probable that the navel-cord encircling the neck of the child, within the womb and during the birth, would produce marks upon the skin and other anatomical appearances readily interpreted as due to violent strangulation with a ligature?

May spasmodic contraction of the os uteri around the neck or other part of the child's body during the birth, cause the child's death with resulting appearances closely simulating those of violence?

But in addition to their value as obstetric anomalies these affairs of infanticide have an interest of another kind. Medico-legally they offer many attractive topics for discussion. Perhaps the most important of these is the fact that they are almost invariably barren of results when they become the subjects of judicial investigation. It is one of the rarest events that a woman accused of killing her new-born child is convicted and punished, or even brought before a jury for trial under an indictment. In ten years of service as a medical examiner, the writer has never been called upon to testify at a jury-trial in a case of this class, although he has reported to the authorities a very considerable number of instances in which the anatomical appearances left no reasonable doubt of the violent manner of the child's death under circumstances that pointed directly to the mother as the agent. The testimony of other medical examiners in Massachusetts shows that this experience is not singular, but that prosecutions in this variety of crimes are remarkably few.

The explanation of this state of things is not far to

¹ Read before the Obstetrical Society of Boston, November 12, 1887. Continued from page 11.

seek. That unmarried women may kill their illegitimate offspring with such impunity, is a fact that rests on legal grounds, and not on want of medical evidence. The anatomical proofs in these cases are not wanting in clearness and directness. The medical investigation of an affair of infanticide, while it involves some special elements insisted on by legal traditions, is not, in general, a difficult undertaking. Whatever the cause and manner of the death, the child's body will disclose the evidences of it as plainly and decisively as would the body of an adult. Asphyxia in its various forms, wounds, poisons—all the methods which unlawful violence uses to destroy life are as demonstrable upon post-mortem examination in the case of the infant as in that of the man.

But the medical investigation is not ended at this point. The moment the examiner enters upon the work of clearing up the medical problems involved in an affair of child-murder, he is met at the very threshold by a series of questions which the law asks and to which it requires an answer. The first of these questions is: "Was this child born alive?" And the medical examiner seeks for anatomical evidence that will enable him to answer in the affirmative. He observes the organs of respiration with particular care; he notes the position, volume and color of the lungs; he looks for the boundary-lines of the pulmonary lobes and for expanded air-vesicles: he feels of the lungs to determine if they crepitate under pressure; he places them in water and while they are submerged he cuts them, noting if they emit bubbles of air from the section; he tests their buoyancy in water, carries his test from the organs in their entirety to minute sections of lung-tissue forcibly compressed; he explores the trachea and bronchi for air bubbles; he examines the stomach to ascertain how far air has become intimately mingled with the gastric mucus or with blood swallowed in the course of the birth; he notices to what extent the small intestine is inflated with air; he searches the kidneys for the yellow lines of uric acid infarction; if he is inclined to exhaustive over-refinement in his researches, he explores the cavity of the tympanum to learn if the middle ear has lost its so-called "mucus mass" of intra-uterine life by the introduction of air. And if his observations are satisfactory to him, he replies: "Air has entered this child's body, expanding the lungs, leaving its presence manifest in the stomach and the intestines and ventilating the middle ear through the Eustachian tube. It is my belief that the child was born alive, and that the changes found as described were due to the natural acts of respiration and deglutition."

But the law requires something more than this: it not only assumes for purposes of evidence that the child was still born, thus throwing upon the prosecution the burden of proving the contrary, but it also declares that "with respect to the birth, the being born must mean that the whole body must be brought into the world,"² and it asks the medical witness if

his examination enables him to state whether the child was "wholly" born at the moment of its death. To this extraordinary question, the reply is necessarily in the negative; for so far as the post-mortem appearances are a guide, one cannot state that the foot, the leg, the pelvis, the entire trunk, in short, the whole body of the child, save the head, was not in the maternal passages when the act of respiration began and wrought the changes observed in the lungs. Indeed, many well-authenticated instances of the *vagitus eaynalis* and the *ragitus uterinus* constrain the medical expert to admit that the changes noted in the lungs and digestive tract may have occurred, under favoring conditions, even while the child was wholly unborn, instead of wholly born, and while the entire body was within the womb; but he insists on qualifying this admission lest it prove too much, and he explains that such a remarkable phenomenon as the audible cry of a child within the mother's womb requires the entrance of air to the fetal larynx, and this cannot occur except with the face presenting (an abnormality predicated a tedious labor and the assistance of an accoucheur) and except, also, with the vaginal canal patulous through the manual interference of a witness of the birth.³

But the law gives the defendant mother still another chance of escape; it requires proof, not only that the child was living when it was born, and that it was wholly born when it died, and that its death resulted from the violence as charged, but it goes a step farther and asks for evidence that it had an "independent existence" when it died from the violence.⁴ At this point, the medical witness realizes fully the limitations of his science when applied to the needs of the criminal law, and is forced to admit that all his carefully conducted observations and tests have little value as controlling evidence, when the violent death of a new-born infant "*infans sanguinolentus cruentatus*" as the Roman law describes it, is the subject of inquiry; and that his proofs are useful only so far as they corroborate the testimony of an eye-witness of all the details of the birth and death, who can aver that the child did not breathe and cry and suffer violence and die before every part of its body was fully born, and before the blood ceased to flow from the mother to

² Roscoe's Digest of the Law of Evidence in Criminal Cases, Eighth Ed., 1874, p. 799.
Archbold cites this case: "Where the prisoner was indicted for the murder of her child by cutting off its head, and a surgeon stated that he was enabled to say definitely that the child had breathed, but could not swear that the whole body of the child was born when the act of breathing took place, Colman, J., said: 'In order to justify a conviction for murder, you must be satisfied that the entire child was actually born into the world in a living state. The fact of its having breathed is not a decisive proof that it was born alive; it may have breathed yet died before birth.' Rex vs. Sillis, 1 C. & P. 850." Archbold on the Law of Evidence, Pleading and Evidence in Criminal Cases, Seventh Edition, 1860, p. 1, p. 836.

³ See also Greenleaf on the Law of Evidence, 111, p. 129, (12th Ed., 1876); and Archbold (loc. cit.) p. 836, quotes Mr. Justice Parke as ruling in a case of alleged child-murder by stabbing with a fork: "The child might have been born, but its having breathed is not sufficiently life to make the killing of the child murder; there must have been an independent circulation in the child, or the child cannot be considered as alive for this purpose."

⁴ Roscoe, cit., p. 799. See also Greenleaf on the Law of Evidence, 111, p. 129, (12th Ed., 1876); and Archbold (loc. cit.) p. 836, quotes Mr. Justice Parke as ruling in a case of alleged child-murder by stabbing with a fork: "The child might have been born, but its having breathed is not sufficiently life to make the killing of the child murder; there must have been an independent circulation in the child, or the child cannot be considered as alive for this purpose."

the child, through the umbilical vein. Such a fortunate conjunction of ordinary and expert testimony cannot be a common occurrence!

And so the twenty-three men who constitute the grand jury, having sworn to "present things truly, as they come to their knowledge, according to the best of their understanding," apply their "average intelligence" to the curious problem before them and inquire if the mother's guilt is probable, and therefore indictable. They learn that the case is one in which the evidence is wholly circumstantial; no one saw the young woman destroy her illegitimate child, or do any violence to it; no one assisted her in her labor; no one can testify, as a matter of fact, as to the condition of the child at its birth, or the manner in which its death occurred; it is purely a matter of medical opinion. Then another influence, that of pity, comes to the defence of the woman. These grand jurors are not without some sense of chivalry and sympathy, and they say among themselves that it is contemptible to pursue this woman, more sinned against than sinning, betrayed and deserted by her lover, left to meet her shame and all its consequences single-handed and alone, suffering the dreadful pains of child-birth in solitary and silent misery, perhaps irresponsibly unbalanced when her child's first cries announced to her the culmination of her woe;—it is a cruel wrong to follow further with the strong force of the law a weak woman, already amply punished by physical and mental pain. And then the child is better dead; it was an illegitimate offspring; it would have grown up disowned and dishonored, a bastard and probably a perpetual charge upon the State's charity. And the natural and usual result of it all is, that in cases of infanticide, where direct, positive evidence of the facts relating to the child's birth and death is wanting, the grand jury votes not to indict. The admission of the medical witness that he finds it impossible in such cases to meet the requirements of common law precedents as applied to infanticide, is an element of importance in this result. But if, perchance, an unsympathetic grand jury should send an indictment into court for trial, with nothing but medical opinion as its foundation, one can well understand how competent counsel for the defence would use the rulings of the highest English courts for his client's benefit.

Now if the killing of a new-born illegitimate child in the secret solitude of the lying-in room be really a crime worthy of punishment, rather than a mischance to be excused, and if it be desirable to enforce measures to prevent such felonies, it is not impertinent to inquire if criminal jurisprudence is right in creating and perpetuating precedents which will be for the guilty mother a mighty ally in her time of trial, and which if they do not actually encourage child-murder, certainly do not help in its repression. Under the established rules of civil and of ecclesiastical law, the unborn child has well recognized and undisputed rights; its independent personality is admitted; it "may through its mother claim damages, it may have money or estates left it by will, a guardian may be selected for it or it may be appointed an executor."⁶ But the common law relating to crime regards the matter differently; "a child in the womb is considered *pars viscerum matris* and not possessing an individual existence, and cannot therefore, be the subject

of murder."⁶ It follows very naturally and properly, therefore, that "to support an indictment for infanticide at common law, it must be clearly proved that the child was wholly born and born alive, having an independent circulation and existence."⁷ Can there be any doubt of the inconsistency which exists between this judicial position and the dictates of sound ethics, enlightened reason and progressive science? Such a view of the legal relation of the unborn child places property considerations higher than the saving of human life; it permits the unborn child to set up and establish claims to estates, but declares that the right to its existence as an independent being and the right to have that existence protected by law cannot be recognized; it ignores the fact that the intent to kill is the same at whatever age of fetal or of infant life the assault is made; it offers encouragement to the abortionist by assuring him that it is not a crime to destroy a fetus, and it narcotizes the conscience of the accomplice mother, who aids and abets the abortionist in his act of murder.⁸

But suppose the law relating to the evidence of crimes should adopt the ground accepted by the civil law with reference to the unborn child; suppose it should declare, either by statutory enactment or by the rulings of judges, able and disposed to break asunder the bonds of tradition and of ancient precedent, that it recognizes in the product of conception, in the viable fetus especially, a human life entitled to full protection; that it will assume for purposes of evidence that, though hidden in the mother's womb, the child is living and that the intent to destroy it is a criminal intent; that proof of its destruction, whether within the womb or in its transit therefrom or after all anatomical connection with the mother has been severed, shall be subject to the rules of evidence which control all indictments for murder or manslaughter, can any one successfully maintain that harm would result in any direction? If the criminal law would but hold that the words "Thou shalt not kill!" are sufficiently inclusive to cover the unborn and the newborn child alike, we should hear less about insuperable difficulties in the way of medical evidence; unchaste women would soon learn that the killing of their bastard offspring was a crime to which a punishment was attached; abortionists and their guilty patrons would feel that they must find new safeguards against detection; and even obstetricians might find it profitable to reconstruct their notions of legal and moral responsibility before undertaking lightly the induction of premature labor or the use of the cranioclast.

— The late Mme. Boucicault, of Paris, at the time of her death manager of the "Bon Marché," left, among several millions to public charities, 10,000,000 francs to the "assistance publique" for another hospital.

⁶ Roseco, loc. cit., page 768.

⁷ Greenleaf's Law of Evidence, III, page 120.

⁸ The writer is aware that with reference to criminal abortion, so-called, the law does regard the intent of the accused as the essential point in issue and it does not require proof, therefore, that the womb of the woman operated on contained a living fetus, or a normally-formed fetus or indeed any fetus at all, at the time of the operation. And this very fact, that the existence of the fetus is ignored altogether, and that the crime is deemed to be against the mother only, fortifies the position taken in the paper. If the words of the Massachusetts Statute "whoever, with intent to procure miscarriage of a woman" (Pub. Stat. Chap. 207, Sect. 29) were amended to read "whoever, with intent to destroy the life of an unborn child and to cause its premature birth," they would more nearly express the true nature of the crime and the true motive of the feticide.

APPENDICITIS, WITH REPORT OF CASES.¹

BY HERMAN F. VICKERY, M.D.

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In an exhaustive paper read before the Association of American Physicians, by Prof. R. H. Fitz, and published in the *American Journal of the Medical Sciences*, for October 1886, it is stated that in a majority of the fatal cases of the disease variously known as typhlitis, typhlo-enteritis or perityphlitis, the essential pathological element is an ulcerated and perforated vermiform appendix. Adopting this view, I have applied the proposed name of appendicitis to the cases now reported. I venture to premise a brief description of the disease, chiefly in order to furnish a basis for discussion.

Appendicitis attacks four times as many males as females, and three-fourths of its victims are under thirty years of age. In children, and exceptionally in adults, prodromata may last for days or even months, consisting of anorexia, vomiting, irregularity of the bowels, more or less pain, felt chiefly in the right inguinal region, and a local swelling. The attack is usually sudden. There is a violent pain in the right groin, perhaps associated with a chill or with collapse. There may be no fever, but usually the temperature ranges from 100° to 102° F. Frequently there are vomiting and hiccough. Constipation is to be expected; but we may see diarrhoea or dysentery. It would not seem unnatural that the lower portion of the bowels should empty themselves in the early part of the attack. If, however, later on in the disease, there should be copious dejections, it would suggest that the cæcum proper had thus far escaped. From its incipency, appendicitis is accompanied by localized tenderness; and by the third day we may expect more or less dullness on percussion and a sense of resistance. If external examination prove negative in its results, digital exploration of the rectum should never be omitted.

When these signs of inflammatory exudation are found, it is usually advised to insert an aspirating needle, in order to determine whether pus is present. In view of the frequent failures to find pus, when it exists, by this means, I believe that laparotomy should be immediately performed, provided the eliminative diagnosis has been a careful one. Faecal accumulations in the cæcum tend to form a more elongated, vertical, nodular tumor, perhaps accompanied by a similar distention of the transverse colon, and seldom associated with fever or with so marked signs of local inflammation. In women, pelvic troubles must be considered, and a vaginal examination made. Hematoecle has been mistaken for appendicitis and *vice versa*. Internal as well as external hernia should not be forgotten, nor in children the possibility of intussusception.

The reasons for the early removal of the pus are: that the usual cause of death from appendicitis is the development of a general peritonitis; that this peritonitis occurs in more than half the fatal cases before the fifth day; that it is in most instances due to an escape of pus into the general cavity; and finally, even if the abscess remains localized, there is a longer illness and greater danger involved in expectant than in modern operative treatment.

The earliest treatment of the case can be described

as an effort to limit the suppurative inflammation to its original seat. The patient must therefore maintain absolute physical quiet, have the most simple liquid food in small amounts, and not merely his pain but the peristaltic action of his bowels must be subdued by opium pushed to incipient narcotism. Poultices, or if these be too heavy, hot compresses will also be grateful to the patient and contribute somewhat towards the desired end.

Alonzo Clark believed "that a large proportion of the cases of peritonitis in children are due to perforation of the appendix." It may be that even in those instances where appendicitis and a general peritonitis begin almost simultaneously, prompt operative measures will save life.

Within the last two years the following cases have been seen by me in private practice.

CASE I. The patient was an overworked clergyman and author, aged fifty-four, who had long been subject to constipation, which he overcame by mineral waters and fruits, especially figs. He was feeling more than usually fatigued when the attack, about to be described, came on. One Sunday being away from home to preach and having had an indigestible breakfast, he began to experience abdominal pain during the morning service. He finished the exercises, and then sent for a physician; who regarded the attack as one of simple indigestion, but was obliged to give morphine subcutaneously to relieve the pain. The next day, feeling better, the patient was permitted to ride nineteen miles in the cars, back to Boston. That afternoon I saw him. He was in bed, pale, and with cool extremities. The temperature was 102° F., the pulse 108, the respiration 20. The abdomen was tympanitic, but not tender. I saw no reason to doubt the diagnosis already made, ascribing his debility to the imprudent journey. The symptoms of his illness were nausea, vomiting, constipation and tympanitis, but for the first five days there seemed to be a slow improvement. The little pain there was was referred to the left side of the abdomen. Tenderness was slight. There was at no time dullness or increased resistance in the right iliac region. No rectal examination was made, an omission to be regretted, but as shown by the sequel, probably of little importance in this particular case. Dr. Sheldon, of Wakefield, saw the patient twice with me. Trouble in the caecal region was considered, but the evidence of its existence seemed wanting. Up to the sixth day, there had been improvement, if anything, in the general condition. Upon the morning of the sixth day, however, it was found that a marked change had taken place. There was decided collapse, but associated with it a painful restlessness. The tympanitis was extreme, although even now there was little tenderness or pain. The face was pinched. The occasional vomiting had given place to the peculiar, persistent and easy vomiting of peritonitis, resembling regurgitation.

Dr. E. N. Whittier was called in consultation, and confirmed all our fears as to diagnosis and prognosis. Early on the morning of the seventh day, death occurred. The autopsy was made on the next day by Drs. Trull, Emerson and Titcomb, of Concord. Dr. Sheldon was also present, and he states that there was slight objective evidence of general peritonitis. There was typhlitis, but no perityphlitic abscess. Through a minute perforation in the appendix, pus could be pressed into the abdominal cavity, in which

¹Read before the Boston Society for Medical Observation, November 7, 1887.

were found two minute bodies, one of them resembling a fig-seed, when it was put under a lens. Death was ascribed to the shock caused by the perforation.

CASE II. Mr. A. H., aged twenty-seven, clerk, had a grandmother who died of "stoppage of the bowels," and his brother is subject to digestive disturbances similar to those which for the past five years have affected our patient. The attack begins with epigastric pain, sometimes shooting down the right side, which is constant, but which has exacerbations. Nausea and persistent vomiting soon come on. The attack lasts about a day, and then the patient feels well until the next one begins. The bowels are usually regular. These attacks have gradually increased in number and severity. Two occurred within a month of the illness in which I first saw him. A third attack began January 4, 1886, in the afternoon and lasted all night. He took some laxative pills, on general principles, not because of constipation, and somewhere about noon he had several operations, which were examined and not found to be peculiar in any way. Not long after, while lying quietly in bed, he was suddenly taken with most excruciating pain in the right iliac region, which increased rather than diminished in severity. When seen by me about an hour and a half later his face was pinched, his extremities were cold, and his pulse small. After two doses of morphine, given hypodermically, he was relieved. Absolute rest in bed was enjoined, hot compresses applied, and pain was kept in abeyance by deodorized tincture of opium. The temperature at no time rose above 100.5° F. There were nausea, hiccough, tympanites, constipation and abdominal tenderness, especially in the right iliac region. No dullness nor increased resistance could be made out, however. On the sixth day I felt per anum a slight and tender swelling high up on the right side. This was also felt by Dr. Whittier, whom I now called in consultation. On the following day flatus escaped per anum, and on the next day, the eighth of the attack (reckoning from the violent pain), the bowels moved. On this day Dr. F. B. Harrington examined the patient with me, under ether, and advised an operation, which was immediately proceeded with. Dr. C. W. Townsend and Dr. Whittier were also present. Dr. Harrington made an incision parallel with and somewhat above Poupart's ligament, on the right side, and raised up the peritoneum without entering the abdominal cavity. An aspirating needle was inserted, with negative result. The great tympanic distension of the bowels, and the inaccessibility and small size of the abscess caused so much delay that the patient's condition demanded a cessation of the operation before pus was obtained. A large drainage-tube was left in the bottom of the wound at its inner extremity, the rest of the incision closed by suture, and a dressing applied. For the next two days the patient was very near death, but he rallied, and on the twentieth day was able to be removed to the Massachusetts General Hospital. No further rectal examinations had been made because they were so extremely painful. About a week after entering the hospital, where he was under the care of Dr. C. B. Porter, he complained of a sense of obstruction when attempting to defecate, and a fluctuating tumor was felt in the rectum on the right side, which about one week later, on the thirtieth day of his illness, burst spontaneously, discharging about a pint of pus. From this time the patient made a rapid and complete recovery. He now

has a slight hernia at the place once occupied by the drainage-tube.

CASE III. Albert S., a nervous, undersized boy of thirteen, had eaten improper things and been chilled seven days before I first saw him. Pain had been the main symptom from the start. He had vomited once after medicine, but not again. The seventh day of his attack his bowels moved freely after a laxative. On the eighth day he was found in bed with red cheeks, a distended abdomen, great tenderness on the right side and none on the left. The greatest tenderness and pain were referred to the right lateral region of the abdomen half-way between the ribs and the ilium. Liquid food could be taken well. Nothing distinctive was felt per anum, nor at first externally. On the sixteenth day copious voluntary dejections occurred, and it was then possible to feel a resisting mass in the right iliac region, somewhat dull on percussion. The general condition was improving very rapidly, however, so that I felt justified in waiting. On the twenty-first day I inserted an aspirating needle at a point a little inside and above the anterior superior spine of the ilium. A very small amount of pus was obtained. The mother was now urged to have a surgeon see the child, but instead she called my successor. It did not seem best to him to operate. In two weeks the child was well, without any new symptoms.

CASE IV. This patient, aged twenty-nine, was in the early stage of general paralysis, but otherwise in good health, when this attack began. He had been constipated for a few days, when he suddenly felt an intense pain in the right side of the abdomen, shooting upwards into the chest, and also across into the left half of the abdomen. The right leg was drawn up. There was great tenderness in the right iliac fossa, with diminished resonance and a distinct sense of resistance. The axillary temperature on the fourth day reached 101.9° F., but then sank to normal. I was called on the third day, and on the next he was carried to the Massachusetts General Hospital in the ambulance, as he could not be properly nursed at home. The treatment consisted in rest, poultices, and deodorized tincture of opium. On the fifth day pain had greatly abated, but tenderness was still present. On the next day acute mania set in, but, nevertheless, two days later, when the patient was transferred to the McLean Asylum, having become calm again, there was no pain nor tenderness in the right iliac region, and complete recovery ensued. In this case the bowels moved freely on the first days of the attack. There were no gastric symptoms.

Of these four cases all were males, and three were under thirty years of age. In the first case we note long-continued constipation and the abundant ingestion of fig-seeds as possible causes of the attack, although it will be remembered that only twenty per cent. of all cases are women, and yet women are extremely subject to constipation. In the case operated upon the rectal examination should have been made earlier. In the case of the boy, who was first seen on the eighth day of the disease, I felt safer in temporizing because by that time the abscess might be supposed to have tolerably firm walls. In the last case the cardinal symptoms of appendicitis — pain, fever and a swelling — were all present, and yet the most violent maniacal struggles, in which it required three men to hold him, did not prevent the rapid absorption of the exudation.

Therapeutical Memorandum.

THE PHYSIOLOGICAL ACTION OF ARNICA MONTANA ON THE CIRCULATION.

BY H. A. HARE, M.D., (UNIV. OF PA.)

Demonstrator of Experiment in Therapeutics and Instructor in Physical Diagnosis in the University of Pennsylvania.

ARNICA has been used for several hundred years chiefly as an external application for bruises, cuts, or like local injuries, and much less frequently, internally, as a stimulant in low fevers to the circulatory and even to the general nervous system. Used more largely by the older physicians than those of the present day, many of them asserted that it possessed value in intermittent fevers or in typhoid conditions, while even more favorable reports were made as to its effects in the treatment of peripheral palsies, as of the bladder and auditory nerve. It has also been used in the advanced stages of paralysis depending on centric lesions, after all tendency to inflammation has subsided.

Neligan found it useful in nervous headache.

Stroll claims that in the typhoid form of dysentery it should be regarded as a specific. Very few remedies, which have been so rarely used by the physician as has arnica, have found so great favor in the popular mind as has this substance. Nearly every household uses it whenever a sprain or bruise is produced, and it seems hard to believe that the results thus obtained exist only in the imagination of the patient, without any foundation, notwithstanding the fact that Garrod in a series of tests found that he obtained as good results with pure alcohol as with the tincture of arnica. Whatever may be the therapeutic conclusions drawn from empirical experience with the drug, it has certainly been found to be possessed of certain toxic properties, and for this reason it appeared to the writer worthy of a therapeutic study.

Viborg reports that it produces in the horse increased cardiac action, flow of urine, and warmth of the skin, followed by a full pulse, muscular tremors and depression. With large doses salivation was increased, and finally, insensibility to external irritants came on. Locally it acts, if concentrated, as a severe irritant.

When a dose of from five to ten drops of the official fluid extract of arnica root is injected into the jugular vein of a dog weighing from fifteen to twenty pounds, the pulse-rate and arterial pressure are for a moment depressed, but in the course of from thirty seconds to a minute return to their normal position. In about five minutes, however, the pulse-beats become one-third slower than they are normally, arterial pressure remaining unchanged, save that the pulse-waves usually produced by inhibitory stimulation give it a greater range. If under these conditions the pneumogastric nerves be cut, the pulse instantly increases its rate considerably beyond the normal, though not to the point generally produced when the peripheral vagi are in a normal state. This difference was, however, more marked in some cases than in others. We may therefore conclude that the drug stimulates in small ordinary doses the vagal centre in the medulla, thereby producing a slow full pulse, and that it has an effect on the peripheral ends of the vagus for the reason that when these nerves are cut, the pulse-rate only increases somewhat. That this failure of the pulse to become very rapid after vagal section is not due to

cardiac depression, is proved by the strong pulse-waves and the increase in arterial pressure, rather than a fall.

When a much larger dose (five c.c.) is given to a dog of twenty pounds weight, the primary slowing does not take place, but in its stead the pulse becomes very rapid with a fall of arterial pressure which, however, soon recovers itself, the pulse still remaining rapid. Under these circumstances it was found that galvanizing the vagus nerves, even for as long as one minute and a half, failed to produce any cardiac slowing, proving palsy of peripheral vagi, and this was also proved by the fact that when the vagi were cut and their peripheral ends stimulated by small doses, large doses immediately produced a rapid rate, but no more than a momentary fall of arterial pressure, lasting perhaps twenty seconds and due simply to the sudden entrance of the drug into the heart *en masse*.

Arnica therefore slows the pulse in ordinary medicinal dose by stimulating the pneumogastrics both peripherally and centrally, increasing the fullness of each pulse-wave, and also slightly the arterial pressure. That the increased arterial pressure is chiefly due to increased work done by the heart is strongly indicated by the fact that in none of the experiments was arterial pressure influenced to any extent, by any dose, except when an enormous amount (5 c.c.) was injected rapidly into the jugular vein, when there was for the space of from ten to fifteen seconds a fall in pressure very evidently due to momentary heart-failure, as the pressure returned at once to normal as soon as the heart freed itself from the volume of the drug.

That the fluid extract used was pure I am confident since it was prepared by a reliable druggist especially for these experiments, and that no fallacy underlies the results of the experiments themselves seems proved by the fact that no less than seven tracings were taken from the carotid artery of as many different dogs, and in all cases the effects were the same.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

G. F. STROSG, M.D., SECRETARY.

MEETING, November 7, 1887, DR. INGALLS in the chair.

DR. H. F. VICKERY read a paper on

APPENDICITIS, WITH REPORT OF CASES.¹

DR. WHITTIER said: Dr. Vickery's timely paper presents very clearly and concisely, the main features of the subject—appendicitis and its results, and suggests important topics for discussion. I think there is great danger of perpetrating a double error in all these cases. An error of delay in reaching a diagnosis or a guide for treatment, and an error in postponing surgical procedures when the diagnosis of appendicitis and its result has been made.

I am familiar with a number of cases of reported recovery from this formidable malady, treated on the expectant plan. But I am also painfully aware of the very large number of valuable lives lost because the diagnosis was unwarrantably delayed, or because surgi-

¹ See page 39 of this number of the Journal.

cal aid was not secured by the attending physician. If we assign the proper value to the very important additions to our knowledge of the subject of appendicitis and its results, recently made, and the largest and best contribution is that admirable monograph of Professor Fitz on "Inflammation of the Vermiform Appendix." I think we must concede that there is but little excuse for any practitioner who delays forming an opinion until it is too late for his patient to have the benefit of the most advanced methods of treatment.

I look upon this subject from a "medical" point of view, and if in such cases the opinion is formed, and it should be reached early in the progress of the disease, that one is dealing with appendicitis, a quick appeal should be made for surgical aid, and because there are, to-day, in this community, a very considerable number of surgeons, of the highest attainments in skill, and knowledge of all that pertains to this branch of their art, whose familiarity with all the minute details of safe abdominal section, and abdominal exploration is so great and whose frequent practice of the best methods have been followed by so good results; I hold that a physician who fails to avail himself of their skill, is inexcusable. My conclusion is, therefore, early diagnosis and early operation.

Dr. H. R. STEDMAN referred to a case of remarkable interest, reported by Dr. George W. Gay, at a recent meeting of the Society,² as showing how late it was possible for laparotomy to be successfully performed in similar cases. It concerned a young man who had an attack of localized peritonitis, in the neighborhood of the right iliac fossa. Two months from the beginning of the trouble, after several days of case, he had a return of the pain in great intensity and began to vomit. Four days later he had grown steadily worse, the pain and restlessness had increased and hiccough set in. In short all the symptoms tended toward destruction. Laparotomy was accordingly performed and the intestines which were adherent to the parietes over a space of from four to five inches were separated with the fingers from all morbid attachment. The patient made a good recovery in six weeks.

Dr. Stedman thought the prophylactic treatment of recurrent attacks exceedingly important. The fact that many of these patients were left with peritoneal adhesions often accounted for subsequent attacks of pain and actual return of the disorder. Consequently, movement tending to shake up the contents of the abdomen and put a strain upon these new attachments was an element of danger. From his personal experience as well as that of other victims of inflammatory attacks of this sort, in the neighborhood of the caecum, riding in jolting conveyances for any but comparatively short distances was sure to be followed by such symptoms. He believed this to be sufficiently common to make it always advisable to caution patients who have once had an attack of appendicitis to take no long rides or drives for at least a year afterwards and then only in the easiest conveyances. Horseback exercise was especially hurtful, while on the other hand, quite active exercises or sports on foot in moderation, and riding in steam and horse-cars were, he thought, harmless. He had also known a return to be precipitated by protracted coughing.

Dr. SHERMAN inquired as to the possible influence

of heredity in this disease, and as to the mortality under the old expectant treatment.

Dr. VICKERY said he saw no reason to conclude that there was a possibility of hereditary influence. Statistics of mortality are wanting, but about thirty-three per cent. probably passed through all right. While the danger of fatal termination continues for at least two weeks under this, the expectant treatment, after the third day operative interference may be too late; by the third day is meant the third day from the attack of sudden pain, which denotes either the perforation of appendix or the lighting up of peritonitis. The inflammatory action has, of course, considerably antedated this.

Dr. BUNDY spoke of a case where currant-seeds were the offending bodies, and where the symptoms were decidedly those of typhoid, with relapse.

Dr. PAGE said that his experience had been that many cases get well by discharges through rectum.

Dr. F. B. HARRINGTON stated that the duty of the surgeon in a case of appendicitis in which both the rational and physical signs were present, is unquestionably to operate. By physical signs, I mean the evidence of a mass in the right iliac fossa or its immediate neighborhood.

Without such physical signs the diagnosis cannot be positive, although it may reach a considerable degree of certainty. When rational signs point to this condition, and the physical signs are absent, the surgeon is justified in delaying if the condition is not threatening. If the condition be very grave, and the patient going from bad to worse, with only an uncertain diagnosis of appendicitis, what should be done?

In a case recently referred to me by Dr. Whittier, in which it was impossible, owing to great distension, to make out any signs of appendicitis, and where he had advised that the only hope of recovery lay in operation, I found upon making an incision in the median line, and passing the hand to the right iliac fossa, that there existed a large abscess, the pus from which at once followed the removal of the hand. A counter-opening was made near the seat of the abscess, and the cavity thoroughly washed and drained.

The patient's pulse before the operation had been feeble, and varying from 140 upward. On coming out of ether she expressed herself as relieved, but she slowly sank, and died in six hours.

The operation, had it been performed a few days sooner, would probably have saved the patient's life.

In Dr. Vickery's case, the condition was very grave and threatening. The diagnosis was clear, but the only physical evidence was the small mass to be felt by the rectum. It seemed probable that this mass, not larger than an English walnut, was but a portion of a larger mass, which could not be felt by the abdomen, owing to the distension. An incision was made above Poupart's ligament, and the peritoneum followed down outside of the abdominal cavity, but no mass could be felt until the space between the external and internal iliacs was reached, when the same small mass could be felt through the incision, and with one finger in the rectum, could be grasped between the fingers. No pus was withdrawn by the aspirating needle. It did not seem best to open the abdominal cavity. Instead of following the track of the operation, the abscess developed, and at a later period opened into the rectum.

It seems to me that in these doubtful cases, where

² See Boston Medical and Surgical Journal, January 13, 1887.

the condition is extremely critical, it is best to make an exploratory operation.

Dr. J. S. GREENE accepted Dr. Whittier's remarks as applicable to cases where a diagnosis of perityphlitis is reasonably clear. He had lately had two cases of peritonitis suspected to be of typhlitic origin, in each of which the question of operation was duly considered and negatived.

One was a muscular, young Irish laborer, with rather high temperature, hurried breathing, diffused pain, and tympanitic distension, but without localized tenderness nor dullness. After five days, consulted with Dr. John Homans. Patient was removed by ambulance to Massachusetts General Hospital. He had peritoneal effusion and gradual absorption, and was discharged well after seven or eight weeks.

The other was an elderly, overworked man, with a history of one or more attacks of peritonitis several years previously. He was at home with abdominal pain on a Friday; attempted work on Saturday, jumping on and off his wagon, and this sealed his fate. Sunday he kept his bed, had diffused or not well-localized pain, moderate tympany, and slow pulse. No distinct dullness, but tenderness on palpation greatest at right iliac region. Consultation with Dr. Fildes on Tuesday, and operative interference negatived. Died Wednesday.

Autopsy by Dr. John Homans, 2d, showed general peritonitis and appendix sloughed and ruptured, fixed by old, firm adhesions to lateral wall of pelvis, below brim, and out of reach of any possible relief by operation, if such had been attempted.

Such cases, as to the question of operation, are in marked contrast with such a one, for example, as that of the boy, eleven years old, reported in Dr. Homans's series, where there was dullness on the right side, and where he (Dr. Greene) had appealed to Dr. Homans to operate within forty-eight hours after first seeing the case.

In reply to Dr. Webber's question whether lapse of time, exempt from recurrence after an attack of peritoneal inflammation, should weaken the inference or belief that the appendix had been the source of the trouble, Dr. Greene thought it should not.

In the fatal case just now mentioned, he had, in the absence of localized dullness, regarded the peritonitis several years earlier as a strong point in support of the presumptive diagnosis of appendicitis, afterwards confirmed by the autopsy.

Dr. M. H. RICHARDSON said that he was very much interested in this subject. He did not know to what conclusions the reader had come, not having been able to be present at the reading of the paper. He himself had come to the conclusion, after a somewhat limited experience, that an operation is demanded in many of these cases of inflammation in the region of the appendix. It seemed to him that in the majority of cases, the disease, if left to itself, is essentially extremely mild, or it runs a most violently fatal course. In the former class of cases, roughly speaking, the patient has little constitutional disturbance, and consults a physician only after the appearance of a tumor in the right iliac fossa. In the other class the inflammation takes a violent form from the onset, and a general peritonitis may occur in the first days of the disease. It is in these cases that operative interference is the most imperative, and the prognosis the most grave. The early distension of the intestines

makes a diagnosis from physical examination almost impossible, and the surgeon is obliged to do a laparotomy on the strength of his diagnosis formed from the history of the case.

In all cases where there is a tumor in the region of the appendix, there is no question as to the advisability of interference. In the more formidable class of cases there should also be no question, because, in the presence of a general peritonitis, there is nothing to be lost by an exploratory laparotomy, and everything to be gained.

The speaker had seen, during the past year, six cases of appendicitis. Five had recovered, and one had died. Two belonged to the class of formidable cases, two were of the mildest type, and two others were of moderate severity. In the last two cases there was a cake in the right iliac fossa, with very moderate constitutional disturbance. He saw them both in the second week of the disease. Both recovered perfectly without operation. The diagnosis was quite positive in both, being based upon the existence of pain, constitutional symptoms, and physical evidence in the region of the appendix. He should not now advise any operative interference in a similar case, but should have it watched with the greatest care, ready at any moment to meet a possible complication by surgical measures.

Two other cases presented a tumor in the right iliac fossa. In neither were there any constitutional signs of any moment. He evacuated the abscess-cavity in both by an incision parallel to Poupart's ligament—the incision for ligating the common iliac.

The other two cases were of the "foudroyant" variety. The first died the third or fourth day in a sudden collapse, before the question of operation had been presented to him. The other he saw with Dr. Elliott and Dr. Fitz. In this case, the disease, which seemed to be pursuing a steady and rapidly fatal course, was checked immediately by a laparotomy performed by Dr. Elliot. In this case, a brilliant success followed a most difficult operation. The diagnosis of appendicitis with general peritonitis was shown to be correct, and a large amount of fetid pus was evacuated, with almost immediate relief.

Dr. Richardson thought that it was in cases like the last, which he had taken the liberty to refer to, that all the judgment and courage of the surgeon must be brought to bear. He did not believe that the expectant treatment should ever be employed with such cases. It seemed to him true, however, that many such operations would prove unsuccessful. In cases like the fatal one alluded to, in which, at the autopsy, it was found that nothing could have been done beyond draining the peritoneal cavity for a septic peritonitis—an operation almost invariably unsuccessful in the hands of other surgeons, and wholly so in the experience of the speaker—in such cases we can, at least, give the patient a chance, and we do not leave him to die without an effort on our part to prevent such a catastrophe.

— We are assured, on the authority of an esteemed French contemporary, which publishes the item as a matter possibly worthy of imitation by enterprising French physicians, that a doctor in Australia puts the following notice in the papers: "Je paierai la moitié des frais d'enterrement dans le cas où je ne réussirais pas!"

NEW YORK COUNTY MEDICAL ASSOCIATION.

STATED MEETING December 19, 1887.

DR. J. LEWIS SMITH read a paper on

PRESENT OPINIONS REGARDING THE PATHOLOGY AND TREATMENT OF DIPHTHERIA.

No disease in modern times, he said, had attracted more attention than diphtheria, since it was highly contagious and very fatal, was permanently established in many of the large cities in both hemispheres, and occurred every year epidemically in numerous rural localities. The result of the investigations in regard to the etiology of the disease had been to establish its microbic origin, but the microbe which was its specific principle was not clearly ascertained. Loewler, one of the most eminent authorities on the subject, had found that every diphtheritic patch contained many species of bacteria, which had been cultivated, but as they had not been isolated, the specific germ of the disease had not been determined. Another microbe, observed by Loewler, and described by Klebs in 1883, merited special attention. In some typical cases of diphtheria it was true, Loewler had not found it, but he suggested that it might possibly have died and been eliminated before the death of the patient. The bacilli was found in the exudate of thirteen cases, and cultures to the twenty-fifth generation inoculated in Guinea-pigs and birds produced a whitish exudation at the point of inoculation. The researches of Loewler and Cheyne lend support to the views expressed by Wood and Forman in their able report made to the United States Board of Health in 1882, who arrived at the conclusion that the two organisms, *micrococcus septicus* and *micrococcus diphtheriticus*, are specifically one, and that "diphtheria is a septic sore-throat, or is what was called a century ago putrid sore-throat, with or without a secondary constitutional septicæmia."

That the bacillus was therefore the causative agent of diphtheria was rendered probable, and that systemic infection by the diphtheritic poison was not produced directly by the entrance of the microbe into the circulation, but by ptomaines which had sprung into existence through the agency of the microbe, was also the opinion of some of the highest authorities in bacteriology. It was seen that the investigations referred to lent support to the theory that diphtheria is primarily a local disease, and that in certain mild cases it never becomes constitutional, or is constitutional only in a very feeble degree. Nevertheless, those who believed that diphtheria was primarily constitutional based their opinion on facts which lent strong support to their theory, such as the incubation period of six or seven days in certain cases, the early occurrence of nephritis (even in twenty-four hours in malignant cases), and the existence of very severe and often fatal nephritis in certain cases where the disease of the mucous surface had been so trivial as to be scarcely appreciable. The mooted subject whether diphtheria is primarily local, or is primarily constitutional with local manifestations, or whether its nature in this respect varies in different instances, must, therefore, be considered as still undetermined.

As to the propagation of diphtheria, the statistics of Dr. C. W. Earle, of Chicago, showed that the disease was as severe and fatal in salubrious localities in the newly settled and mountainous states and territories of the Northwest, when it happened to be intro-

duced, as in the foul air of large cities, though dampness and decomposing animal and vegetable substances in rural localities as in cities, increased the prevalence of the disease. His statistics also showed that diphtheria may be communicated long distances by railways and probably by merchandise, and they demonstrated its extreme contagiousness from person to person. In the cities there was abundant and melancholy proof of the causative relation of foul air, whether arising from the sewers or from stagnant filth, to diphtheria, and Dr. Sternburg, in his recent valuable Lomb prize essay, had given the opinion (which seemed to be borne out by observations relating to the etiology of diphtheria), that the diphtheria germ, once deposited in damp and foul places, is probably propagated independently of the sick. Thus, in New York city prior to 1850, although foul sewers and insanitary conditions existed, there was no diphtheria; but in the decade following 1850 diphtheria was introduced, its germ made its way into the sewers, where in the fifth underground it found a nidus for its propagation, and now whenever sewer-gas escaped into the domiciles of this city it was laden with the germs of this disease.

The amazing vitality and power of propagation of the diphtheritic germ were apparent when we reflected that it had permanently infected the filthy-flowing current of the sewers in every part of a great city, sewers which in their ramifications extended hundreds of miles. It was chiefly by the exposure of children to the sewer-gas, carrying with it the diphtheritic germ, which ascended from this widely-extending underground culture bed, and to walking cases of diphtheria, often so mild that there was little or no complaint of the throat or impairment of the general health, that the disease was so prevalent. In Dr. Smith's opinion the germ of diphtheria was of such a nature, and quickly became so established in a sewered city, that it could never be "stamped out," as cholera or yellow fever might be, by the active measures of health boards, or by legislative enactments, although these might doubtless do much in the way of protection.

He alluded incidentally to the possible communication of diphtheria to man from animals, and stated that recent investigations went to show that it might be thus communicated from poultry, and especially from pigeons, which birds, both wild and tame, were subject to the disease.

Having referred in detail to the differential diagnosis of diphtheria, and urged the desirability of enforcing the same precautionary measures in all doubtful cases as in unquestioned diphtheritic disease.

Dr. Smith spoke of the area of contagiousness in diphtheria, Dr. Lancy, he said, had cited cases to show that this area was small, being limited to a few feet. Dumez stated that, in a school in which the boys and girls in the same hall were separated by an open space of four yards width, diphtheria prevailed among the girls but did not affect the boys. Other instances were also mentioned showing that the area of contagiousness, like that of scarlet fever, was within narrow limits, and was, therefore, unlike that of pertussis and measles. The latter diseases, when they entered a domicile or asylum, usually affected all the unprotected children. Dr. A. V. Meigs, of Philadelphia, in his interesting paper published last year, on the propagation of the common infectious diseases of childhood, placed diphtheria with scarlet fever and ty-

phoid fever in one group. Diseases in this group, he said, seemed to be more subject to endemic or local influences than were measles and pertussis, not spreading over wide communities like the latter, and hence by strict quarantine and preventive measures their wide extension was more easily prevented. Those who had carefully studied the infectious diseases in children's institutions and elsewhere, would recognize the truthfulness of this distinction.

In speaking of the preventive treatment of diphtheria, Dr. Smith said that Dumas had recommended iodine as a prophylactic, giving to exposed children, in the course of twenty-four hours, a four-ounce mixture containing eight drops of tincture of iodide, and ten centigrammes (1.34 grains) of iodide of potassium. The most effective method of preventing diphtheria, however, was the isolation and disinfection of the apartments, in addition to preventing the inhalation of noxious gases wherever an outbreak of the disease had occurred.

Dr. H. B. Baker, of Lansing, Mich., had published statistics showing that in one hundred and two outbreaks of diphtheria the average number of cases where disinfection and isolation (either one or both), were neglected was sixteen, and the average number of deaths 3.23; while in one hundred and sixteen outbreaks in which isolation and disinfection were enforced the average number of cases per outbreak were 2.86, and of deaths .66. These precautionary measures, therefore, prevented thirteen cases and 2.57 deaths for each outbreak, or, in the total, 1,545 cases and 298 deaths in the year.

TREATMENT OF DIPHTHERIA.

The proper treatment of diphtheria was far from being determined; and a chief reason why there was such a difference of opinion in regard to the value of remedies, was because the disease varied greatly in severity in different localities, and at different times. In some epidemics a large majority recovered, whatever the treatment, (and even with injurious treatment), while in others a large proportion perished under the best possible remedial measures; so that statistics were misleading as to the value of therapeutic agents. In the year 1882, Dr. Lunin met with the following results from different remedies employed at the hospital of Oldenberg. In the fibrinous form of the disease the percentage of deaths under the various modes of treatment, was as follows:

By turpentine	8.30 per cent.
By resorcin	26.00 "
By bichloride of mercury	30.24 "
By ehuioline	31.60 "
By tincture of chloride of iron	32.60 "
By bromine	45.70 "

In the septic form the deaths were as follows:

By tincture of chloride of iron	76.5 per cent.
By turpentine	81.0 "
By bromine	88.9 "
By resorcin	89.5 "
By bichloride of mercury	92.5 "
By ehuioline	100.0 "

According to Lunin's observations, therefore, in the fibrinous form temperature was the most useful therapeutic agent; but in the phlegmonous and septic form, the chloride of iron was the most efficient. The cases of fibrinous diphtheria numbered 142, with 43 deaths; of the phlegmonous and septic form, 122 cases, with 103 deaths. In all the cases treated in the Oldenburg hospital, aggregating 296, 164 were fatal. After having spoken of the value of tincture

of chloride of iron, as observed by various writers, Dr. Smith took up the consideration of bichloride of mercury, which he said was at the present time regarded by many physicians as the most efficient agent at our command in the treatment of diphtheria. It was the most active and certain of the germicides employed in medicine, whether used locally or internally, and its use in diphtheria rested upon the fact that it quickly destroyed all micro-organisms. It was evident, however, that when this agent was employed as a spray in as strong a solution as was recommended by some, that it should be used with very great caution; and this was all the more necessary, of course, when the remedy was being given internally at the same time.

Dr. E. N. Oatman, of Nyack, New York, had reported that he lost but one patient out of twenty-three, when employing the following local treatment. Cotton is firmly wound around the end of a stick about the size of an ordinary lead-pencil; being drawn out as it is wound, and made to project beyond the end. This is dipped into a solution of bichloride of mercury two grains to the pint (1 to 3,840), and "passed into the throat until it touches the posterior wall of the pharynx. It is then instantly withdrawn and burnt." This treatment is repeated hourly, with a new swab each time, until the inflammation begins to subside, usually in forty-eight hours. Dr. Smith thought that the quantity of bichloride which could be safely given in twenty-four hours to children of various ages, was about as follows:

To a child of two years	one-sixth grain.
" " four "	one-fourth grain.
" " six "	one-third grain.
" " ten "	one-half grain.

Turpentine had been highly recommended recently by physicians of experience for its prompt action, when used locally as well as internally, in arresting the formation and extension of the pseudo-membrane, and as an antidote to the diphtheritic virus. Dr. Rewentaler had reported that an infant of two years, treated by other remedies, began on the fourth day to have symptoms indicating invasion of the larynx. Tracheotomy was resolved upon; but previous trial was made of pure turpentine in a teaspoonful dose. The result was that the croupiness ceased, the other symptoms improved, and the child recovered without tracheotomy. Delteil, by the alleged success of his fumigation treatment, appeared to have been the first to draw attention to the use of turpentine in this disease. His treatment was as follows: A mixture of 1 kilogramme (2 pounds) of coal tar, 8 tablespoonfuls of turpentine, 8 grammes (2 drachms) of resin of benzoin, and 100 grammes ($3\frac{1}{2}$ ounces) of cajaput oil; or a mixture of 200 grammes (7 ounces) of coal tar, 80 grammes (2 ounces, 6 drachms,) of turpentine; or turpentine alone, was constantly burnt in the sick room. The vapors arising from the burning mixture were tolerated by the patient and did not give rise to vomiting; while they appeared to aid in arresting the diphtheritic process. Schenker modified Delteil's treatment as follows: A mixture was prepared of 200 grammes (6 ounces) of coal tar, and 80 grammes (2 ounces, 6 drachms,) of turpentine; and of this, 50 grammes ($1\frac{1}{2}$ ounces) was vaporized at the bed-side four times a day, each use of the vapor occupying half-an-hour. His observations had led him to believe that the benefit from this treatment accrued chiefly from

the turpentine, and largely from its general effect upon the system. He therefore employed turpentine internally, in doses of 10 minims to one teaspoonful given from one to three times a day, in milk, sugar water, or gruel. At the same time he employed it as a spray. He also used alcoholic stimulation; and of 36 cases treated by the turpentine, 31 recovered. Röse, of Hamburg, treated 58 cases of diphtheria with turpentine, with the result of 35 per cent. recoveries. He gave it three times a day in teaspoonful doses, mixed with spirits of ether (ether 1 part, alcohol 3 parts), and also gave a teaspoonful of a 2 per cent. solution of salicylate of sodium every two hours. He used the turpentine cautiously in anæmic cases, and in those with feeble heart-action. Sigel stated that turpentine, in tablespoonful doses, reduced the temperature in 17 cases, in 14 of which the symptoms were so severe that the question of tracheotomy arose; but was postponed by the beneficial effect of the turpentine. Of the whole number of cases treated by him, with turpentine, 87, death occurred in 14.9 per cent.; while in those treated with bichloride of mercury, salicylic acid, potassium chlorate, etc., 32.5 per cent. died.

Sodium benzoate was another agent which had attracted considerable attention. Blondel had reported two hundred consecutive cases treated with it, without the loss of a single patient. He gave every hour one teaspoonful of a solution containing 15 grains of the benzoate to the ounce, together with one-sixth of a grain of sulphide of calcium in solution or granuli; and the throat was sprayed every half-hour with a 10 per cent. solution of the benzoate. At the same time the room was kept constantly filled with steam from a vessel containing carbolic acid, turpentine and oil of eucalyptus. Dr. I. N. Love recommended the sodium benzoate in 5, 10, or 15 grain doses, and, given in syrup, and cinnamon water, the solution was not unpleasant to take. Letzerich, Graham, Brown and Sanné, from experiments made on animals, considered this agent as a specific against the virus of diphtheria; while Dumas, who had not derived benefit from it in the actual treatment of the disease, proposed, as had been mentioned, that it should be utilized as a preventive.

Renou had had considerable success with the following method of treatment: To water constantly boiling, a teaspoonful of an alcoholic solution of carbolic acid, salicylic acid and benzoic acid is now and then added; so that in twenty-four hours 10 drachms (40 grammes) of carbolic acid, 2 drachms (8 grammes) of salicylic acid, and 4 drachms (16 grammes) of benzoic acid are employed. The quantity may be increased if the size of the room, the age of the patient, or the severity of the attack seem to require it. No local treatment apart from the inhalation, is resorted to; but constitutional treatment and sustaining measures are employed to the fullest extent. Barbet had used Renou's treatment for three years with much success. In 51 cases thus treated, 48 recovered. His method is to place in a petroleum stove an earthen pot full of boiling water, into which is put a tablespoonful of Renou's liquid every three hours for children between the ages of one and ten years.

Dr. Smith spoke in strong condemnation of the use of pilocarpine (which had been highly lauded by some authorities), on account of the disastrous results liable to be produced by it. He said he had seen it cause

symptoms resembling those in extreme œdema of the lungs.

In speaking of calomel, he quoted the favorable opinions regarding it expressed by Drs. George B. Fowler, William H. Daly, H. C. Wood, and others; but said that the experience of most physicians in New York who had tried it had been unsatisfactory.

Having referred briefly to treatment by quinine and by copaiba and cubebs, he passed on to chlorate of potassium; and having presented the views of various authorities in regard to it, gave the following prescription, which, he said, had been long and favorably known in New York, and was probably more frequently written, with some variations in its proportions, than any other in diphtheria:

R	Tinct. ferri chlor.	. . . . .	f 3 ii-ij.
	Potass. chlorat.	. . . . .	3 j.
	Acid. muriat. dilut.	. . . . .	gtt. x.
	Syr. simplicis	. . . . .	f 3 iv.

Dose, one teaspoonful every one or two hours.

The tendency, however, had been in late years to diminish the amount of potassium chlorate, or even to omit it altogether, from its known irritating action on the kidneys, which are so prone to inflammation in this disease; and he thought it should probably be always omitted if any albumen appeared in the urine.

Dr. Smith mentioned, in passing, the use of bromine and permanganate of potassium, and the styptic treatment by the local application of Monsel's solution, and then spoke of papayotin in diphtheria. Rossbach had used this agent in a solution of the strength of one to twenty, frequently applied to the fauces. In very young children, a few minims might be placed on the tongue every five minutes. Dr. A. Jacobi stated that papayotin digests a thousand or two thousand parts (according to others, two hundred parts) of moistened fibrin, while not injurious to the mucous membrane. Dr. Jacobi had at one time lost confidence in its efficiency, but afterwards had reason to believe that the specimen employed was impure. More recently, he had found the drug to act well, and stated that diphtheritic membranes were dissolved in a few hours, in a few cases, after a day only. He employed a mixture of one part of papayotin, two parts of glycerine, and two parts of water.

Dr. Smith spoke favorably, also, of the solvent action of trypsin, which, like that of lime-water (by itself, of very feeble solvent power), was increased by being used in connection with an alkali. He suggested the following formula for a spray:

R	Sodii benzoat.	. . . . .	3 i-ij.
	Sodii bicarb.	. . . . .	3 j-ij.
	Trypsin.	. . . . .	3 j.
	Ol. eucalypti	. . . . .	1 3 j.
	Liq. calcis	. . . . .	oj.

M.

DR. C. A. LEALE said that after intubation of the larynx, as well as tracheotomy, one great cause of trouble complained of by operators was the difficulty of feeding the patient. To obviate this drawback, he had been in the habit of resorting to a very simple, and yet very efficient, method of introducing food, which, he thought, ought to be more generally known. This was by means of a Tiemann flexible-rubber, velvet-eyed catheter, No. 8, which could be readily passed through the nose, and then down into the stomach, even when the tube was in position. Then, with an ordinary syringe, liquid food of any variety could also be employed during unconsciousness, in

convulsions, etc., and, on account of its simplicity and easy application, it was desirable that it should be understood by all.

DR. FREDERIC S. DENNIS read a paper on

SELECTED CASES OF SARCOMA IN BONE, WITH PRESENTATION OF SPECIMENS AND MICROSCOPICAL SECTIONS.

This, he said, was more fatal than any other variety of malignant growth, and unless a radical operation were performed (which was successful in only a limited number of cases), death was absolutely certain to result from it. Rapidity of growth was also a marked characteristic. He had met with over fifty cases of sarcoma in bone altogether. Of these, the disease was situated in the lower extremities in fifteen, and it was to these fifteen cases that he desired to direct attention on this occasion; reserving a consideration of the cases in which it occurred in the upper extremities and other portions of the body until some future time. Having made some general remarks upon tumors and their classification, he stated that traumatism seemed to have a decided agency in the causation of sarcoma in bone. All sarcomata of long bones, he went on to say, might be divided, clinically and pathologically, into two groups—subperiosteal and central. The subperiosteal form of the disease attacked the extremities, and the central form the shaft of the bone; and the former was considerably more rapid in its growth than the latter. Egg-shell crepitation was characteristic of the central variety, but was not present in the subperiosteal. In speaking of the differential diagnosis of sarcoma from inflammatory neoplasms and carcinoma, he said that the former was a disease of early life, and was characterized by widespread metastases.

Dr. Dennis then proceeded to give the details of a number of his fifteen cases, calling attention to the special points of interest in each. The first case was one in which the sarcoma ensued upon fracture of the femur. The patient would not consent to an operation until the disease had reached an advanced stage, and when amputation was performed at the hip-joint he never rallied.

In the second case, in which the growth was also located in the femur, amputation at the hip-joint, performed within five months of the first appearance of the disease was followed by recovery. The prospect of final recovery, however, was still very doubtful, as three years was the shortest period at which such a patient could be pronounced free from the danger of relapse; and but a short time had as yet elapsed since the operation in this instance.

In the third case, in which sarcoma attacked the fibula as the result of an injury while skating on roller-skates, five years had now elapsed since the amputation, and it was certain that there would be no return of the disease.

In two other cases of sarcoma of the fibula (both subperiosteal), death resulted, and one of these, occurring in a female, was of exceptional interest, on account of the complete arrest of the disease during pregnancy, and its unusually rapid growth afterwards. After supra-condyloid amputation of the thigh, the disease recurred in the lower jaw, and three months after this had been removed it reappeared in the upper jaw. Still later, it made its appearance in the clavicle, and finally, in the lungs, when death resulted.

The early performance of a radical operation was the only safety in this disease, and Dr. Dennis said that he could not recall a single instance in which there had been a local recurrence of the growth.

Among the points to which he directed special attention in concluding his paper, were the following:

- (1) The importance of an early diagnosis.
- (2) The importance of complete removal of the disease by amputation of the part in which it is situated, and not by enucleation of the tumor.
- (3) The importance of carefully watching the subsequent history of the case.
- (4) The importance of recording all such cases coming under observation, together with the microscopical appearances of the growth.
- (5) The importance, in collecting statistics of this disease, of discarding all cases in which the microscopical appearances are not fully recorded.

Recent Literature.

The Curability of Insanity: A Series of Studies by PLINY EARLE, A.M., M.D. Philadelphia: J. B. Lippincott Co. 1887. pp. 232.

Thurnam's statistics of forty years ago of the curability of insanity have become classic. Nevertheless his investigations were practically without influence in reforming the methods of calculating and reporting recoveries, until in 1876, Earle took up the same line of inquiry. Thurnam was the first to tabulate *persons* and *cases* separately, and thus to clearly set forth the disparity between the number of admissions and recoveries and the number of individuals which they represented. He demonstrated conclusively the superiority of the method of computing the proportion of recoveries by the number admitted instead of by the number discharged. He also investigated with a thoroughness which his exceptional facilities alone made possible, the history as regarded permanency of recovery of two hundred and thirty-nine patients subsequent to their discharge from the York Retreat. The only other notable investigation in this line, is that of Mitchell in 1877. It was confined to tracing the mental condition of all patients in Scottish asylums during a certain period, twelve years after their discharge, as recovered. It is, by the way, somewhat remarkable that these three, prominent and reliable investigators of the curability of insanity, drawing their statistics from widely different sources, should reach practically the same estimate of the proportion of permanent recoveries. This is best expressed in Thurnam's celebrated formula, as quoted by Earle (p. 60): "In round numbers of ten persons attacked by insanity, five recover and five die sooner or later during the attack. Of the five who recover, not more than two remain well during the rest of their lives. The other three sustain subsequent attacks during which at least two of them die."

Comparing Thurnam's work with that of Earle we find that the latter emphasizes the same points, uses the same methods and reaches the same statistical results. Nevertheless, he has aroused such extended and effective interest as to bring about a decided reform in this class of statistical inquiry. Those acquainted with recent progress in matters of lunacy

will accept without question the author's statement in his preface, that the studies which the book comprises have greatly modified the aspect of insanity as a curable mental condition in the view of a large proportion of the persons most interested in the subject, have stimulated the search for other methods for the custody and care of a large part of the insane than that of collecting them in expensive and unwieldy institutions and have caused very important changes in the statistical methods of Massachusetts, in this country and in Great Britain, whereby the reader is informed of the number of *persons* as well as the number of *cases* that recover.

The secret of Earle's success is not far to seek for, although he takes the same direction as his predecessors, making their common position impregnable by his own accurate and varied tables of statistics; he goes farther, and not content with the mathematics of his subject, with the cold facts of figures, employs argument equally well fortified by examples from many sources, bristling with ridicule and driven home by constant repetition. It is his indefatigable zeal in exposing year after year in this fashion, in the reports his book comprises, false statistics of the curability of insanity wherever found, which has done the work. He condemns in vigorous style the spurious "recoveries from insanity" drawn from those cases of delirium tremens, of "alcoholic mania," who are simply drunkards suffering from the effects of debauch that have become sober. Under the head of "cooked statistics" he classes what might be called paper cures reported by political superintendents for the purpose of making cheap notoriety through the secular press. The delicate subject of the temperament of different reporters in influencing the number of recoveries, another element of error, he handles fearlessly but discreetly. Finally, the vast difference existing between the number of *persons* and *cases*, and its value in diminishing the number of recoveries — the burden of his whole argument — he presents most forcibly, giving for example detailed accounts of three women who contributed one hundred and two recoveries to the published statistics of insanity.

The outlook for the insane, as these investigations teach, is indeed a melancholy one. Nevertheless, with the heartiest appreciation of the solid worth of the author's work in establishing our knowledge of the curability of insanity on an accurate and scientific basis we can but admit that the tone of the book is needlessly discouraging. It is true that the writer's chief quest is the number of absolute cures or permanent recoveries, but the scope of his work does not, we think, preclude a fuller consideration of the value of recoveries from separate attacks than is accorded it. Even Thurnam, whose work he could claim with Earle, was "not a well-digested logically-constructed monograph," felt it necessary for the sake of accuracy to add that although the picture was an unfavorable one it was far from justifying the popular prejudice that insanity is practically an incurable disease, and that the view it presented was much modified by the long interval which frequently occurred between the attacks, during which interval of mental health (in many cases of two to twenty years), the individual had lived in all the enjoyments of social life. We miss, also, some allusion to a fact noted by Blandford, among others, that statistics of this class refer to patients who have required asylum treatment,

and thus a number of cases of the most curable kind are omitted from the calculation. Another factor, though a small one, is the number of patients whose chances of recovery have been prevented by asylum treatment. Statistics on these points are, to be sure, well-nigh inaccessible, but the facts are unquestionable, and deserve to be mentioned and duly weighed, however little they may turn the scale, however unfortunate may be the deplorable tendency (which, by the way, the author believes to be still a growing one), of neglecting to send the bulk of the insane to asylums early in the disease, thereby increasing their chances of recovery.

These flaws, although legitimate subjects of criticism, are nevertheless negative faults and with certain defects of manner, such as much and wearisome repetition, make but a small blemish upon a contribution of great and lasting value.

The Surgeon's Pocket-Book. An Essay on the best Treatment of Wounded in War. By SURGEON-MAJOR J. A. PORTER. Revised and edited by C. H. Y. GODWIN. Third edition. 258 pp. 124 illustrations. P. Blakiston, Son & Co. 1887.

The above, as its title declares, is a hand-book for the military surgeon, rather than for a civil practitioner; but, notwithstanding this, it contains many facts which will be of interest to the latter, and, on occasions of emergency, of the greatest service to him.

The first edition (1875) was written by the author from data obtained by personal experience during the Crimean Campaign, the Indian Mutiny, and the Franco-Prussian War, to contest for the prize offered by the German Empress for the best essay on the practical treatment of wounded soldiers. It was this same contest that called forth the now world-renowned work of Eschmarch. Although less successful, the "Surgeon's Pocket-Book" was of a character to receive a prize from such judges as Billroth, Von Langenbeck, and Socin.

In addition to the above, the fact that it has reached a third edition is strong proof of its value and popularity. It represents an attempt to furnish a manual which shall give in the most concise and easily accessible form the knowledge required by a military surgeon, including all the advantages and improvements derived from modern experience and the latest campaigns of the English army. It is published in a very compact, neat volume of 258 well-filled pages, abundantly illustrated; the first twenty-four of which are devoted to the method of organization and equipment of a surgical corps, transportation of wounded, field hospitals, and the duties of a military surgeon, both in the field, with troops in action, or on hospital duty. The main portion of the book consists of a description of those injuries from projectiles or weapons used in modern warfare to which a soldier is exposed, classified according to the region of the body in which such wounds may occur. When necessary, the means of diagnosis are given, and the appropriate treatment. The details of amputations, excisions, and ligation of arteries are described in separate chapters. After discussing the complications liable to accompany such injuries; namely, erysipelas, hospital gangrene, phlebitis, pyæmia, osteomyelitis, etc., the remainder of the essay is devoted to a description of the sanitary condition and medical management of troops, both in camp and on the march; instruction about location of

tents, barracks, and latrines, ventilation, water, methods of testing its purity and filtration, etc. In four appendices is given a formulary for antiseptic solutions, unguents, etc., lists of materials for surgical dressings and necessary drugs, with directions for the most convenient way of packing for transportation and for their use. Finally, a list of supplies copied from that used on the Nile expedition during the late Egyptian campaign, giving the equipment of twelve men for one hundred days. The book is well written, and contains much information on subjects usually omitted in such hand-books, and, although treatment and methods of operation (though good) may not be in all respects what is now considered the most approved, still the remainder of the essay is alone enough to make it a work of interest and value to every one liable to be called to fulfil the duties of a military medical officer, or of an analogous position.

Health Lessons. A Primary Book. By JEROME WALKER, M.D. pp. 194. New York: D. Appleton & Co. 1887.

Among the numerous publications relating to elementary hygiene, which have recently appeared, this is one of the best. The author says in his preface: "In this little book the aim has been to teach health-subjects to young children in a truthful and interesting way, and by somewhat different methods than those usually employed." Dr. Walker has succeeded in presenting the subject of hygiene in a manner both intelligible and entertaining. Technicalities are almost entirely excluded, so that the youngest children may readily comprehend the subjects presented.

The illustrations form a very attractive feature of the book: they are all new and original, and show a marked improvement over the hackneyed wood-cuts of older books of the same sort. Comparative anatomy is occasionally called in to aid the young learner.

As an example, an illustration upon page 129, intended to teach the uses of the bones, shows in one picture a man, a horse, a turtle, a tree in foliage, and a house. In another picture on the same page are presented the skeletons of a man, a horse, a turtle, a tree in winter with bare branches, and the frame-work of a house.

With reference to the alcohol question, the author says, "While there is special teaching as to the effects of alcoholic stimulants and of narcotics upon the human system, they are presented in such a way, in connection with other subjects, as is believed will appeal most forcibly to the imagination and the reasoning powers of children, and leave the strongest impressions upon the mind as to the evils attending the use of these things."

The experiment has been tried in the Lahor district, India, during last year, of vaccinating from a young buffalo instead of from a calf, and the results were in every way satisfactory. What led to the experiment being made was the prejudice of the Hindus against being vaccinated from the young of the sacred cow, while, on the other hand, the standing objection of the people to allowing the lymph to be taken from the arms of their children rendered it almost impossible to obtain an adequate supply of lymph.

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REPORT OF THE SURGEON-GENERAL.

THE report of the Surgeon-General of the United States Army for the year ending June 30, 1887, is an exceedingly interesting document, and in no part more interesting than in the pages devoted to the hygiene of the army. An important part of the duty of a medical officer is the supervision, under the direction of his immediate commander, of the hygiene of the post to which he is attached, and the recommendation of such measures as he may deem necessary to prevent or diminish disease among the troops. Army regulations now provide that he shall examine, at least once a month, the sanitary condition of all buildings belonging to the post, the rations, the water supply, the drainage, the clothing and the habits of the men, and shall report thereon to the commanding officer with such recommendations as he may deem proper. A copy of each report, with the action of the commanding officer thereon, is forwarded to the surgeon-general.

In regard to these reports the surgeon-general says: "By far the greater portion of the sanitary measures recommended were carefully considered, practical, and capable of being easily carried into effect with the means at command, and it is gratifying to note, the medical officers as a rule received the cordial support and co-operation of their immediate commanders in their efforts to increase the health and comfort of the commands to which they were attached." The want of such co-operation between commanding officers and their medical subordinates was at times a source of ill health among the troops during the war, and that these efforts have been attended with a large measure of success is evidenced by the diminished rates of sickness and mortality in the army for the year 1886, as compared with previous years.

The care with which some of these recommendations were made is shown by the copious extracts given. The fullest reports given are on the subject of the clothing furnished the troops serving in the southern portions of the country. Medical Director

E. P. Vollum, in endorsing the recommendation of Assistant Surgeon Carter, post surgeon at Fort Ringgold, Texas, states that the United States stands alone in the measure of forcing its troops to wear the same uniform during all seasons and in all latitudes; and in the twenty-four degrees embraced within the boundaries of our country there are some places as hot as any occupied by white troops anywhere in the world. In this tardiness in adapting the clothing of our troops to the climate, we stand about where the English did in the first days of their occupancy of India.

Where troops along the southern border are allowed to dress somewhat according to the suggestions of their instinct, and the necessities of the climate as found out by experience, which is sometimes done on scouting trips, they throw off their woollen uniforms, and use any light garment they can find. Officers who were on the campaign in Arizona and Sonora, that was made against Geronimo's band, report that the infantry marched most of the way in drawers and undershirts, and that after the men once experienced the luxury of wearing these light garments they never put on the blue woollen trousers again till their return home.

The medical public will agree most heartily with the Surgeon-General in his statement in regard to the index-catalogue: "The usefulness of this work to the medical writers and teachers, not only of the United States but of other countries, can hardly be over-estimated, and it is very desirable that it should be completed as rapidly as possible." The first part of Volume IX is already in press.

A portion of the new museum and library building is already occupied, so that the most important part of the pension records, and of the library, have been made secure from fire. The museum has been enriched by the plaster casts and bony preparations of the late Prof. F. H. Hamilton, of New York. It is to be hoped that the recommendation made in the last report, and renewed this year, that authority be given for the publication of an illustrated catalogue of the museum will be granted.

The number of medical officers permanently disabled is becoming a matter of serious embarrassment to the department, and an increase of twenty assistant surgeons is recommended.

A MILITIA AMBULANCE CORPS FOR NEW YORK.

A RECENT general order, issued from the office of the Adjutant-General of the New York National Guard, provides for the establishment of an ambulance corps modelled upon the corps recently established in the regular army. For a regiment or battalion the corps will consist of the hospital steward, and three enlisted men from each company of seventy-five men, and two enlisted men from each company of less than that number, and two corporals may be included in the detail. The men are to be detailed on

the recommendation of the senior medical officer, and shall be relieved from such duty on the application of the medical officer having charge of the corps to which they are attached. The men are not relieved from regular duties except when on duty with the corps in active service. The corps is to be under the immediate orders, control and instruction of the senior medical officer of the command to which it belongs.

An annual course of instruction to be given by the medical officers includes rudimentary instruction in the diagnosis and treatment of the common accidents and diseases to which the militia are exposed, stretcher drill, and matters pertaining to the transportation of the wounded, personal and camp hygiene. At the close of the course of instruction the men are to be examined by a board appointed by the commander of the brigade with the approval of the surgeon-general. After passing the examination enlisted men will be permitted to wear at all times a badge distinctive of the ambulance corps of the state. When actually on duty men of the corps will wear an arm badge (brassard) of white cloth with the red cross.

The New York organization differs from that of Massachusetts in attaching the corps to the regiment rather than to the brigade, and in detailing men previously enlisted, rather than enlisting men specially for the corps.

Each method recognizes the necessity of a special training for the duties of stretcher bearers, and each ought to give good results. With the system established in the regular army and in the militia of two States, other States ought soon to follow the example.

The JOURNAL watches with pride the establishment of these various ambulance corps, which has followed its suggestion of September 25, 1884.

CIRCULAR INSANITY.

THERE is a kind of mental alienation which, although its existence has impressed itself on medical literature from ancient times, has only within the last thirty-four years obtained, as it were, the right of domain in the nosology of diseases of the mind. This form of insanity goes by the name of *folie à double forme*, "circular insanity" or "alternating insanity."

In January, 1851, a memoir was read before the Academy of Medicine, Paris, by M. Baillarger, with the following title: "Note Concerning a Kind of Madness whose Paroxysms are characterized by Two Regular Periods, the one of Depression, the other of Excitation." Baillarger's paper contained reports of seventeen cases, a part of which had come under his own observation, and a part were borrowed, on which were founded the conclusions which led him to add another group to the established groups of mental affections. To this new kind of insanity he gave the name of "*folie à double forme*." He explained the word *paroxysm*, as used in his definition, as meaning

"the reunion of two periods of excitation and depression, following each other without intermission." Any alleged intermittence between the two phases of the disease he affirmed to be, not a return to complete sanity, but only a minor degree or "shade" of one or the other of the phases. He pointed out the types which this malady may assume in its course, and indicated certain predominant symptoms which may characterize the period of excitation, such as nymphomania, satyriasis, and dipsomania. He, moreover, dwelt on the essential incurability of the disease.

A few days after the reading of M. Baillarger's communication, M. J. Falret, Sr., published the first part of his "Clinical Lessons on Mental Disease"—a work embodying a part of a course of lectures delivered by him at the Salpêtrière. In this brochure, we find essentially the same form of mental alienation described under the name of *folie circulaire* (circular insanity), and proof that these two alienists, Baillarger and Falret, had been simultaneously excoiting and elaborating the same train of ideas as deductions from independent observations. Any question as to the right of priority seems frivolous under the circumstances. The main difference between Baillarger's conception and that of Falret, is that the latter insists upon the existence of a lucid interval of greater or less length between the maniacal stage and the melancholic stage. Just a fortnight after Baillarger's communication, Falret read a paper before the Académie with the title: "Memoir on Circular Insanity, a form of mental disease characterized by the successive and regular reproduction of the maniacal state, the melancholic state, and a more or less prolonged lucid interval." In this memoir, Falret endeavored to show that the passage of mania into melancholia, and *vice versa*, had been observed from the earliest times as an accidental occurrence, but that it had not been sufficiently noticed, or, at least, it had not been expressly stated, that there exists a certain category of lunatics in whom this succession of mania and melancholia manifests itself in a continuous and quite regular manner. This fact, he says, had seemed to him sufficiently important to serve as the basis of a particular form of mental disease, which he called *circular insanity*, "because the existence of this kind of malmen revolves in one and the same circle of morbid states, which reproduce themselves without cessation, as if fatally, and are separated by a very brief interval of reason." The "melancholia" which he describes is "an extreme physical and moral depression, amounting sometimes to complete suspension of the intellectual and affective faculties." The period of expression is much longer than the period of maniacal exaltation. Moreover, "this is one of the most grave forms of mental alienation, which hardly admits of any lasting amelioration." Falret, lastly, shows the importance of heredity in the production of this species of insanity, and insists upon its greater frequency in women than in men.

As for the lucid period which Falret intercalates

between the melancholic and maniacal stages, there is no doubt, as Ritti observes,¹ that a certain proportion of cases bear out this view of the evolution of this form of insanity. At the same time, in the great majority of cases, the lucid interval, if it exists at all, is so short as to be inconspicuous. More commonly, the two characteristic phases of the malady imperceptibly shade into each other, the patient passing from a state of extreme melancholy into less and less pronounced states of depression, and so on, going through a regular pathological cycle into maniacal excitement, and back again into melancholic depression or stupor.

The treatises of Baillarger and Falret seem definitely to have established the fact that mania and melancholia may, in certain cases, be so welded together as "to constitute a morbid unity composed of two periods, as the attack of intermittent fever is a morbid unity formed of three stages."² Only the unity which was the creation of Baillarger embraced somewhat more than was included in the partial conception of Falret, who really saw only one variety of the morbid species which the former has so well defined. Baillarger's *folie à double forme* comprehends all kinds of chronic mental alienation which are characterized by alternating periods of mania and melancholia, whether these follow each other in quick succession by an apparently abrupt transit, whether they dovetail into each other, or whether they are separated by a lucid interval of greater or less length.

Since the publication of the treatises to which reference has been made above, quite a voluminous literature has accumulated on the subject, and the terms "circular insanity," "*folie à double forme*," with the complexus of phenomena which they connote, have now a generally recognized place in the nosology of mental diseases. In the able and exhaustive work of Ritti, about all that is known respecting this interesting department of mental diseases is well summed up and coördinated.

THE NEW YORK QUARANTINE STATION.

THE first of the year Mayor Hewitt made public the report of a committee of the Academy of Medicine, consisting of Drs. C. R. Agnew, E. G. Janeway, A. Jacobi, Stephen Smith, T. Mitchell Prudden, H. M. Biggs, and Richard H. Derby, whom he had requested to make an examination of the Quarantine establishment, and point out its defects and requirements, to estimate the sum necessary to be appropriated by the State in order to secure the improvements demanded, and to suggest whether the city should provide any further temporary hospitals in case of an outbreak of cholera. By this committee the manifest deficiencies of the New York Quarantine have again been pointed out, and they call upon the Legislature to take prompt

¹ *Traité Clinique de la Folie à double forme*, Paris, 1883.

² Ritti. *Loc. cit.*

and active measures to remedy the existing evils. The plans to accomplish the desired results should, in their opinion, be speedily prepared by the State officers. "If there be neglect in this matter," they say, "and cholera, which has threatened to invade the port for more than three years, and has recently been brought to Quarantine, should appear in the spring, and, favored by warm weather, pass an imperfect quarantine, and reach New York City or Brooklyn, or possibly extend beyond to near or remote places, public opinion would seek out the blameworthy and visit them with a condemnation which no seclusion would be deep enough to smother or mitigate."

In transmitting this report to Governor Hill, the Mayor remarks in an accompanying letter that it discloses a condition of affairs which calls for the immediate action of the Legislature, and that the danger of delay is too imminent to admit of any postponement whatever. He then goes on to say that if, in the wisdom of the Legislature, a commission shall be formed to rebuild the Quarantine establishment, so as to bring it up to the highest ideal standard of modern scientific knowledge, he can pledge the coöperation of the city authorities and of the medical profession, who have shown themselves to be fully alive to the great dangers of the situation.

On the first business day of the session of the State Legislature, a bill was introduced into the Senate, it is stated, at the instigation of the Quarantine Commissioner, Thomas C. Platt, which makes the salary of the Health Officer, \$10,000 a year, reduces the Quarantine fees, and provides for their disbursement in the payment of salaries and other necessary expenses.

MEDICAL NOTES.

—The *Army and Navy Journal* quotes an electrician as proposing the use of nitrate (sic) of amyl as a filling for shells, instead of gun-powder. "A few gallons of this nitrate dashed upon the deck of a warship would soon render her crew helpless." It is not necessary for the shell to penetrate the ship's walls, for if the shell was dropped on deck the ventilating apparatus employed on most iron-clads would suck the vapor down into the hold and aid in the overwhelming of the crew. Meantime, the attacking force tows the useless ship away, and at leisure lifts out the dead or senseless men.

—An interesting incident is given in the *Lancet*, regarding the late Sir William Smart, of the British Naval Medical Service. In the course of duty he had never been under fire, although from indulging his curiosity as a spectator of the siege operations at Sebastopol he had run some risk. But it so happened that in China he was on one occasion accidentally wounded by a pistol bullet. It entered above the wrist, ran up the arm, and lodged between the radius and ulna just below the elbow. He said he could sometimes feel this ball get in between the bones when bending the joint, and cause sudden stoppage of the

movement of flexion. With characteristic resolution, Sir William kept this a secret throughout his life, even from his family, because he feared that if known it might injure his prospects of employment as a hospital surgeon. Shortly before his death he expressed a wish that some mention should be made of his wound, the scar of which was visible, in order to show that though a man may have a bullet encysted in his right forearm, he may still be a good operator.

—Dr. H. Chataing made a medico-legal study of poisoning by chloride of potassium for his inaugural thesis based on eleven collected cases, according to the report of this thesis in the *London Medical Record*. Cases of poisoning by chloride of potassium are rare in France, where the drug is little given as a medicine, but is more frequent in Germany, and still more so in the United States. They are due either to mistakes in dispensing, ignorance, or — though not often — to attempted murder or suicide. The symptoms are the slate-coloration of the skin, which is either uniform or in patches, and is sometimes accompanied by jaundice. The urine becomes scanty, dark-colored, and contains albumen. In subacute cases the drug acts as an irritant poison, giving rise to diarrhoea, vomiting, and gastric ecchymoses. In acute cases there are cardiac symptoms, and alteration of shape of the blood-corpuscles. The best treatment is milk as a diuretic, pilocarpine as a diaphoretic, and stimulants prevent a collapse. The maximum dose permissible is from six to eight grammes in the twenty-four hours.

NEW ENGLAND.

—George D. Hersey, M.D., of Providence, has been appointed visiting surgeon to the Rhode Island Hospital, to fill the vacancy caused by the death of Dr. Edward T. Caswell.

NEW YORK.

—The President of the Board of Health, Mr. Bayles, having recently made a report on the sanitary condition of the City Hall, which declares that this is so bad that immediate steps should be taken to prevent risk to the lives and health of the occupants of the building, all the offices have been temporarily vacated, and the Common Council have ordered the Commissioner of Public Works to make, without delay, such changes and improvements in the drainage, plumbing and ventilation as will put the building in proper sanitary condition.

—Up to Saturday, January 7th, the Hospital Saturday and Sunday fund amounted to about \$20,000.

—At the meeting of the Academy of Medicine, held January 5th, memorial papers were read by Dr. J. L. Corning on Dr. T. R. Varick, by Dr. J. C. Peters on Dr. Middleton Goldsmith, by Dr. S. D. Hubbard on Dr. Jared Linsly, and by Dr. Francis Delafield on Dr. Alonzo Clark.

—Dr. Newton M. Shaffer has commenced, under the auspices of the trustees of the institution, a course of free lectures on Orthopædic Surgery, at the New York Orthopædic Dispensary and Hospital at 126 East 59th Street.

Miscellany.

OBITUARY.—DR. WESLEY M. CARPENTER.

THE profession in New York and elsewhere has been greatly shocked by the sudden death of Dr. Wesley M. Carpenter, who was found dead in his bed on the morning of Jan. 7th. For some weeks he had complained of rheumatic troubles, but had been about as usual, and the cause of death was Bright's disease. He was about fifty-five years of age, and was born in Erieville, N. Y. He was graduated from the College of Physicians and Surgeons of New York, and for a number of years practised in the vicinity of his native place. Almost twenty years ago he removed to New York City, where he engaged in practice for about five years, when he retired in order to devote himself to medical literary and scientific work. For many years he has been the most active worker, with the exception of Dr. Shrady, the editor-in-chief, on the staff of the *Medical Record*, and the energetic and efficient secretary of the Medical Society of the County of New York. At the time of his death he was also Corresponding Secretary of the New York Academy of Medicine, Clinical Professor of Medicine at the University of the City of New York, one of the curators of Bellevue Hospital, and editor of *The Epitome*, a monthly retrospect of American practical medicine and surgery. He compiled an "Index of Surgery," and other works, and was one of the collaborators on "The American Encyclopedia of Surgery." His many genial qualities made him a general favorite in the profession, and he will be greatly missed at all the meetings of the medical societies, at which, in connection with his work on the *Record*, he was so constant an attendant.

of mental disturbance due to chronic nephritis. I was told by one of the physicians who attended him that the man was full of delusions. He thought that his wife and others were persecuting him.

"I saw another interesting case a year ago last Christmas. This occurred in the practice of Dr. Mullin, of Hamilton, Canada. Here a medico-legal question arose. It was, whether or not the man was in a condition to make a will. There was no doubt as to the existence of chronic Bright's disease. The mental condition was peculiar. He believed that his wife and others had designs upon his life, and it was with difficulty that he could be persuaded to take food. He thought that people were persecuting him. Although he gave a very intelligent account of himself, it was not considered advisable that he should make his will at that time. He was placed upon a somewhat more active treatment than he had previously received. This man subsequently did well, his mind had cleared, and he recovered sufficiently to get about and to make his will."

COMPARATIVE MORTALITY IN ENGLAND AND IN AMERICA.

THE imperfect system of registration of vital statistics in America prevents the possibility of a useful comparison between the rates of mortality in England and in America. The rapid growth of life assurance in the United States has accumulated, however, a mass of statistics of mortality of still greater value for estimating the duration of life in that country than the results of any system of civil registration of births and deaths yet existing. During the thirteen years 1859-72, the number of life policies existing in the United States increased from 50,000 to 800,000. After 1872 the number of policies remained comparatively stationary for some years, but more recently the number has probably again increased rapidly. Fortunately for the present purpose—a comparison of the value of life in England and in America—a valuable series of experience tables, based on the life and mortality statistics of thirty American life assurance offices, was published a few years ago. The basis of experience upon which these American tables are constructed is sufficiently large to give the results a very definite value. The tables dealt with more than half a million of policies existing at the end of 1874, as well as nearly 50,000 previously lapsed by death, and nearly an equal number that had lapsed by surrender or discontinuance of premium—in all, with more than 600,000 policies, covering considerably more than 4,000,000 of years of life under observation. Among the more interesting results shown by these tables, it may be noted that the expectation of life of insured males in America at twenty years of age is 42.1 years, and exceeds by one year the expectation of males in England by the English experience tables; this excess in the male expectation of life in America is maintained through life, although it steadily decreases, until the advanced age of eighty-four, when the difference in favor of American life disappears. With regard to female life, the expectation of life at the age of twenty is precisely the same (40.8), both by the American and English experience tables; but afterwards, and until the age of forty-seven, the American expectation somewhat exceeds the expecta-

MENTAL AFFECTIONS ASSOCIATED WITH CHRONIC BRIGHT'S DISEASE.

At a recent meeting of the Philadelphia Neurological Society, Dr. William Osler made the following remarks on the above topic, as reported in the *Polyclinic*:

"I would like to make some reference to the occurrence of certain mental affections which come on in connection with chronic Bright's disease. It is well-known that certain mental phenomena occur in connection with chronic renal diseases besides simple uræmic coma. I have reported one case of violent mania in a man aged forty-two years, the subject of Bright's disease. When brought to the hospital he had been maniacal for three or four days. He subsequently became comatose and died. A very interesting case was recently under my care in the University Hospital. A man was brought to the hospital Thursday evening. I saw him on Saturday. He was then quiet, in a semi-dozing condition, but could be aroused, and gave a very interesting account of himself. The whole clinical picture was that of chronic interstitial nephritis. I thought it not improbable that the man might pass into a condition of coma. There was nothing to attract special attention to his mental condition, and I did not regard his condition as critical. That night he got out of bed, in the absence of the attendant, wandered about the ward, and finally jumped out of the window. It was subsequently learned that, before admission to the hospital, he had been violent, requiring two or three men to hold him. We were not told this when he was brought to the hospital. I have no doubt that this was an instance

tion according to the English tables, while after the age of forty-seven the difference is in favor of English life, increasing to a year at eighty years of age. One other marked feature disclosed by a comparison of these American and English experience tables is that in America expectation of life among insured females is lower than among insured males after the age of fifty-three years, while it is identical with that of males. It is well known that by all the principal English tables expectation of life among females exceeds that among males after the age of thirty-five years, and shows an increasing excess to the end of life. These differences between the expectation of life in America and in England relate, it should be remembered, solely to insured lives, mainly belonging to the middle and upper classes. If similar statistics were available for the general population, very much wider differences between the mean duration of life in America and in England would probably be shown. — *The Lancet*.

BROUARDEL ON HERMAPHRODISM.

PROFESSOR Brouardel very carefully epitomized the characteristics of this curious condition in a clinical lecture which he recently delivered, and which is reported in the *London Medical Record*, December, 1887. He pointed out that hermaphroditism can only be complete so far as the internal organs are concerned. An individual may have one ovary and one testicle, but not a scrotum and a vulva, for it is evidently impossible to have a joining and a separation simultaneously. Pseudo-hermaphroditism generally consists of an arrest of development for the male sex (hypospadias) and an excess of development for the female sex (hypertrophy of clitoris and possible obliteration of vulvar orifice). If any difficulty be experienced in distinguishing the sex, the expert should examine the general bearing of the individual — the voice, gestures, face (beard?), the shape of the neck and members, which, as a rule, are less muscular in the female than in the male, the arrangement of the pubic hair, circular in the female, triangular with the apex pointing to the umbilicus in the male. The essential, of course, is the detection of the testicles and the ovaries, but this, of course, is often difficult or impossible on account of their non-migration. They may simulate a painful gland, and may even give rise to the diagnosis of a vaginal hernia. The absence of uterus does not signify much. With hypospadias males who disguise their sex because they prefer to utilize their cavity as a vagina, the male sex may be affirmed if the observer can trace (1) a characteristic depression, resembling a cutaneo-mucous raphe, at the base of the rudimentary penis, pulling it down; (2) the absence of a hymen caruncula myrtiliformes; and (3) the absence of the labia minora. Hypospadias may have fortuitous discharges of a sanguinolent nature which may easily be mistaken for the menses.

A CASE OF HYDATIDS IN BONE.

MR. LEACOCK describes in the *Australian Medical Gazette* for November, 1887, a case of this rare disease of bone. It occurred in a male, aged forty (at the

time the diagnosis was made). At twelve he was injured in the left knee by a cricket ball and had trouble from it off and on. Eight years later he was kicked by a horse on the same knee; from this injury he never quite recovered, the joint being always weak and sometimes a little swollen and painful. Thirteen years later these symptoms (after much walking), became so aggravated as to keep him in bed much of the time for six months. Since then — that is for the last seven years — there has been inability to completely straighten the limb, frequent pain, and permanent though slight enlargement of the joint. The patient came under Mr. Leacock's care about four months ago, through having struck the knee violently against a post. For a fortnight he kept his bed, with all the usual local symptoms of acute synovitis, but little or no constitutional disturbance or rise of temperature. At the end of that time, the pain having greatly subsided, he left his bed on crutches, but could not put his foot to the ground, and the pain gradually returning, after two or three weeks he was compelled to take to bed again. All the usual means for obtaining absolute rest to the joint were adopted. Extension, instead of relieving, seemed only to increase the pain. There was no symptoms, either local or general, of suppuration. There was only a slight increase of swelling about the knee; very little effusion in the joint, the permanent seat of pain being referred more particularly to a spot on the inner condyle of the femur. In addition, there were the usual electric shock pains and startings, aggravated at night.

Finding, after about a month's treatment, that absolutely no improvement took place; that the patient's health was beginning to break down from constant pain, and that he himself was anxious for relief at any risk, operation was proposed and accepted. On opening the joint, a small amount of flocculent lymph was found with slight erosion of the articular cartilages, and on digital examination a perforation admitting the tip of the finger, between the condyles of the femur, apparently communicating with a cavity in the end of that bone. There was chronic thickening of the ligaments and fibrous tissue of the joint, but no pus; no hydatid cysts were seen in the joint, and of course none were expected. On applying the saw to the condyles of the femur, the instrument did not meet with the usual resistance; the bone in fact, was a mere shell, in some parts scarcely thicker than paper. Such being the state of affairs amputation was the only resource, which was done at once in the lower third of the thigh.

On examining the removed limb, the lower end of the femur was found hollowed out into one large cavity, stuffed full of hydatid cysts, from the size of a small pea to nearly an inch in diameter. The cancellous structure in the head of the tibia was undergoing fatty degeneration, and in the popliteal space was an ounce or more of broken-down soft tissue, evidently a commencing abscess, though not yet converted into pus.

The stump healed almost entirely by first intention.

Apart from the rareness of hydatids in bone, the interest of the case mainly consists in the inquiry as to how long they had been there, and whether injuries to the knee affected their activity in any way, so as to lead to an increase of production, and consequent inflammatory action.

AN EPIDEMIC OF PNEUMONIA AMONG CHILDREN.

DR. F. TROSSAT describes in *Lyon Medical*, December 18, 1887, an epidemic of pneumonia occurring in Chalon-sur-Saône, which well illustrates the infectious nature of the disease. There had been considerable pneumonia in the department during the months of February, March and April, but the cases were so scattered that no contagious influence could be determined. The first case in this village (St. Loup de la Salle), was a child of five and one-half years, taken sick February 28th. March 7th, children in four different families were taken sick with the same disease. March 9th, three more cases occurred, and on the 11th, one more. All these nine children, aged from two to six years, went every morning to a sort of day-nursery (*asile maternel*), where they stayed till 9 P.M. For more than a month there had been no case of pneumonia in the village. Nine out of twenty-five children occupying this one room were attacked; but the epidemic did not extend to the other children of the school, occupying an adjoining room, nor did any of the little patients convey the disease to their parents, their brothers or their sisters.

The account, unfortunately, does not throw any light upon any probable cause for the outbreak, connected with the room in which the children stayed, which was well aired, had a morning and afternoon sun, and was simply a little damp.

Correspondence.

DONDERS MEMORIAL FUND.

BOSTON, January 1, 1888.

MR. EDITOR, — A Committee has been formed in the Netherlands in order to celebrate the seventieth birthday of an eminent man of science, Professor F. C. Donders, of Utrecht, on the 27th of May, 1888. On that date the law requires him to resign his duties as Professor at the University and as Director of the Physiological Laboratory, and it is now contemplated on that occasion to connect his name in a permanent way with the spot where he has lived and worked for more than forty years, by the creation of a fund, devoted to a scientific purpose, and which shall be known as the "Donders Memorial Fund." The rules and by-laws according to which this fund is to be governed as well as its more special destination will be drawn up and fixed with the concurrence of Professor Donders, and will be made to correspond most fully to his own wishes. This Committee, which includes a large number of most distinguished citizens of the Netherlands, and many professors of the Universities of Amsterdam, Leyden, and Utrecht, have asked us to co-operate with them in honoring a name so well known, both in the field of biology and of ophthalmology.

We therefore kindly request you to bring this project to the consideration of those who you think might be willing to contribute towards the formation of the Donders Memorial Fund; and we shall be glad to receive and transmit to the Committee, with a list of the donors, any sums which you may send to us for this purpose.

HENRY W. WILLIAMS, M.D., 15 Arlington Street.

HASKET DERBY, M.D., 182 Marlborough Street.

REPORTED MORTALITY FOR THE WEEK ENDING DECEMBER 31, 1887.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diph. & Croup.	Scarlet Fever.	Measles.
New York	1,481,920	710	274	16.34	21.70	10.08	2.66	1.46
Philadelphia	593,801	351	93	13.66	11.31	5.51	1.45	1.74
Brooklyn	745,108	—	—	—	—	—	—	—
Chicago	725,000	—	—	—	—	—	—	—
St. Louis	420,000	—	—	—	—	—	—	—
Baltimore	417,000	145	57	16.56	15.18	7.59	—	5.25
Boston	300,000	214	64	15.51	18.80	7.99	3.76	—
New Orleans	242,750	129	36	19.40	11.70	4.68	—	—
Buffalo	225,000	—	—	—	—	—	—	—
District of Columbia	210,000	95	40	16.80	17.70	5.25	1.05	7.35
Pittsburgh	210,000	81	20	18.45	14.76	7.38	—	1.23
Montreal	186,257	—	—	—	—	—	—	—
Milwaukee	170,000	47	20	23.43	12.78	10.65	—	—
Providence	121,000	—	—	—	—	—	—	—
Richmond	100,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,000	21	6	9.52	9.52	—	—	—
Charleston	60,145	41	13	2.44	4.88	2.44	—	—
Portland	40,000	22	6	9.60	13.65	4.55	4.55	—
Worcester	68,383	22	15	9.10	18.20	9.10	—	—
Lowell	64,051	—	—	—	—	—	—	—
Cambridge	59,660	23	8	7.14	14.28	7.14	—	—
Fall River	56,863	20	12	20.00	10.00	10.00	—	—
Lynn	45,861	17	7	5.88	—	5.88	—	—
Lawrence	38,825	18	6	11.11	—	5.55	—	—
Springfield	37,577	17	8	47.04	5.88	35.28	—	—
New Bedford	33,303	12	5	25.00	—	25.00	—	—
Somerville	29,962	12	3	25.00	25.00	—	25.00	—
Salem	28,084	12	5	16.06	8.33	16.06	—	—
Holyoke	27,894	11	3	9.09	—	—	—	—
Chelsea	25,709	16	6	37.50	6.25	6.25	18.75	—
Taunton	23,674	7	2	—	—	—	—	—
Haverhill	21,795	13	7	15.38	—	15.38	—	—
Gloucester	21,714	3	0	—	—	—	—	—
Brookton	20,783	6	1	33.33	—	33.33	—	—
Newton	19,759	5	0	—	20.00	—	—	—
Malden	16,407	8	3	12.50	—	—	12.50	—
Fitchburg	15,375	12	1	16.66	8.33	—	—	—
Waltham	14,609	2	0	—	—	—	—	—
Newburyport	13,716	4	2	—	—	—	—	—
Northampton	12,896	—	—	—	—	—	—	—

Deaths reported 2,101: under five years of age 723; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 338, acute lung diseases 329, consumption 281, diphtheria and croup, 167, scarlet fever 41, measles 32, typhoid fever 31, diarrheal diseases 29, malarial fever 10, puerperal fever 10, erysipelas seven, cerebro-spinal meningitis six, whooping-cough five. From typhoid fever, Philadelphia 11, New York six, Boston five, Boston three, Baltimore and Fitchburg two each, New Orleans and Lawrence one each. From diarrheal diseases, New Orleans 11, New York four, Philadelphia three, Boston, District of Columbia, Nashville and Fall River two each, Baltimore, Springfield and Holyoke one each. From malarial fever New Orleans six, New York four. From puerperal fever, New York, Baltimore, Pittsburgh, and Milwaukee two each, Boston and New Orleans one each. From erysipelas New York and Chelsea two each, Philadelphia, Boston and Milwaukee one each. From whooping-cough, New York, Philadelphia, Boston, Pittsburgh and Milwaukee one each.

In the 22 cities and greater towns of Massachusetts, with an

estimated population of 1,048,107, the total death-rate for the week was 23.12 against 20.18 and 21.14 for the previous two weeks.

In the 28 greater towns of England and Wales with an estimated population of 9,244,099, for the week ending December 17th, the death-rate was 22.1. Deaths reported 3,519; infants under one year of age 836; acute diseases of the respiratory organs (London) 413, scarlet fever 108, whooping-cough 157, measles 80, fever 54, diphtheria 47, diarrheal 35, small-pox (Sheffield 17, Bristol and Preston one each), 19.

The death-rates ranged from 15.5 in Portsmouth to 35.7 in Blackburn; Birmingham 22.2; Bradford 17.9; Hull 22.0; Leeds 26.2; Leicester 21.5; Liverpool 20.6; London 20.1; Manchester 32.9; Newcastle-on-Tyne 26.2; Nottingham 27.9; Sheffield 21.9; Sunderland 22.9.

In Edinburgh 20.2; Glasgow 25.0; Dublin 38.7.

The meteorological record for the week ending December 31, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole, of the United States Signal Corps:—

Week ending	Barometer.		Thermometer.		Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Dec. 31, 1887.																			
Sunday, ... 25	29.87	27.0	30.0	26.0	95.0	82.0	89.0	89.0	N.	N.	N.	12	12	3	N.	O.	O.	8	*T
Monday, ... 26	30.02	27.0	28.0	18.0	86.0	88.0	100.0	94.0	N.	N.	N.	12	12	3	N.	O.	N.	10	25
Tuesday, ... 27	30.18	29.0	29.0	16.0	84.0	87.0	79.0	83.0	N.W.	N.	N.W.	12	5	1	N.	O.	N.	11	20
Wednesday, ... 28	29.71	33.0	50.0	16.0	100.0	100.0	64.0	88.0	N.	S.E.	N.	4	24	24	O.	R.	F.	8	.68
Thursday, ... 29	29.47	17.0	36.0	10.0	60.0	63.0	64.0	62.0	N.	W.	W.	28	30	24	C.	C.	C.		
Friday, ... 30	30.21	11.0	15.0	8.0	60.0	62.0	61.0	61.0	N.W.	W.	W.	18	20	19	F.	C.	C.		
Saturday, ... 31	30.47	14.0	20.0	5.0	77.0	96.0	66.0	65.0	W.	W.	S.	18	10	5	F.	O.	O.		
Mean, the Week.	30.033	20.6	29.0	14.0			77.1											37	1.03

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., squally; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 31, 1887, TO JANUARY 5, 1888.

CLARY, P. J., A., major and surgeon. Granted leave of absence for one month. S. O. 138, Department of Arizona, December 25, 1887.

ENERT, R. G., captain and assistant surgeon. Ordered from Fort Custer, Montana, to Fort Pembina, Dakota Territory. S. O. 201, A. G. O., December 30, 1887.

EWING, C. B., first lieutenant and assistant surgeon. Granted one month's leave. S. O. 137, Department of the Missouri, December 27, 1887.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDED DECEMBER 31, 1887.

BEVAN, A. D., passed assistant surgeon. Resignation accepted to take effect January 31, 1888, and leave of absence extended to that date. December 31, 1887.

BRATTON, W. D., assistant surgeon. Granted leave of absence for thirty days. December 30, 1887.

SOCIETY NOTICES.

ALUMNI ASSOCIATION OF THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK.—Third annual meeting at the New York Academy of Medicine, January 18, 1888. Morning Session, 10 to 1: (1) Clinical Notes on Uterine Displacements, by Dr. G. A. Klotzsch; (2) A Study on the Etiology of Protrusion Vaginitis Uteri, by Dr. G. T. Harrison; (3) Septic Peritonitis following Laparotomy, by Dr. P. F. Chambers; (4) On the Etiology and Development of Caruncle, by Dr. J. G. Perry. Afternoon session, 3 to 5: (5) The Electrical Treatment of Fibromyoma, by Dr. A. H. Buckmaster; (6) The Use of Galvanism in Gynecology, by Dr. E. L. H. McGinnis; (7) The Use of the Tampon in the Treatment of Pelvic Inflammation, by Dr. T. A. Emmet. Dr. W. G. Wylie will open the discussion of this paper on the affirmative side, Dr. J. B. Hunter on the negative. The profession are cordially invited to be present.

W. H. BAKER, M.D., Chairman.

H. C. COE, M.D., Secretary.

OBITUARY. ALONZO B. PALMER, M.D.

Alonzo B. Palmer, M.D., of Ann Arbor, Mich., professor of theory and practice of medicine, and dean of the faculty of the Medical Department of the University of Michigan, died December 29th, in the seventy-third year of his age. Dr. Palmer was a native of Richfield, Otsego County, N. Y., and obtained his education at the College of Physicians and Surgeons of the Western District of New York, from which he took his degree in 1839. He settled in Tecumseh, Mich., in 1850, but soon moved to Chicago, where in 1852 he became city physician. In the same year he was appointed professor of anatomy in the University of Michigan, where he afterward occupied successively the chairs of materia medica and therapeutics and of diseases of women and children, until his transfer in 1860 to the professorship which he held at the time of his death. He was chairman of the section of pathology at the *International Medical Congress* last September.

BOOKS AND PAMPHLETS RECEIVED.

Incontinence of Urine in Children. By Charles W. Townsend, M.D., Boston, Mass. Reprint. 1887.

Transactions of the New Hampshire Medical Society at the Ninety-seventh Annual Session, held at Concord, June 21 and 22, 1887.

Thirty-second Annual Report of the Trustees of the Northampton Lunatic Hospital, for the year ending September 20, 1887.

Die Temperatur-Verhältnisse der Haut und deren Beziehungen zum Stoffwechsel, zur Erkältung und Katarrh von Casimir Warner. Berlin, 1887.

Ueber Pneumothorax subpleuricus nebst einem Fall desselben. Von Dr. Anton Eigner, emer. Secundararzt I. Classe des k. k. Allgemeinen Krankenhauses. Wien, 1886.

Notes on some Obscure Cases of Poisoning by Lead Chromate, Manifested chiefly by Encephalopathy. By David Denison Stewart, M.D., Chief of the Medical Clinic in the Hospital of the Jefferson Medical College. Reprint. 1887.

A Clinical Analysis of Sixty-four Cases of Poisoning by Lead Chromate (Chrome Yellow), used as a Cake-dye. By David Denison Stewart, M.D., Chief of the Medical Clinic in the Jefferson Medical College; Assistant Physician to St. Christopher's Hospital for Children. Reprint. 1887.

Lecture.

THE HISTORY OF MEDICINE.

INTRODUCTORY LECTURE.¹

BY J. S. BILLINGS, M.D., LL.D. (HARY.) SURGEON, U. S. A.

THE power of belief, faith, imagination, or expectant attention to affect the material organism of the body is so well known that I need only give one or two illustrations. The first is one which I noted from the lips of the late Prof. Joseph Henry, Secretary of the Smithsonian Institution:

Some years ago, during the meeting of the Scientific Society in Cincinnati, a certain doctor called on Professor Henry and informed him that he had discovered that all the effects of a drug could be produced by holding it in the hand, and invited the Professor to witness the experiment. To this he agreed, provided he could bring a friend with him, which was assented to. At the appointed time, he went with Professor Agassiz to the doctor's house, where they found quite a number of persons assembled. They were taken into a room where there was a row of bottles containing powdered drugs, labelled opium, ipecac, rhubarb, Rochelle salt, etc., and were requested to put a portion of the powder from each of these bottles in pieces of paper provided for the purpose, to fold these and mark each with a number to designate the bottle from which it was taken, for their own private information.

Everything being arranged, they seated themselves in the parlor, and the Professor placed one of the paper packets in the hand of each of a number of persons present. He then walked up and down and discoursed on the certainty of this mode of medication, the great importance of the discovery, etc.

Presently one of the subjects of experiment began to complain of headache, another of nausea, a third of pain in the abdomen, a fourth of sleepiness, etc., and these symptoms continued to increase in strength. Turning to Professors Henry and Agassiz the doctor asked if they were satisfied, to which they replied that they were. He then requested a certificate to that effect, which they excused themselves from giving. The next day it leaked out that they had put nothing in the papers.

I may remark that the doctor was in error in supposing that his theory was new, for as long ago as 1746 a certain Privati at Venice recommended much the same method of administering remedies, especially in gout and paralysis. He called the method *intonacatura*, and it consisted in enclosing the medicines in glass tubes which were to be electrified and then held in the hand.²

It is hardly necessary to occupy time in specifying the effects of mental states upon the body. Jaundice has been produced by anger, and also by grief. The sudden change of color in the hair from black to white under the influence of fear or sorrow is well authenticated. Now often does it happen that a person suffering violent toothache finds his pain disappear as he enters the door of the dentist. Convulsions and epilepsy have been produced in children by fright, or by the milk of the mother changed by anger or fright. Finus and Charlon each relate cases of criminals condemned to death, and having their eyes bandaged pre-

paratory to the fatal stroke, who died before any bodily injury was inflicted upon them. All surgeons of large experience know how unfavorable a sign it is when a patient declares that he will not recover, and they may properly refuse to operate, except in cases of urgent necessity, where the patient has expressed such a belief. I remember vividly a case at the battle of Gettysburg. An officer of unusual bodily strength and activity, and in excellent health, received a wound in the hip. On examination it was found to be but a slight flesh wound. Nevertheless the patient was, from the first, much depressed in spirits, and declared that he should never recover, and the event proved that he was a true prophet, for he died on the fourth day. Careful examination showed that the wound was, as had been supposed, a slight one, and every organ in the body was apparently in a normal condition.

What is known as "homesickness," the "heimweh" of the Germans, is a well-recognized form of disease in recruits, which in some cases may prove fatal, either directly or by leading to suicide.

The great nerve centres for mental impressions and operations receive their stimuli from and are acted upon by three different channels. First, by the quality of the blood itself; second, by the relative amount of blood furnished to the whole or certain parts of the brain, which amount is, in a great degree, dependent upon the action of certain nerve centres at the base; and, third, from the ganglia of the special senses, sight, hearing, smell, taste and touch. It is through these last channels that the medicine man of Africa and Australia administers much of his remedies. If he can by ceremonies, conjurations and jugglery make his patient believe that he has driven out the evil spirit, or killed the snake, or removed the insect which was the cause of his pain, in very many cases he has cured the pain, that is, he has substituted one set of ideas for another in the mind of the sufferer.

But if emotions can produce disease they can also sometimes cure it. Take the following instance reported by Dr. Paris.¹⁰

After the discovery of the powers of nitrous-oxide, Dr. Beddoes determined to try it in a case of paralysis, the administration of the gas being entrusted to Sir Humphrey Davy. Before giving the remedy he placed a small thermometer under the tongue of the patient to take the temperature in order to make future comparisons. The paralytic man, ignorant of the nature of the treatment about to be applied, but from the statements of Dr. Beddoes fully impressed with the certainty of its success, on feeling the thermometer under his tongue concluded the talisman was in full operation, and declared that he felt the effects of its influence throughout his whole body. Davy desired his patient to renew his visit, when the same ceremony was gone through with and repeated every day for a fortnight, the patient gradually improving and finally being dismissed as cured without the use of any further applications.

Dr. R. T. Coleman, Chief Surgeon Stonewall Division, C. S. A., reports a case of a man with chronic rheumatism who was almost helpless, and in whom the limbs had begun to atrophy. A shell burst under the wagon upon which he was sitting with marvellous and instantaneous effect, producing a complete, radical and permanent cure.¹¹

¹ To a course of eight lectures before the Lowell Institute of Boston. Delivered December 27, 1887. Concluded from page 31.

² Sprengel, Hist. de la Méd., T. V., p. 676.

¹⁰ Pharmacologia, p. 28.

¹¹ Richmond Journal, 1872.

Dr. Mauson¹² reports a case of a girl aged two years and three months frightened by a boy in a red mask, producing great terror, profuse perspiration, followed in thirty-six hours by convulsions, and death in the second week. The brain was found highly congested, but no other local lesions.

The mechanism by which sudden death is produced by fear is probably by prolonged syncope—that is, by stoppage of the action of the heart. Several cases are on record where the fear of a surgical operation has produced death. An educated man, sixty-two years old, being placed on the table for the operation of lithotomy, died a few seconds before anything was done.¹³

"A very intelligent officer¹⁴ had suffered for some years from violent attacks of cramps in the stomach. He had tried almost all the remedies usually recommended for the relief of this distressing affection, and for a short period the trisnitrate of bismuth had been attended with the best results. The attacks came on about once in three weeks, or from that to a month, unless when any unusual exposure brought them on more frequently. As bismuth had been so useful it of course was continued, but it soon lost its effect. Sedatives were again resorted to, but the relief afforded by these was only partial, while their effect on the general system was evidently very prejudicial. On one occasion while greatly suffering from the effect of some preparation of opium given for these spasms he was told that on his next attack he would be put under a medicine which was generally believed to be most effective, but which was rarely used in consequence of its dangerous qualities; but that, notwithstanding these, it would be tried provided he gave his consent. This he did willingly. Accordingly on the first attack after this a powder, containing four grains of *ground biscuit*, was administered every seven minutes, while the greatest anxiety was expressed (within the hearing of the patient) lest too much should be given. The fourth dose caused an entire cessation of pain. Half-drachm doses of bismuth had never procured the same relief in less than three hours. For four successive times did the same kind of attack recur, and four times was it met by the same remedy, and with like success. After this my patient was ordered to join another ship on a different station."

No better illustration of the use which may be made of belief as a remedial agent can probably be adduced than is given in the history of Perkinsism. Dr. Elisha Perkins was a Connecticut physician, born in 1740. The discoveries of Galvani attracted his attention, although he did not understand them. In 1796, he announced the discovery of a means for the cure of pain, inflammation, rheumatism, etc., by the application of pieces of metal, known as the metallic tractors. These tractors consisted of a pair of pointed rods, the one of brass, the other of iron or zinc, which were to be drawn over the affected parts. These tractors were patented, and sold for five guineas a pair. For about eight years the fame of these increased amazingly; they were used in the public hospital at Copenhagen, and extensively in England, where there was a Perkinsian Society, and pamphlets on them multiplied. They were favorite instruments with the

clergy, who, with women, are the best believers. To-day the whole thing is forgotten, and very few now living have ever seen a pair of the tractors.

A very good account of the methods by which the supposed virtues of these tractors were disproved is given by Dr. John Haygarth in a pamphlet printed at Bath in 1800, "Of the Imagination, as a Cause and as a Cure for Diseases of the Body." All the effects alleged to have been produced by Dr. Perkins's instruments were produced with pieces of wood of the same shape.

It is doubtful whether there are now any new follies in the world, any forms of errors of observation, or of blunders of reasoning appearing in our days, which were not committed long ago; and, on the other hand, it is doubtful whether any phase or variety of belief, or of practice based on irrational belief, ever wholly and permanently disappears. We have a Perkinsism in our days, but we call it metallotherapy.

Within a few months a distinguished French physician, M. Luys, has published a book with photographs to prove the possibility of inducing various emotions and sensations in a hypnotized girl by substances enclosed in glass tubes and held at a distance from the subject, which is almost identical in its general scope with some of the observations of Professor Henry referred to above.

Charms, which act on the mind of the person charmed, always have some effect; in incantations, commonly a mischievous one. Hearne, the traveller in North America, relates somewhere that, being solicited by an Indian to give him a charm against some enemy, and convinced of the harmless folly of such sorceries, he complied, and drew on a sheet of paper some circles, signs, and words. The Indian who received this took care that the doomed man should know it; he immediately sickened, and before long died. Hearne resolved to make no more magic papers.

Additional evidence in abundance, if it be needed, is to be found in the writings of Braid, Carpenter, Maudsley, Bain, and others, and in the accounts of modern miraculous cures, such as those of Prince Hohenlohe and of the Zouave Jacob.

The question as to how these effects are produced, is one of much interest.

It is generally admitted that the result of the grotesque dress, chants and invocations, threats and magic words, is to inspire in the patient a belief in the power and skill of the operator, and in the efficacy of the means which he employs; and when a thorough, undoubting, and unhesitating belief exists, which can be directed at pleasure, it may be used to influence the functions of the various organs of the body much more extensively and with greater power than is usually thought possible, and results may thus be obtained which, to the inexperienced, seem little short of miraculous. We conclude that the essential agent is the belief itself, for the reason that it seems to make little difference as to what particular amulet, ceremony, or remedy is used.

What, then, is this mental condition which we call belief, and how is it possible that it should influence the various organs of the body?

As Mill remarks: "To determine what it is that happens in the case of assent or dissent, besides putting two ideas together, is one of the most intricate of

¹² *Lancet*, Lond., 1846, II, p. 582.

¹³ See case in *Bulletin Médical*, 1873, III, p. 175, by Dr. Cazenave.

¹⁴ From illustrations of the *Via Medicatrix*, etc., by a naval officer in the *Brit.* and *Foreign Med. Rev.*, Lond., 1847, Vol. XXIII, p. 297.

metaphysical problems." This difficulty is increased by the various senses in which words are used, and this word "belief" is a notable instance, being sometimes used as synonymous with knowledge, sometimes as opposed to it. Hamilton defines it as "that state of mind which is preliminary to knowledge"; that is, in which an unproved statement is accepted; but when it causes or relieves pain or paralysis, it is evident that we have something more than a mere assent to a proposition. The same applies to Fiske's attempt at explanation. He says¹⁵ that: "By a singular freak of language, we use the word belief to designate both the least persistent and the most persistent coherents among our states of consciousness, to describe our state of mind with reference both to those propositions of the truth of which we are least certain, and to the truth of those of which we are most certain. We apply it to states of mind which have nothing in common, except that they cannot be justified by a chain of logical proofs. For example, you believe that all crows are black; but, being unable to furnish a logical demonstration of the proposition, you say that you believe it, not that you know it. You also believe in your own personal existence, of which, however, you can furnish no logical demonstration, simply because it is an ultimate fact in your consciousness, which underlies and precedes all demonstration."

Neither of these apply to the state of mind which we are considering; namely, belief, with expectation, the strength of which is "often in an inverse ratio to the believer's experience and knowledge."

If we accept the definition, that "expectation is a highly representative experience," which is based on the supposition that knowledge and belief are essentially the same, except that the first is presentative, and the second representative cognition,¹⁶ we have probably come as near to expressing what is meant as is possible from the metaphysical side.

Let us see if we cannot make it a little plainer from another point of view:

Phenomena such as those observed by Professor Henry are accepted by some as ultimate and unexplainable facts; by others, as proving the existence of a special force in the human economy, from which, as we shall see, several medical systems have been deduced. That we may be able to judge of these speculations from the latest standpoint, let us consider the explanation of these phenomena which would probably be given by some physiologists of the present day.

With progress in our knowledge of the structure and functions of the nervous system, there has developed an increasing tendency to lay stress upon the possible or probable importance and frequency of the part which it plays in the causation of some diseases, and in the production of many of the phenomena of others. Insanity and other so-called diseases of the mind are now generally admitted to be due to disease or malformation of the brain; while that the nervous system has much to do with the production of fever, inflammation, skin diseases, etc., is becoming more and more evident. It is probable that each organ of the body is connected with certain parts of the brain, and the ancient localization of certain emotions in certain viscera, though crude, is not without some

foundation in positive physiological facts. Morbid states of the viscera or of the centres of organic sensations may give rise to hypochondriasis or melancholia; and just as an irritated stomach may produce a headache, so the melancholic individual projects the obscure feelings in some definite objective form as the cause of his sufferings. He imagines that his vitals are being gnawed at by some hideous animal, or that his body is the scene of demoniacal revels. The special form of the hallucination will vary with the individual and his education; but it always takes some dread or malignant shape."¹⁷

Now this nervous system, consisting of the brain, spinal cord and ganglions, with communicating cords or nerves passing between themselves, and also connected with all parts of the body, is pivoted, as it were, about certain small masses of gray matter which lie at the base of the brain. Above these are the centres connected with the special senses of vision, audition, etc., and also those connected with mental operations and consciousness; while below and behind are those which preside over the functions of organic life. The influence which the lower nerve centres exercise over the upper, has been known, and the reverse influence is equally important. One of the most common of nervous phenomena is a chill. This chill may be produced by a change in the blood which circulates through the nerve centres, as in the commencement of yellow fever or typhus, or by an impression made on the external branches of the nerves supplying the cutaneous surface of the body, as by cold, or by a change in the thin gray layer of the surface of the cerebrum or upper brain, which change is brought about through the channels of special sensation of sight, hearing, smell or touch. This last species of chill is not produced by the direct action of the centre of the sensory nerve upon the vaso-motor centre. If a man goes into a dark room and puts his hand by accident upon something cold, that is, of the temperature of the air, it will, in most cases, affect him but little. But if the room is strange, and the surrounding circumstances suspicious, and a slight motion of his hand shows that the cold object is a man's face, he will very probably have a slight chill. In this last case what has happened? The idea or mental picture of a dead man has been produced in the cerebral centres, and these have acted on the medulla and pons varolii, which again through the vaso-motor nerves, have caused a sudden contraction of the bloodvessels, producing in its turn disordered action of the heart, muscular tremors, and a sensation of general coldness. Observe that it is the conception, the imaginary picture, that has produced this. The cold face felt may have been of marble, or a wax mask; the result would have been the same so long as the man does not know the difference.

It appears, then, that the cold touch acted by evoking a mental image which may have been a very complex one. I might multiply illustrations, such as the production of nausea by the sight of a bleeding wound, of perspiration and purgation by fear, of rapid respiration and action of the heart by music or eloquence, or even by a vivid and life-like painting, of some of which effects almost every one has had experience.

Sometimes there are unusual connections between these ganglia, and then we have very curious phenomena of sensation or motion. We may, for example,

¹⁵ Outlines of Cosmic Philosophy, Boston, 1876, I, p. 61.

¹⁶ Thomson, (D. G.). Knowledge and Belief in Mind, July, 1877, p. 326.

¹⁷ Ferrier. The Functions of the Brain, p. 261.

have what is known as colored hearing, in which certain tones produce a sensation of color, so that the voice of one person gives rise to the sensation of red of another green, etc. If several of the ganglia are irritated at once we may have a result such as was produced in an epileptic, who said that he always knew when a fit was coming on by a smell of green thunder which he perceived. After his death it was found that there was disease involving the central roots of the nerves of hearing, smell and vision.

I do not assert that this explanation is correct, nor that it would be accepted by all modern physiologists; my purpose is not so much to discuss its merits as to point it out as a contrast to what I shall say hereafter.

It is possible that some of you may not, at first, see any special connection between this rather long and tedious account of the mummeries of savage medicine men and of the effects of what is called imagination; and the history of medicine, properly so-called, or the question of medical education, and yet I can assure you that it is of great importance to fully appreciate the power of which I have been speaking. It complicates almost every step in practical medicine, and especially all attempts to estimate the true power of remedies; it has given rise to more error and imposture, and has been, and still is, a greater hindrance to scientific medicine than perhaps anything else.

When attention is called to it, men are content to say that no doubt half of our diseases are imaginary, and can be removed by imaginary remedies, as if this were the whole matter. But when we speak of the power of imagination, or of the mind, or soul, on the body, we are greatly deceived if we suppose that we have explained anything, or that we have done more than merely to attach a name to the phenomena observed. We are using words as if they referred to definite cognizable entities, when, in fact, such is not the case. What definite idea can be gained from such phrases as a morbid imagination, a diseased mind, or the power of faith as a means of cure?

These may be, and in fact usually are, put aside as metaphysical and philosophical speculations, with which the physician has no practical concern; but this is a very great mistake.

The laws of life can only be known through the phenomena of mind, the laws of mental phenomena can only be studied through those of life, of life in abnormal as well as in normal conditions. Almost every day of his life the physician has to take into account mental peculiarities, if he does not degenerate into utter routine and formalism, and therefore it seems to me that a part of his education should consist in learning something about them. Those who condemn and depreciate metaphysics and philosophy, as unpractical and useless studies for a physician, will in the next breath tell you that a successful doctor must be a good judge of human nature. How is it then that one should acquire this judgment if not by the study of the phenomena of human nature, which I suppose to mean mental phenomena. It is perfectly true that the great majority of works on mental science are of little use or interest to the medical man, because they have no physiological basis; but this simply proves a defect in the method of study, and not the worthlessness or unimportance of the subject. It is not all a question as to whether the physician should philosophize,—that he must do,—the only question is, as to whether he shall do it well or ill.

But if the production of certain mental states, through impressions on the special senses of hearing, smell, sight, etc., can be used to modify the actions of certain organs of the body, and thus become an agent for the cure of certain diseases, and if this fact has long been known, you will naturally ask "Why is it that more use has not been made of it by educated and conscientious physicians?" As the Rev. Oswald Cockayne puts it:¹⁸

"From the cradle, modern Englishmen are taught to fight an angry battle against superstition, and they treat a talisman or a charm with some disdain and much contempt. But let us reflect that these playthings tended to quiet and reassure the patient, to calm his temper and soothe his nerves; objects which, if we are not misinformed, the best practitioners of our own day willingly obtain by such means as are left them. Whether a wise physician will deprive a humble patient of his roll of magic words, or take from his neck the fairy stone, I do not know: but this is certain, that the Christian Church of that early day, and the medical science of the empire by no means refused the employment of these arts of healing, these balms of superstitious origin. The reader may enjoy his laugh at such devices, but let him remember that dread of death and wakeful anxiety must be hushed by some means, for they are very unfriendly to recovery from disease."

The answer to this in brief is that these influences have been found to be much more powerful for evil than for good, that in ninety-nine cases out of a hundred their employment as a remedy will be either useless or will injure the patient, that when they succeed they tend to produce in others the morbid condition which they relieve in a few, and that their employment almost inevitably tends to the physical, mental, and moral deterioration of the person who tries to use them. Why, and how, this is the case, cannot be discussed here, but I will remind you that the answer is hinted at in Robert Browning's poem "Mr. Sludge, the Medium."

The moral of all this is, first, that no opinion as to the causes of disease, the effects of remedies, or the truth and value of so-called systems and theories of medicine can be made on a scientific foundation, unless the power and influence of belief, imagination, mind, brain, whatever you choose to call it, have been, by careful and repeated observations and experiments, eliminated as possible factors in the result which is to be judged; and, second, that it seems probable that mental phenomena, of the well and of the sick, should be a subject of study by the physician, and that this should be remembered in planning a course of instruction for medical men.

—The veterinary life has its drawbacks. A student, having been sent to administer a dose to a sick horse, was asked by his preceptor what success he met with. "None at all," he replied, "the horse bit me." The preceptor then explained that he should have put the powder into a medicine-tube, and, placing one end in the side of the horse's mouth, blow it into his throat; whereupon the student proceeded to act upon the suggestion. Returning again, he was asked what success he had this time. "None at all," he answered, "the horse blew first!"

¹⁸ *Lectures on, wortunement and stercraft of early England, being a collection of documents, etc., collected and edited by Rev. Oswald Cockayne, London, Vol. 1, 1864, p. xi.*

Address.

PROFESSIONAL REMINISCENCES.¹

BY BENJAMIN EDDY COTTING, M.D., ETC.

At Naples I was present at the daily evening deposit in one of the three hundred and sixty-six pits in the Campo Santo, the all-gathering receptacle of the city's dead poor. After a look into Herculaneum, a walk about Pompeii, and an ascent of Vesuvius, then active on its sides and not very indolent on top, we went on, stopping a few hours at Messina and Malta, to the Piræus; and thence to Athens by the *Skele makra*, or at least where they should be.

At Athens I was under the special charge of Dr. Roeser, the Queen's personal and household physician, who was ever at hand and constant in his attentions. He took me to the Royal Medical Society, where I was called upon to talk of ether and chloroform, and other subjects of interest at the time. A few days later the venerable Rev. Dr. Hill told me that my "assistance" and remarks had been very kindly received at the Society, which proposed to make me a corresponding member, and that the diploma would probably reach America before we did.

One day there was a sham-fight, and the taking of a fortified place just out of town, in which all the available troops were engaged for sake of practice. This was led by the King and Queen, the Queen riding at the head of the attacking party. An officer of high rank, injured by his horse's fall into a pit, was brought to a tent adjoining the King's pavilion. Having been taken there by Dr. Roeser to the injured man, surrounded by their Majesties and high army surgeons, I was requested, at the Queen's intimation, to make an examination of the case. I did this and made a report, which, corresponding to the diagnosis already made, seemed to give general satisfaction. I then went with Dr. Roeser to the officer's home to announce to his wife and family his condition, and to prepare for his reception.

At Athens I had several Greek patients, also through Dr. Roeser. One of these, a peculiarly sad-looking young girl in typhoid fever, seemed very much pleased with my attendance. As, at my suggestion, Dr. Roeser omitted medicine for a day or two, the family were subsequently inclined to attribute to me her restoration to safety and health. . . .

At Vienna I went through the usual rounds, wondering, as I went, how careful and painstaking for science, "how careless of a single life." I once saw there an eminent diagnostician literally almost turn a man inside out for a slight external ailment—examining every organ, cavity, and function, *ad absurdum*; till I could not help saying, as an old neighbor said to me of another's practice: "I would rather trust old dame Natur unaided, and let disease have its own way," than undergo such a diagnostic preliminary investigation. . . . Omitting many things—I must not forget the supremely cordial attentions from Dr. John Brown, of Edinburgh. Never was a kinder reception afforded any one. "Auld Reekie" and New Town, and all in and about them, he would have us

see and know; and his delightful talks made the visit most charming. He has recorded my call on him, in his own quaint way, in "Spare Hours; Second Series," page 328:

"I was greatly pleased when Dr. Cotting, of Roxbury, came in yesterday and introduced himself to me by asking, 'Where is Dick?' To think of our Dick being known in Massachusetts!"

Nor must I omit mention of my very pleasant call on the veteran, Dr. Stokes, at Dublin, and my visit to Meath Hospital. If the full allowance to the forlorn mortals there could be called "feedings," the wonder was what low diet would be. Meagre soups or broths may possibly be high living for poor wretches who naturally, as a professor once said to me, "never see a bit of meat from one year's end to another."

Losing my way in Dublin, I asked a trig and trim policeman the direction of St. Stevens Green. "Go," said he, "right square round, to the left, and you'll soon find it after mätting (meeting) you." Pretty well for a native! . . .

In 1863, when in Brazil for other purposes, I visited hospitals in various places. The principal, Casa Misericórdia, at Rio de Janeiro, especially in its newer portions, was a model. Its wards were arranged around pleasant and shaded court-yards, delightful to those in bed, as well as to the convalescents resorting to them. It was notable, also, for its high ceilings, with windows from the floor upwards; for absolute cleanliness; for the pleasing arrangement of its white-covered beds, with their red blankets rolled into cylinders at the foot-board. The medical attendants seemed fully posted in all the latest science of the day, and were very considerate to the sick in their charge.

The Dom Pedro II Hospital for the Insane, at Botafoga, is worthy of all praise. Our first visit there is fully described by Mrs. Agassiz in her "Journey in Brazil," pp. 80-81, where also a picture-page gives a very good idea of its situation and the surrounding scenery.

The Brazilians were then at war with Paraguay, and the Emperor, ever on the lookout for medical, as well as other scientific matters, called me to his palace to discuss with him anaesthetics and other methods of care for sick and wounded soldiers in the field, naturally supposing that our long Civil War had taught something in such matters. Recollections of these discussions undoubtedly led His Majesty, when in Boston, eleven years afterwards, to name me one of the seven he asked to breakfast with him. With this in mind, also, he was induced to wait over a day in order to attend the annual meeting of the Massachusetts Medical Society, and, contrary to his usual wont, to accept honorary membership in the Society.

And here I may be permitted to introduce an anecdote of my friend, the late Dr. Wucherer, of Bahia,—an extraordinary linguistic scholar and learned physician:

When the yellow fever raged in Bahia (a few years before I was there), to aid helpless sufferers and to quiet the people, Dr. Wucherer took yellow-fever patients into his house, and filled his grounds with booths and tents for those who could not find other shelter. For all this nobody thanked him; but some called him foolish for so doing.

A few seasons afterwards, an Austrian ship-of-war anchored in the harbor. A sailor, on shore by permit,

¹ Read, in part, before the Norfolk District Medical Society, October 25, 1887. Continued from page 35.

The *London Lancet* of December 31, 1887, received here since the last number of this Journal, in a review of the past year, says, "Both the spray and the gauze of the Listerian method are now rarely seen. That this is a gain who can doubt?"

became ill, and the ship's surgeon having named the disease yellow fever, Wucherer was called in consultation as an expert. He found the surgeon in error, but, to save him from disgrace, allowed the name to stand, and kept the patient under treatment and isolated until after the ship sailed. The surgeon was commended for his prudence, and Wucherer for his skillful services.

Months afterwards, when the affair had entirely passed from his mind, Dr. Wucherer was summoned from a social medical meeting by an official, to receive into his own hands the heavily-sealed credentials of Knighthood from the Austrian Government! The ship's captain had reported him as having probably saved the ship's crew from the dreadful disease.

He was accustomed, facetiously, to say of the whole affair, that "for serving the sick and the public at the supposed risk of his family and himself he got nothing but reproaches, but, for acting out a fractional white lie, he was knighted!"

Returning to America from Brazil by way of Europe, then the only direct way, I visited the great hospital of *Sau José* in Lisbon, where the ship made a stop for supplies, etc. I saw there, among other curiosities, an apparatus for the prevention of ante-mortem burials—a series of rings for the fingers and other attachments, operating, on the least motion, upon bells in a guard-room near by. Only once had an alarm been given, and then in a doubtful case, wherein death was indubitable on the following day.

On the evening of December 31, 1839, I attended the opening of the Lowell Institute of Boston, "assisting" Dr. Jeffries Wyman, its curator. In like manner, and for like purpose, I often went to the lectures. One season, I had the full charge during my friend's absence abroad. On his resignation in 1843, I received an appointment to the position which he had vacated. It has been a good thing for me in many ways—not the least in saving me from becoming a stereotyped example of my profession. No stranger—and I have met with many—ever, to my knowledge, "set me down" as a doctor of medicine from characteristic manner or conversation. One often needs a stimulus to keep him out of the ruts of his calling; "bayonets behind him," as an eminent lecturer said to me not long since, "to drive him out of routine tendencies." Besides, it gave me some acquaintances of inestimable value. To it I owe the ever-continued and confiding friendship of the late Prof. Louis Agassiz. He always, to the last, made my house his resort for rest from the labors and anxieties of his multifarious enterprises and schemes. He, with Dr. A. A. Gould, gave my home its name, and always manifested great affection for it and its inmates.

In 1847, I was elected a fellow of the American Academy of Arts and Sciences, a further evidence of the affectionate regard of Drs. Hayward and A. A. Gould, and Professor Agassiz.

On retiring from its council by legal limitation I started a subscription, which resulted in a liberal fund for printing the Academy's papers, "a good plant springing from the seed you sowed," said, in a recent note to me, the treasurer, in office at that time. In presenting my offering to start a project which had for a time been ineffectually talked of, I merely added that I felt it to be the most valuable paper it was possible for me to offer the Academy for the advancement of science.

One day, in the earlier months of my practice, a vagrant near by my office, despairing of being of any further use to the community, swallowed nearly two ounces of arsenic, and I was called to smooth his way out of the world. The affair becoming somewhat notorious, the then editor of the *Boston Medical and Surgical Journal* called on me for notes of the case. He was ever on the alert for remarkable cases, and I could not resist his persistent importunities.² This was the beginning and the cause, on the principle that one good turn deserves another, of a multitude of articles and scraps which editors of the *JOURNAL* have subsequently from time to time drawn from me to fill up with when other practitioners, older and abler and more experienced, had declined. Every thoughtful and progressive practitioner necessarily wishes to keep himself informed of the improvements in the science and art of his calling, and to know how others are treating disease. This can be done only through periodical publications, wherein for such purpose each should feel bound to contribute his portion to the general stock. The usual plea that one has not anything of interest or value amounts to nothing. Even the most trivial case may unexpectedly prove of importance. The immature report of the case just alluded to became the basis of a solid argument in a capital trial not many years afterwards.

One of my papers had unusual sequences—mind I do not say consequences. In 1852 the reader for the annual meeting of the Norfolk District Society failed near the last moment, and I was "pressed" in to supply his place. The paper which was then read the Society voted to print. I resisted; but after six months' importunities surrendered it to the secretary. He published it in the *Medical Journal*. Some time afterwards the then venerated Nestor of the profession addressed me with some friendly criticisms, and, in conclusion, remarked: "Well, I shall have to write you young men a letter." His "*Letters to a Young Physician*" followed. While this volume was in preparation another professor, getting a little the start, issued a collection of papers under the title of "*Nature in Disease*." This happened by chance to be the title of my own paper above referred to, published two years previously. He came to me with the proof sheets and asked me to write a notice of his book for the *Medical Journal*. I did so, and had the satisfaction of hearing myself accused of playing "toady" to a great man.

A copy of this book having been sent to Sir John Forbes, then writing on similar subjects, Sir John called his next publication, "*Nature and Art in the Cure of Disease*," avowedly based on the title of the book sent to him. Not long afterwards a third professor called at my house, and, after alluding to the other professors' publications, and adding that he, too, probably had loose papers enough to make a similar volume, produced a big bundle and asked me to arrange, edit, and publish the same! This cost me midnight oil for a number of winter weeks thereafter. The work appeared with the title of "*Surgical Reports*," and I wrote a notice for this also, by request.

I may add further that on the appearance of Sir John Forbes's volume, Dr. Jacob Bigelow asked me to collect, edit, and publish with him a series of suitable medical books and papers, the series to be entitled "*Rational Medicine*," and the first volume to be a re-

² See Boston M. and S. Journal March 7, 1834, p. 78.

publication of Forbes. Dr. Bigelow wrote a preface for the series, and I gathered together documents for the second volume. A publisher had already begun his part when a reprint of Sir John Forbes's book appeared in New York and killed the scheme. Dr. Bigelow's preface was afterwards published in his "*Modern Inquiries*," p. 245, where also may be found a list of my collection, with one addition, which Dr. Bigelow insisted on including in the number.

A rather unusual concurrence of sequences this after all.

Thus it was that I happened at first to be called upon to contribute to the *Boston Medical and Surgical Journal*. Thus it was that I became interested in its welfare, and was induced to help fill it up when others did not. In later times the demands for "copy" became quite frequent. In 1872 the editor was taken very ill and obliged at last to give up his charge. The case seemed desperate, and I was requested by the assistant³ to "lend a hand." After months of continued exertion with his able aid a new interest was awakened, especially in the younger men. The present plan was adopted, and more than thirty medical men (including the editor and his assistants), were secured as regular collaborators, and put in responsible positions in its service. Moreover, the JOURNAL was purchased of the printer,⁴ who had owned it for many years, and placed in the hands of the profession. All this of course cost time, labor, and thousands of dollars, cheerfully bestowed without a farthing's return to those who contributed, except the abundant satisfaction of seeing a prosperous medical journal in the possession of the profession, solely for their use, wholly independent of external or trade influences.

It seems to have been fated that I should have more than an ordinary share in "mending" the fortunes of Medical Societies.

In 1842, I was asked to become the President and revive the Boylston Medical Society of Harvard University, a Students' Society, but having a young graduate for its chief officer. For several years it had been dead, buried, and apparently passed resurrection. Taking five or six students into confidence and telling them my plans, we formed a governing board, and announced by a large printed placard a meeting of the Society. This done, inquiries of its nature and objects soon became frequent. Meanwhile (all the Society's previous records and regulations having been irretrievably lost), we had adopted by-laws, and began to admit members, on condition that they would take active part in its exercises and pay an entrance fee. This membership soon became a privilege and a distinction. Good work was done, and the College year ended with a full and active Society of over forty members. The same plans have been continued, with like success to the present time.

I was sought out and called to preside at the first meeting for the formation of the Obstetrical Society of Boston; and afterwards when, in the commotion of war time and from other causes, it seemed about to expire, I then, with a member, now years ago gathered to his fathers, arranged the plan by which it has enjoyed unusual prosperity ever since. Any one interested may find a full account in the Historical Sketch prepared and printed for that Society.

In 1855, on the lamented death of my class-mate, Parkman, I was chosen to his place as recording-secretary of the Massachusetts Medical Society. How this could happen greatly disturbed some of my professional neighbors who, I hope, were satisfied when they were told, by one of the gentlemen himself, that two of them had proposed my election without consulting me, and without any knowledge on my part of their purpose. I was continued in the office and that of corresponding secretary for more than eight years. Among other labors I prepared a Digest of the State Laws relating to the Society, and suggested and carried through a number of its more important By-Laws; notably one on ethics, by which all personal matters, and matters of discipline, are at once removed from public meetings, and relegated to a standing committee, to be dealt with according to merit—in private. I also prepared the "Annual Discourse" read to the Society in 1865, which created unusual discussions and criticism; and I had thought with that my duties done, and my course finished with the Society.

But when, some years later, the Society was in need of renovation and awakening, I was asked, at whose suggestion I never knew, to assist with others, in restoring its former prestige, and in placing it on its present prosperous course. It was a laudable project and was supported by the best men in the profession all over the State. But it required much labor, and not a little self-sacrifice. What was done is well known to the profession. I trust that I did my share of the work. Many disinterested fellows were personally engaged in the matter, and the results seemed to gratify the well-wishers of the Society. . . .

Thus the State Society, now on its renovated career, is a power for good to the profession, unsurpassed by any institution of the kind in the land. Its membership gives to the community also the surest evidence it can have that the aspirant for practice is a *Regular Physician*—a *happy term*, a truly fortunate one, as it indicates that its possessor has taken in preparation the *regular* established course, approved from all time: that he is thoroughly loyal to professional obligations; that he continues *regular* in following with assiduity every laudable means to acquire, from every and all sources, any and everything that will conduce to the good of the sick, and the advancement of his Science and Art, untrammelled by dogmas, unrestrained by sects, and not bound to any "exclusive or irregular system"; not fearing to heed the dicta of nurses when apt and fitting, or the "sayings" of old women—willing even *ab hoste doceri*.

To this large and influential Society, now numbering over sixteen hundred members, and ever increasing, the profession, and the individuals composing it, may look for adequate support, and a high position which not all the laws of legislatures can insure, and not all the machinations of detractors and charlatans can take away.

(To be continued.)

—Sir Andrew Clark, of London, is quoted as saying: "I worked twelve years for bread, twelve for butter, and twelve more for the luxuries of life."

—In the *Edinboro' Medical Journal* for January, 1888, Mr. B. Langley Mills, surgeon of the medical staff, Bengal, reports the death of a non-commissioned officer from hydrophobia one year and nine months after being bitten by a tame monkey.

³ Frank W. Draper, M.D., Med. Examiner Suffolk County, Asst. Prof. of Legal Medicine, Harv. Med. School, A.A.S., etc.

⁴ Mr. David Clapp, a gentleman to whom the profession is greatly indebted for many courtesies and loyal devotion through a long life.

Original Articles.

OXALURIA.

BY F. W. ELLIS, M.D., OF SPRINGFIELD, MASS.

By oxaluria we mean the presence of oxalate of lime in the urine. It is not a disease—it is, at most, only an expression or symptom of disease. It is doubtful if we are justified in considering the presence of a slight amount of calcic oxalate in the urine as abnormal. Traces of its presence in urinary sediments from individuals in apparently excellent health are very frequently met with. In some instances, the oxalic acid may be ingested in the vegetable food taken, for oxalic acid and the oxalates are found in very many plants. It is not likely, however, that these cases of slight oxaluria are always due to this cause. Every practitioner who has occasion to make frequent microscopical examination of the urine must be impressed with the number and variety of the cases in which calcic oxalate is encountered in this secretion. This frequency of occurrence tends to make us underestimate the importance of the subject. When we reflect upon the importance of the chapter in medicine and surgery devoted to urinary calculi, and when we recall the fact that one of the most frequent, and certainly the most dreaded, constituent of the calculi is calcic oxalate, nothing further is needed to indicate the interest that every physician should take in the subject of oxaluria. The calcic oxalate, or mulberry calculus, is harder than the other varieties, and, consequently, is the most difficult to crush and remove by lithotripsy. It is apt to be rough, and, as a result of this irregularity of surface, excite a great amount of irritation. Even when it does not form the main substance of the concretion, it often serves as the nucleus and starting point of others. For these reasons, every fact that tends to enlarge our knowledge of the mode of origin of calcic oxalate in the economy, and the causes of its deposition in the urinary tract, must be a desirable addition to medical science. Regarding the subject from this standpoint, no practitioner can question its importance.

There is, however, great diversity of opinion as to the diagnostic significance of calcic oxalate deposits in the urine. Since the first recognition of this substance as a urinary constituent, numerous contradictory statements have been made regarding the significance of such an occurrence. After an attentive perusal of the literature of the subject, and a careful consideration of the various theories advocated to explain the origin of the oxalic acid, one cannot escape the impression that something essential to the successful elucidation of the question has been overlooked, or has not yet claimed sufficient attention.

One of the mistakes generally made is that of regarding oxaluria as a disease, and not as a symptom. Oxaluria, like albuminuria, is a symptom. The causes of albuminuria are widely different in their character, and the same may be true of oxaluria. Hence, in seeking for an explanation for the appearance of oxalate of lime in the urine, we have no right to expect a single one applicable to every case.

In treating of oxaluria and oxalæmia, it will be useful, at the outset, to consider some of the undisputed facts bearing upon the subject. First, we know that oxalic acid is a poison. Fatal cases of poisoning with this substance are not uncommon. The careful experi-

ments of Koch¹ demonstrate that the soluble oxalates paralyze the muscles, heart, and nervous system. A solution of neutral oxalate of ammonium injected beneath the skin of a frog caused fibrillary muscular contractions, and paralysis of the voluntary muscles and the heart. The lethal dose, for the frog, was found to be 12½ milligrams of the salt. Experiments upon warm-blooded animals gave quite similar results when the drug was injected subcutaneously.

Another well-ascertained point is, that a certain proportion of the oxalic acid or oxalates introduced into the body through the stomach or subcutaneously reappears in the urine under the form of calcic oxalate. In the experiments of Koch just mentioned, crystals of oxalate of lime were constantly found in the kidney, and in that organ alone. In cases of poisoning by the acid, a large amount of calcic oxalate crystals can be obtained from the urine.

These two facts having been determined; namely, that oxalic acid is a poison, and that it manifests its presence in the system by its elimination in the urine as calcic oxalate, are we justified in assuming from these premises that whoever voids oxalate of lime in the urine is being poisoned? The views of different writers upon this point are very discordant. No unequivocal answer can be given to the question until investigations have been made to determine the effects following the long-continued administration to animals of small doses of oxalic acid and the oxalates. I am not aware of any such experiments having been made. Another subject for experimental investigation is the action of solutions of *calcic oxalate* upon the physiological processes. I think that we have very little reason to expect, *a priori*, that solutions of calcic oxalate should not possess toxic properties. Ringer² has endeavored to show that the soluble oxalates arrest function by the withdrawal of lime from the tissues. He asserts that a lime salt must be present in the circulating fluid, to sustain the contractility of the cardiac muscle. He reports the following striking experiment: The detached ventricle of a frog's heart was enclosed in a Roy's "tonometer," and was supplied with an artificial blood mixture through a perfusion cannula. A small amount of a five per cent. solution of oxalate of ammonium was then added to the circulating mixture. The ventricular contractions immediately grew weaker, and contractility ceased in a few minutes. The nutrient fluid was then diluted, but the ventricle remained inactive. A small amount of a one per cent. solution of calcium chloride caused a speedy return of the spontaneous contractions.

Ringer reports another interesting experiment which will chiefly interest us: He prepared two solutions, one containing chloride of calcium, and the other oxalate of ammonium. The proportionate amount of these ingredients were such that equal quantities of the two solutions nearly neutralized each other, a slight excess of the lime salt remaining. Of course, the combination of these substances produces oxalate of lime. It was found that when quantities of the two solutions sufficient to just neutralize each other were added to the fluid supplied to a frog's ventricle, the cardiac contractions became weakened. A sufficient amount of the *oxalate of lime* must have been dissolved by the circulating fluid to poison the cardiac

¹ Wirkung der Oxalate. Archiv. f. exp. Path. und Pharm., Bd. II, s. 153.

² Practitioner, Vol. 34, p. 81.

muscle. Hence Ringer admits that oxalic acid exerts a direct poisonous action upon the muscle, and what he asserts of oxalic acid, in the light of this experiment, would seem to be true of calcic oxalate. Although these experiments need confirmation, and require to be supplemented by a variety of others performed upon warm-blooded, as well as cold-blooded animals, it does not appear that we have any theoretical reasons for doubting that considerable amounts of oxalate of lime circulating in the blood must have a deleterious action upon the functions of the body. It is true, the urine of persons in apparently good health may sometimes contain a relatively large amount of calcic oxalate sediment.

Roberts² states that "subjects of mulberry calculus, especially children, are often in the enjoyment of blooming health." As an offset to this assertion, however, we have the authority of Ultzmann³ that weakly and anæmic children are the ones that are particularly predisposed to oxalate of lime calculus. Chambers⁴ asserts that under-fed children living in the country often have oxalate of lime in the urine. According to my own experience, a copious sediment of oxalate of lime is not often found for a considerable period in the urine of persons in vigorous health. Its long-continued presence in this secretion is generally indicative that some of the functions of the individual are not being performed as they ought.

The oxalate is very insoluble in water. This property tends to render obscure the explanation of its mode of elimination from the system. The acid phosphate of sodium, which is ordinarily present in fresh, normal urine, has been found to have a solvent action upon the calcic oxalate. This would explain why the oxalate is held in solution in fresh urine, and its gradual deposition, as the acid phosphate becomes converted into the neutral phosphate, in consequence of chemical changes taking place in the urine. This explanation, however, does not account for the solution of the oxalate in the blood, from which the urine is secreted. It has been found that some other saline solutions have a slight solvent action on the oxalate. The oxalate, moreover, is not perfectly insoluble in water. Storer⁵ gives the solubility of calcic oxalate in water as 1-500000. It has been estimated that ten ounces of water are capable of dissolving 1,000,000 of the crystals. That the oxalate can be dissolved in the stomach, is proven by the fact that it reappears in the urine after the ingestion of foods containing it. There can be no doubt therefore, that the substance can be dissolved, or held in solution in the alimentary tract, blood and the urine; but the laws regulating its solution and deposition have yet to be discovered. Why it should be deposited in the kidney or bladder of one patient, and another, whose urine is loaded with it, should escape, demands further investigation to determine. And, of the many unsolved problems connected with the subject of oxaluria, this is perhaps the most important. When the laws governing its solution and precipitation within the body are made manifest, we may reasonably hope to be able to prevent the formation of calculi composed of it in oxaluric patients. There seems to be no doubt that mucus favors the crystallization of calcic oxalate; acting in this respect, very likely, like a foreign body. The

crystals are generally found in the urine intimately mixed with the cloud of mucus that slowly falls to the bottom of the receptacle. The starting-point of many calculi is probably formed by a clump of mucus that has occasioned the crystallization of oxalate of lime about it.

There can be no doubt that the larger portion of the oxalic acid excreted, is manufactured within the body. There have been those, however, who have disputed this. Owen Rees first elaborated the theory that oxalic acid is produced from the decomposition of uric acid outside the body. The discovery of oxalurate of ammonium in the urine by Schunck, lent some support to this theory. Oxaluric acid is a decomposition product of uric acid, and is easily converted into oxalic acid; hence it was inferred that uric acid transformed into oxaluric and then oxalic, was the source of oxaluria. Basham gives an excellent exposition of this theory of the causation of oxaluria, in Reynolds's "System of Medicine."⁷ He there affirms in a very dogmatic manner, and with very scanty evidence, that "oxalate of lime, as a sediment in the urine, is of no other significance than that of a lithic acid diathesis." An excess of oxalate of lime in the urine meant for him an excess of uric acid in the system. It is an easy matter to demolish this theory. In the first place one of the cardinal doctrines of Basham and his school, namely, that the oxalurate of ammonium of the urine is changed to oxalate, was disapproved by Neubauer.⁸ He found that in progressive decomposition of the urine, the oxalurate of ammonium is changed directly into carbamate of ammonium, and not into oxalic acid and urea. Oxalic acid has been found in the blood by Cantani and Garrod. This oxalæmia cannot be accounted for by Rees's theory. The explanation, according to this theory, of the origin of renal concretions of oxalate of lime, would be very difficult. It is exceedingly improbable that the decomposition of oxalurate of ammonium can take place almost instantaneously after the secretion of a urine of normal reaction and perfectly free from every trace of fermentation. Renal calculi of oxalate of lime, however, are very common.

This is abundantly proven by the experience of Cantani,⁹ who cites numerous instances. I have recently had under my own care a case of the kind. The gentleman had been a recent sufferer from renal colic, and had experienced several severe attacks. He had presumably been treated for lithuria. Upon examination of the urine I found it loaded with oxalate of lime. The patient had luckily saved a calculus of about the size of a pea, that he had passed through the urethra. I found this, upon analysis, to consist almost wholly of calcic oxalate. I never found any excess of uric acid in the urine. If the urine and the calculus had not been carefully analyzed, it would have been natural to have considered the case one of lithiasis, and to have treated it accordingly. Oxalate of lime is probably a much more common cause of renal colic than is generally supposed; and for this reason the urine of patients afflicted with this disease, should always be carefully examined. Oxalate of lime may be found, indicating the cause of the painful paroxysms.

² Urinary and Renal Diseases, fourth edition, p. 103.

³ Die Harnconcremente.

⁴ Manual of Diet, p. 271.

⁵ Ralfe, Morbid Urine.

⁷ American edition, Vol. 3, p. 619.

⁸ Neubauer and Vogel, Analysis of the Urine. Am. Ed. p. 169.

⁹ Die Stoffwechselkrankheiten.

Another fact disapproving the theory of Rees, and one that may not be generally known by the medical profession, is that oxaluria is common among horses. Williams¹⁰ speaks of its occurrence in horses that are irregularly worked, like hunters, and those too abundantly fed with saccharine substances, as turnips and carrots. I have examined the urine of a number of horses and I have found oxalate of lime very frequently. In a stable containing five horses, I found abundant deposits of oxalate of lime in the urine of three of the inmates. In one instance the urine was literally loaded with it. The form of the crystals in this case was not the typical octahedral, but was a four-sided prism with pointed ends. This form is very rarely found in man, and might be easily mistaken for other crystalline constituents of the sediment, were not careful micro-chemical tests applied to reveal the true nature of the crystals. The horse excretes a large amount of hippuric acid, but very little uric. We have no reason to suspect that the decomposition of hippuric acid is a source of oxalic acid.

For these and other reasons the theory that the excreted oxalic acid is formed in the urine outside of the body cannot be sustained. We cannot affirm that oxalic acid is never formed during the decomposition of the urine, but we have abundant proof that this is not the ordinary cause of oxaluria.

Some of the other theories to account for the presence of oxalate of lime in the urine are more probable. A conservative *résumé* of these theories is given by Salkowski and Leube.¹¹ They all have the common defect, that while they may seem to be sufficient to explain the occurrence of oxaluria in some instances, they are entirely inadequate to do so in others.

The theory most commonly accepted is that the oxalic acid originates in defective metamorphosis within the body. Cantani is one of the ablest advocates of this theory. In his elaborate work upon the diseases of metamorphosis, he takes the ground that oxaluria is due to a condition akin to that of diabetes. He believes that the oxalic acid originates from the abnormal disintegration of the carbo-hydrates. There are many facts that lend probability to this view. The acid is very readily prepared in the chemical laboratory by the action of reagents upon sugar, starch, and cellulose. This fact would seem to render probable the possibility of its formation from the imperfect oxidation of these substances in the body. Cantani's mode of treatment for oxaluria is based upon this theory. He states that the condition is especially common in individuals indulging to excess in sweets and starchy foods. His treatment consists in very largely withdrawing these articles from the food and substituting an anti-diabetic diet. He claims to have permanently cured many patients in this way.

But we find other recognized authorities maintaining that oxaluria is the result of imperfect metamorphosis of nitrogenous substances. This was Beneke's theory. It has been found that oxalic acid cannot be made to wholly disappear from the urine of fasting animals. I have found calcic oxalate quite abundantly present in the urine of a patient subsisting entirely upon a moderate amount of milk-punch.

Tyson¹² advises that in the treatment of oxaluria

the patient be allowed only a moderate amount of nitrogenous food, and in bad cases no meat at all be permitted. It would be hard to explain the good effects of both Cantani's and Tyson's widely different modes of treatment upon the assumption that the theory of one alone is correct. Before endeavoring to reconcile the apparent incompatibilities existing in the views of these two authorities, it may be well to consider some of the other possible sources of oxalic acid in the body.

Various authors have endeavored to trace a connection between the formation of mucus and that of oxalic acid. Hoppe-Seyler¹³ states that the crystals of oxalate of lime are especially abundant in catarrh of the urinary passages, and of other mucous membranes. He also affirms that the connection between impaired respiration and the excretion of calcic oxalate has not been proven. Ralfe¹⁴ also accepts the possibility of the formation of oxalic acid from the decomposition of mucus, and gives considerable prominence to the theory. He states that crystals of oxalate of lime have been found in the mucus of the gall-bladder, and in the gravid uterus. Fürbringer also found them in the sputum of the diabetic. Ralfe is inclined to the view that the numerous oxalate of lime crystals found in the urine of patients suffering from spermatorrhœa are derived from the mucus of the genito-urinary passages. Ultzmann¹⁵ has remarked the frequent association of oxaluria and spermatorrhœa and urethral disease. He says that he has often caused the oxaluria to disappear by local treatment of the urethra. I myself, have had several cases of true spermatorrhœa associated with oxaluria. I also recall another interesting patient who was troubled with an obstinate prostatorrhœa whose urine was loaded with calcic oxalate. I have never, however, felt the necessity of attributing the oxalate of lime found in such cases to the presence of seminal fluid or mucus in the urine. The case that I have already mentioned of the gentleman that had suffered from a severe renal colic is sufficient to demonstrate that there is not necessarily any reason for attributing oxaluria to the presence of semen in the urine. In the many specimens of the urine of this patient that I examined I never failed to find a large number of spermatozoa. These specimens were passed at different times of the day, some of them during my visits. The formation of the oxalate of lime calculus in the kidney in this case showed that there could be no direct connection between the oxaluria and the spermatorrhœa. The crystals of the oxalate could be found very soon after the urine was passed, long before we could have any reason to suspect that any decomposition had taken place. The form of the crystals in this case was very suggestive. They were apt to be small and of irregular form, resembling those obtained by immediate precipitation upon the addition of a solution of oxalic acid to one of calcium chloride. They seemed to denote that the urine was surcharged with the oxalate and that many of the crystals were formed almost instantly after the secretion or excretion of the urine.

Although such cases as the above do not support the theory of the formation of oxalic acid from mucus, there are certain facts that render probable the possi-

¹⁰ Principles and Practice of Veterinary Medicine, 3d ed., p. 419.

¹¹ Lehre vom Harn, s. 419.

¹² Boston Med. and Surg. Journal, Vol. 115, p. 365.

¹³ Physiologische Chemie, s. 825.

¹⁴ Loc. cit.

¹⁵ Die Harnconcremente.

bility of such an event. It has been found by Landwehr and by Hammarsten¹⁶ that a decomposition product can be obtained from mucin having the properties of a carbo-hydrate. The further decomposition of this carbo-hydrate, which Landwehr calls animal gum (*thierische Gummi*) might yield oxalic acid. Behrens¹⁷ calls attention to the frequency with which calcic oxalate is found in the vicinity of, or even in, slime-bearing cells of plants. Although it may not be fair to compare the slime of plants with the mucus of animals, there are points of similarity in some of the physical properties of the two substances. Plant slime, moreover, readily yields oxalic acid when treated with nitric acid.

I think that, perhaps, I have already dwelt too long upon the conflicting theories that have been advanced to account for the formation of oxalic acid in the body. I can only briefly allude to others. The theory of increased oxidation has been advocated to explain certain cases. The objections to the general application of the theory of impaired oxidation would apply to this one. Theoretically, perhaps, increased oxidation and metabolism with the formation of incomplete products, would explain some cases of oxaluria, but in default of experimental and clinical proof of the correctness of the hypothesis, we cannot profitably discuss it here.

Among all the multitude of diseases and conditions in which oxaluria has been found there is one symptom or condition, and perhaps only one, that has been very constantly met with, namely indigestion. The frequent occurrence of dyspepsia and all the symptoms usually accompanying it with oxaluria has been often noticed by various writers. Some have been inclined to make the dyspepsia secondary to the oxaluria, others to make the oxaluria in some way dependent upon the dyspepsia. The acid theory was an outgrowth of this last endeavor. It is well known that organic acids are oxidized in the body and converted into carbonic acid and water. It is fair to presume that impeded oxidation of the organic acids that are produced by fermentation in dyspepsia may end in the formation of oxalic acid. This theory would seem to account for the majority of cases of oxaluria better than any of those that we have hitherto considered. But there is another probable source of oxalic acid in the body which has been strangely overlooked. It has been assumed, nearly without exception, that the oxalic acid that originates here is formed either in the blood or in the substance of the organs and tissues. It does not seem to have occurred to the writers upon this subject that oxalic acid can be formed, like various other organic acids, in the alimentary tract. Reasoning, clinical observations and experiments have rendered it very probable to the writer that oxaluria may be due to this cause. Although I have consulted the literature of oxaluria quite extensively, I have only found one author who has alluded to this possibility. Chambers¹⁸ hints of such an origin in the following passage: "Chemists tell us that citric, malic, and other organic acids distributed through the vegetable world are liable to conversion into oxalic, so that it is not necessary that it should naturally be a constituent of the food eaten, but may arise during its fermentation or digestion." We are left in doubt as

to whether the author means by this that the oxalic acid may be directly produced in the alimentary canal in consequence of abnormal fermentation, or whether from the imperfect oxidation, after absorption, of other products of fermentation. He contents himself with this bare allusion to the possibility of the manufacturing of oxalic acid from the food during imperfect digestion. Medical literature, however, has recorded many facts that lend great probability to this theory. Food that does not digest ferments, or decomposes, much in the same way as it would under similar conditions of warmth and moisture outside of the body. Decomposition and putrefaction play a part in the disintegration of the food in the intestines, even in normal digestion, and this part is a much more extensive one than is commonly supposed. Every physician will be profited by reading the section in *Hermann's Handbuch der Physiologie*, in which Maly¹⁹ describes the activity of bacteria in reducing the contents of the intestines to the condition that they have in the faeces. The intestines, particularly the lower portion of them, are swarming with bacteria. The faeces are filled with a great variety of micro-organisms. Any one can easily convince himself of the truth of this statement by microscopical examination. Given warmth, moisture, innumerable bacteria and a quantity of easily decomposable organic matter, putrefaction is inevitable, unless some substance be present to arrest the action of the bacteria. Bile is the natural disinfectant of the intestines, but this is incapable of preventing all putrefactive changes in the alimentary tract. Indican, one of the most constant constituents of the urine, is ever a witness of the insufficiency of this anti-fermentative action of bile. Indican is derived from indol, and Maly states that there can be no indol or inflammable gas produced in the intestines without bacteria. He further affirms that the products of pancreatic decomposition do not have any physiological uses.

Digestion is essentially a process by which insoluble substances are converted into others capable of being absorbed into the blood. True digestion is accomplished in a relatively short time. Very likely, too, the digestive ferments may have some restraining influence on the action of the bacteria. But when digestion is delayed, or is not accomplished, the micro-organisms present in the stomach and intestines assert their power; and we could scarcely devise more favorable conditions for the cultivation of bacteria than exist in the lower part of the intestines. That these bacteria manufacture, in many instances, very virulent poisons, has been abundantly proven by recent researches upon the subject of ptomaines. It is a constant source of wonder to one investigating the subject that cases of poisoning of this origin are not more common than they appear to be. But, in all probability, ptomaines are not the only poisonous substances manufactured in the alimentary canal. Many organic acids are produced during the fermentation of food. Brieger²⁰ has isolated various species of bacteria existing in the faeces, and has cultivated them outside the body. He also studied the action of these micro-organisms on fermentable solutions, and obtained, in this way, various organic acids. He does not record the finding of oxalic acid; but it is not evident that small amounts of the acid would have

¹⁶ Studien über Mucin, etc., Pfüger's Archiv, Bd. 36, s. 373.

¹⁷ Hilfsbuch zur Ausführung Mikroskopischen Untersuchungen im botanischen Laboratorium, s. 210.

¹⁸ Manual of Diet, p. 271.

¹⁹ Pankreasfäulnis, Bd. V, Abth. 2, s. 218.

²⁰ Zeitschrift für physiologische Chemie, Bd. VIII, s. 806.

been recognized by the methods of analysis that he employed. Investigations of this character are very important, and promise to shed a good deal of light upon questions of great physiological and pathological interest; and it is very desirable that this line of experimentation be followed out.

Flügge places oxalic acid in his list of substances resulting from the activity of bacteria. If oxalic acid can be manufactured by bacteria outside of the body, it seems altogether probable that the same process can take place in the intestines. Salkowski²¹ states that crystals of oxalate of lime are not infrequently found in microscopical examination of the contents of the large intestine. He does not say what the probable origin of these crystals is. Either they must have been taken into the body in the food, or they must have been due to the combination of oxalic acid manufactured in the alimentary canal with lime, unless we are disposed to admit that oxalic acid may be eliminated through the intestines, which seems in no way probable. We should also bear in mind that octahedral crystals of oxalate of lime, like those ordinarily found in the urine, are not common in plants containing the acid and its salts. The crystals in plants are apt to exist in irregular aggregations of these octahedral forms, or as needle-shaped crystals. We, therefore, have good reason to suppose that the oxalate crystals found in the intestines are due to oxalic acid formed in the digestive organs. Of course, if oxalic acid is formed here, there is no reason why it should not be absorbed into the blood and give rise to oxaluria. I have made microscopical examinations of the feces of several oxaluric patients. Although I have found octahedral crystals here, I have never been convinced by chemical tests that they were composed of oxalate of lime. For several obvious reasons, it is not a very easy matter to detect minute crystals scattered through such a mass of detritus as exists here. Such examinations, however, are promising, and should be repeated.

It seems to me, in the light of what has been said, that we have a right to assert that the theory of the formation of oxalic acid in the digestive organs is a very probable one. Several experimenters have unconsciously corroborated this theory. Fürbringer²² made an elaborate series of experiments to determine the influence upon the excretion of oxalate of lime of the ingestion of alkaline bicarbonates, lime-water, and uric acid and the urates. The results of these experiments was mostly negative. In one of his observations, however, he casually records a great increase in the oxalic acid excretion coincident with diarrhoea. This occurrence is to me very suggestive. An ordinary diarrhoea means increased fermentation and putrefaction in the intestines. If oxalic acid has a source in this putrefaction, then the association of oxaluria and diarrhoea ought not to surprise us.

Hammerbacher²³ afterwards repeated some of these experiments of Fürbringer, and investigated the effect of alkalis upon the excretion of calcic oxalate in dogs. He mingled enormous doses of bicarbonate of soda with the food of these animals, and found that the amount of calcic oxalate in the urine was considerably increased. In one instance, at least, the large doses given caused vomiting and loss of appetite. The doses given ranged from five to twenty grammes.

When we compare these weights with those of the dogs experimented upon, we see that the doses were excessively great. The digestion must have been profoundly disturbed by them. If the food did not digest it putrefied, and oxaluria was the result. This may not be the correct explanation, but it appears as probable as any that we can give. It does not, however, seem to have occurred to the author.

Mills²⁴ performed some experiments upon a dog in "nitrogenous equilibrium," to determine the effects of various forms of diet upon the excretion of oxalic acid. He notes that a very large amount of the acid was excreted upon a dog following diarrhoea. The fact speaks for itself.

I may add that oxalic acid is frequently found in the urine of hogs. Calculi consisting of almost pure calcic oxalate are sometimes found in the bladder of these animals. I have examined hogs' urine only once; but in this instance I found a great number of calcic oxalate crystals, after allowing the urine to stand for a long time. When we consider the character of the diet, and the habits and environment of these animals, we have every reason to suppose that bacteria have an especially attractive field of operation in their intestines.

Williams²⁵ says that oxaluria in horses is apt to be accompanied by symptoms of acid-dyspepsia. The horses in which I have most often found oxaluria are those that are highly fed and little exercised: such animals are, of course, specially liable to digestive troubles.

Brunton²⁶ remarks that the deposition of oxalate of lime is usually connected with disturbances of the digestive system; and he further states that he has observed, in a hospital ward, that a deposit of this substance is commonly found in the urine after the patients have had cabbage for dinner. This occurrence serves to strengthen the theory of the formation of oxalic acid from the decomposition of food. Probably nothing would be more likely to afford an intestinal bacterium a greater opportunity for the exercise of its functions than an abundant supply of cabbage.

The association of icterus and oxaluria has been noted by certain writers. Murchison²⁷ thought that oxaluria might be connected in some way with liver trouble. As bile is the natural disinfectant of the intestines, when its flow is obstructed decomposition can more readily take place. This would be a natural explanation of the occurrence of oxaluria with icterus. Indigestion means an increased opportunity for bacteria—an opportunity that they are always ready to seize.

The writer does not claim that the theory advanced here to account for the formation of, at least, some of the oxalic acid excreted from the body has been demonstrated beyond controversy, but it certainly demands consideration. If it be true, then the treatment of oxaluria resolves itself into that of dyspepsia.

—The Grocers' Company's prize of \$5,000 for the discovery of a method for the cultivation of vaccine contagium outside of the animal body, was not awarded, and the same problem is again proposed, papers to be submitted by December 31, 1890.

²¹ Salkowski und Leube, *Lehre vom Harn*, s. 114.

²² *Deutsches Archiv für Klin. Med.*, Bd. 18, p. 143.

²³ *Pflüger's Arch.*, Bd. 33, p. 89.

²⁴ *Journal of Physiology*, Vol. V, p. 231.

²⁵ *Loc. cit.*

²⁶ *Pharmacology and Therapeutics*, p. 377.

²⁷ *Functional Derangements of the Liver*, p. 75.

CASES OF DIABETIC COMA, WITH REMARKS.¹

BY FRANCIS MINOT, M.D.

THE term diabetic coma is applied to that alarming state of insensibility, often occurring suddenly, which is sometimes observed in diabetic patients, even when the symptoms have not given rise to apprehensions of approaching death. Although the appearance of the patient is strongly suggestive of the presence of some poison in the blood, the toxic agent which causes this condition has not as yet been determined, and I am not aware of any material addition to our knowledge since the interesting paper on the relations of diabetic coma to acetonaemia and fat embolism by Dr. Fitz was read before the Society for Medical Observation eight years ago.

It is not my purpose, however, to discuss the pathological aspect of diabetic coma, but to call attention to the fact that it may occur suddenly in a patient not known to have been diabetic, or not even suspected to be ill at all, thus giving rise to much perplexity as to the diagnosis. Two such cases have come under my observation during the past year, which seem to be of sufficient importance to be reported. Each of them caused much alarm to the friends of the patient, and both were inexplicable to the physicians who were called in the emergency to see them for the first time. Diabetes is not a common disease, and coma occurring in patients not known to be diabetic is so rare, that one may be excused for not recognizing it at once.

The first case was that of a young woman, twenty years old, married, being, as was supposed, in her usual health, who was taken with vomiting in the afternoon of January 30, 1887, after eating a hearty dinner, and gradually became unconscious, remaining so until she died, at two o'clock in the morning of February 1st. I was asked to see her in consultation, a few hours before her death, by a physician who had been called in at 3 o'clock, A. M., of the 31st, having had no previous acquaintance with her. I recognized her as a patient who had been sent to me about six months previously for an opinion, by Dr. W. B. Bancroft, with a letter stating that she had the usual symptoms of diabetes, and was passing about seven pints of urine in twenty-four hours, containing a large amount of sugar. It seems that soon afterwards she became discouraged, on account of the persistence of her symptoms, and consulted various irregular practitioners, but had no regular attendant at the time of her seizure. The patient was of a nervous temperament. Her grandfather by the mother's side died, after some years' illness, of a "spinal disease and diabetes"; her father's family was consumptive, and he died of "tubercle of the spinal cord."

When I first saw her in July, 1886, she stated that the amount of urine and the general symptoms varied a good deal. At times, the quantity of urine would be normal, and once it remained so for two weeks. The appetite had been "ravenous" from the beginning. She perspired freely. When I saw her for the second time, she was four and a half or five months advanced in pregnancy. Her friends said she had felt the motion of the child for the first time the day before her attack. She was so much scented with artificial perfume, that I was unable to tell whether her breath was sweetish or not. She had a pulse of 160, the

respirations varied from 32 to 36 in the minute, the mouth was dry, the fetal heart could not be heard. She was wholly unconscious. I afterwards learned that a short time after my visit she suddenly sprang up in bed; the head was drawn downwards and to the left, pupils dilated, flexor muscles of arms and hands tonically contracted for about five minutes, after which relaxation ensued. Five hours later another attack occurred, in which she died. The urine was last voided twenty-four hours before death, in small quantity, but had not been saved. If the previous history of this patient had not been accidentally discovered, the cause of death might not have been recognized. It would probably have been reported as apoplexy or unknown.

The other case was even more remarkable, inasmuch as the patient was not supposed to be ill at all before his attack. He was a lad fifteen years old, who complained of not feeling well, but without definite symptoms, on the morning of April 17, 1887; he ate a good dinner, however, including some plum-pudding. Towards evening he felt worse, and he went to bed early. He speedily became somnolent, and, before morning, was quite insensible. A physician was called in, who was unable to account for the symptoms. I saw the boy in consultation in the forenoon, and found him in an unconscious condition; pulse 144, weak; respirations 20. There was no paralysis. The face was flushed, the cheeks cyanotic, eyes closed, pupils natural, sensitive to light. The breath had a sweetish odor. Plantar reflex good on both sides. The abdomen was excavated, showing, as did the thorax, great emaciation. In answer to my questions, his mother said that he was an active and intelligent boy, and had been in good health, so far as noticed, up to the present time, though he had been losing flesh of late. He had just had a week's school-vacation, during which he amused himself with active sports, as usual, playing base-ball most of the time. Some two or three months previously to his sickness he had wet his bed in his sleep, a thing he never did before. The amount of urine was very large, and it was noticed that after the sheets were dried they were stiff and sticky. It was then found that he had been making more water than usual; also, that he drank a large amount of water, sometimes a pitcherful at a time, and that his appetite was very great. Indeed, it seemed ravenous, and he bolted his food without chewing, in a way which had not been customary with him. His diet had been a miscellaneous one, including a good deal of fruit. With this history, there could be no doubt as to the existence of diabetes, probably saccharine, and an examination of some of the urine which happened to be saved showed that it was pale, acid, specific gravity 1028, containing a trace of albumen, hyaline casts, and eighteen grains of sugar to the ounce. The addition of tincture of chloride of iron gave a wine-red color to the urine. The patient died at midnight following, without having recovered consciousness.

These cases are examples of death occurring under circumstances of great obscurity, in which the course had been overlooked from omission to obtain the complete history of the preceding symptoms, which would have explained the cause of the patient's condition, even if no urine could have been obtained for examination.

Fatal coma is also liable to supervene unexpectedly

¹ Read before the Boston Society for Medical Improvement, December 12, 1887.

in cases of diabetes which are apparently improving under treatment. The daily excretion of urine may fall to the normal amount, its specific gravity may diminish, the sugar may almost disappear, and a general amendment may take place, when the patient suddenly becomes unconscious, sometimes without obvious cause, and remains so till his death, which usually occurs within twenty-four hours, or a little later. Many years ago, I had an opportunity of observing such a case. The patient was a lady, fifty-five years old, a widow, of nervous temperament. Two years before I saw her she became insane, the effect of a severe bereavement, and was in an asylum for several months, after which her health became good until shortly before the time when she consulted me, in December, 1857. She had noticed that she was troubled with frequent micturition since the month of May previous; also, she complained of pain in the back, and afterwards, of extreme thirst. There was great debility and some loss of flesh, she having previously been quite stout. The daily amount of urine was about seven pints, its gravity was about 1040, and it contained 9.2 per cent. of sugar. She was treated with alkalies (four and a half drachms of bicarbonate of soda daily), a hot air-bath at night, and an appropriate diet. There was an immediate improvement in all respects. The amount of urine became normal, although its specific gravity did not diminish. The patient was no longer obliged to rise during the night, the thirst ceased, the skin became moist. She slept well, and was in good spirits; the strength improved, and she walked or drove out daily. On the 29th of January, 1858, more than six weeks from the time I first saw her, the weather being very cold and damp, she unfortunately went on a shopping expedition, and got chilled. There was no change in her condition on the next day, the 30th, when it was recorded: "urine varies between three and five pints" daily; "thirst very moderate, strength rather improving, some perspiration, walks out almost daily, sleeps well, is much more calm and cheerful." But on the 31st she complained of return of the back-ache and of the thirst, though there was no increase in the amount of urine. She took her vapor-bath at bed-time, as usual, but had a very restless night. At four o'clock of the morning of February 1st, and at intervals during the day, she vomited large quantities of a dark-colored, sour-smelling fluid. During the following night she became unconscious, and remained so to the time of her death, at 1 A. M. of February 3d.

At the post-mortem examination, the body was observed to be very fat. No evidence of disease was found in any organ. The kidneys appeared perfectly healthy, but a microscopic examination by the late Dr. Calvia Ellis showed that the tubuli, both of the cones and of the cortical substance, were everywhere filled with minute fat globules. Many free globules of fat were also seen, and a large amount of brownish, granular matter. These appearances in the kidneys were undoubtedly secondary.

The intrinsic cause of diabetic coma is, as I have said, at present unknown, and it must remain so until the noxious product of the abnormal processes of metamorphosis is discovered. Nor are its exciting causes much understood. In many cases, no special change in the patient's diet, no exposure to cold, or other external depressing agency, have occurred before the supervention of the comatose state. In

others, the coma has followed so closely upon fatigue, cold, excess in diet, mental emotion, etc., that it is reasonable to suppose that such influences precipitated it, at least.

The prognosis in respect to the state of unconsciousness is extremely unfavorable. Nevertheless, in a few cases there has been temporary improvement, and even complete recovery from the threatening symptoms; but this has not appeared to result from any special mode of treatment.

REPORT ON MENTAL DISEASE.

BY HENRY R. STEEDMAN, M.D.

OVERWORK IN SCHOOLS.

LUYS' in a recent discussion before the Académie de Médecine, takes a different view of the question of overwork in schools from that usually presented. Peter had maintained that the outbreak of pulmonary tuberculosis in the young, was intimately connected with mental over-exertion. This, Luys doubts. The two phenomena he believes have no connection; and he supports his argument by citing one thousand and eighty-six observations of patients, with what might be called chronic cerebral overwork, from paralysis agitans, mania and delusional insanity, in but six of whom was the outbreak of phthisis at all coincident with the signs of increased cerebral activity. Phthisis when it occurs, he believes to be due to unfavorable hygienic surroundings, rather than to any undue strain upon the brain.

Turning from the question of the development of tuberculosis to the main question of overwork in schools, Luys begins by giving some figures as to the anatomical development of the brain. According to Lœnning, the average weight of the brain of a child of six is 1,087 grammes, of an adult 1,323 grammes, a difference of 236 grammes. Individual cases are also cited to show that not infrequently the adolescent brain before the age of twenty has reached nearly, if not quite, its full weight; cranial measurements, moreover, show that the skull is very little smaller in the youth than in the adult, one or two centimetres less in its antero-posterior diameter in children of six to ten, than in their father at forty. The difference in the fissures and convolutions of the adolescent and adult brain, is not perceptible. Therefore, being nearly, if not quite as fully developed, the brain ought to be nearly if not quite as capable of work.

Luys therefore doubts whether in the average child there be such a thing as cerebral overwork, as we see it in the adult. The child is only a small portion of the day at his studies, and furthermore, he has long vacations. Their work is much less serious and is limited mainly to the purely intellectual regions of the brain. The emotional regions and their conscious personality are entirely at rest, while in the adult every intellectual act is intensified by a still greater emotional activity which may thus more readily lead to over-exertion. The child's work, on the contrary, calls into chief activity the memory and the imagination, judgment, discernment, the conscious personality are all inactive. The disproportion between the work required and the capacity of the adolescent brain is therefore much less than has been imagined, and the

dangers of overwork in schools have consequently been greatly exaggerated. There is, however, a class which is likely to succumb to the routine of school duties, and this class is made up of "héréditaires" who have a paralytic father or a neuropathic mother. They are fond of work, zealous and ambitious, but they soon break down, they become restless, easily fatigued, are subject to headache or insomnia or become somnambulists. They also show other symptoms of graver import; the memory fails, they become absent-minded, they suffer from vertigo, or even, as in one case, from epilepsy, as a result of overwork. They keep up with their fellows for a time, but eventually they have to give way. Physically, their heads are too large or too small for their bodies, the cranial vault is irregular in shape and the sutures are marked by irregular thickenings.

Luis, therefore, concludes that phthisis is excessively rare in a certain class of mental subjects; that the course of study should not be diminished in regard to the required amount of work, since the adolescent brain at eighteen is nearly as large as the adult brain, although it might be well to vary the mode of presentation of the subjects, so as to render them more interesting, and to appeal more to the conscious personality of the child. He believes that we must look to the future interest of the race and that the human brain is increasing in volume. We therefore should not seek to abridge a course of study, but to make it more ample to correspond with the advance in our knowledge.

THE COMMUNICABILITY OF INSANITY.

D. Hack Tuke in remarks upon *folie à deux*,² said that he believed that the influence of the insane upon the sane was exceptional, that those who became insane from association with the insane, are usually neurotic subjects or somewhat feeble-minded; that women become so affected more frequently than men; that delusions possessing some appreciable ground-work or plausibility are the most commonly transmitted; delusions of persecution and the like are often seen in these cases. Among the practical conclusions of the paper were:—(1) Medical men ought to be alive to the considerable danger of one insane member of the family endangering the mental health of another member. (2) One sister should not nurse another when the latter becomes insane. (3) Susceptible young women whether related or not, should not associate intimately with lunatics. (4) When mental disorder is transmitted or when, from whatever cause, persons who are associated become deranged, prompt separation should be effected and complete change of scene secured. The well-known rarity of insanity among attendants on insane, is illustrated by a remark of Dr. O'Meara. Only two females among the attendants in his asylum became insane during his experience of thirty-one years.

HYSTERICAL MUTISM AND MENTAL DISEASE.

Cases of hysterical mutism have frequently been reported, and although very incompletely described, the condition has been given more or less notice in most works upon hysteria. It has remained for Charcot³ to isolate the distinguishing features of this group of symptoms in clinical lectures upon this special sub-

ject. He has invested it with additional interest by revealing entirely new characteristics, throwing much light on known ones, and systematizing our knowledge of this condition, one which in all probability has its seat in the cortex, is in every case of the dynamic order, and has strongly marked characteristics which are easily recognized. Cartaz,⁴ also, in a very interesting monograph, giving the substance of these lectures analyzes the reports of twenty cases, six of which are taken from Charcot.

Bouchaud⁵ takes up the relations of mental disease and hysterical mutism. He prefaces the following account of a most unusual case by remarks upon the diagnosis. It is now, he thinks, easy to diagnose between hysterical mutism and the mutism of motor aphasia of organic origin as well as that of bulbar lesions, not to speak of feigned dumbness. As an unimpaired mental state is one of the chief characteristics of this form of mutism, it would seem impossible to confound it with the mutism of mental alienation, and this accounts for Charcot's unfortunate omission of any mention of the mutism of insanity where it is common enough, being found in delusional insanity and in melancholias, and as a frequent symptom of stupor. Sometimes it is purely voluntary, in which case it is not always possible for the observer to ascertain the nature of the delusion which impels the patient to keep silent. This explains the difficulty which may arise in deciding in certain cases whether we have to deal with insanity or hysteria.

The case in question is that of a shoemaker, twenty-six years of age. He was admitted in March, 1886, to the asylum of Lommelet, by transfer from another asylum where he had been treated since 1885. His certificate stated that he had been suffering from an attack of melancholia with hallucinations of sight and hearing. That he had developed almost complete mutism so that the precise nature of his hallucinations could not be ascertained, but to judge from his facial expression, they were depressive. His condition was thought to be stationary, and the disease probably chronic.

Soon after admission, the patient wrote a note to Dr. Bouchaud, in which he complained of vague pains which he ascribed to drugs that had been given him at the asylum he had just left.

The note gave the impression that it was written under the influence of delusions, but careful examination revealed the fact that the pains he felt were genuine, but ignorantly attributed by the patient to medicine given to procure rest and sleep when he was highly excited. The patient was found to be completely mute, but able to write, and, although ignorant, to give a sufficiently clear history. His mother died of apoplexy. One of his brothers is addicted to drink. A paternal cousin is a chronic dement in this asylum. The patient had been given to alcoholic excess since the age of twelve. At seventeen he had two nervous attacks of short duration, following altercations. They were characterized by rage, followed by general tremor and complete stiffness of the body, but no falling or loss of consciousness. He spent his weekly profits from his trade in spree, remaining intoxicated from eight to fifteen hours. He habitually drank brandy or absinthe in the morning. In May, 1885, after a debauch, having spent the night in the gutter, he lost his

² Proceedings of the Section on Psychology of B. M. Assoc. Vide Brit. Med. Journal, September 3, 1887.

³ *Léçons sur les Maladies du Système nerveux*, Tome III, 2me.

⁴ *Ibid.* Appendice V, also Progrès Médical, 1886.

⁵ *Annales Med. Psychol.*, Septembre, 1887.

reason and was taken to a hospital. He then had several of the above-mentioned attacks, but did not lose consciousness completely. He was tormented by countless hallucinations of sight. He believed that he had killed two people and saw their blood, and the judges who were condemning him. He saw also animals and wild beasts. This condition lasted several months. He once left his bed at night and ran naked into the yard in great fear lest he would be drowned in the sea, which he thought was rising around the building.

At this time he noticed that it was difficult for him to speak. He could not complete certain words when he began to utter them. He thus lost his speech gradually, and finally could not speak at all. In this state he was sent to an asylum, still having hallucinations of all sorts. Two months later he began to feel more comfortable, and his hallucinations began gradually to disappear. He grew calmer, and soon all his false ideas vanished. His dumbness alone remained unchanged. The physician of that asylum stated that in the belief that the patient's dumbness was feigned he placed him under special night observation for a long time in order to ascertain if he could be surprised into uttering any words when sleeping lightly, but without success. He then went to Lommelet. The record states that since his admission his condition has been the same. He was immediately given work making shoes, and showed himself to be clever and industrious. Occasionally he refused to work because his discharge was denied him, but soon becoming tired of doing nothing he returned to his bench. He has been entirely rational, manifesting no hallucination or other mental trouble whatever. His complete, absolute mutism strikes one immediately. He cannot utter a sound, making no effort whatever, and refusing to try when directed to do so. He not only does not speak aloud, but also does not even whisper. That there is no paralysis of the organs of speech is shown by the free movement of lips, tongue, velum palati, etc. He can blow but cannot whistle as he once did, for although he puts his lips in the right position he makes only a slight sound when blowing vigorously. He understands perfectly what is said to him, and reads writing readily, keeping himself supplied with paper, on which he quickly writes what he has to say. He has not had an attack of any sort since his admission, and his sense of vision, of taste, and of smell, seem to be unimpaired, except for a trifling myopia of long standing. The general sensibility is somewhat modified, and although there are no "hysterogenous points," he cannot feel a light touch on either side when his eyes are closed. Sensibility to pain is in great measure extinct, the prick of a pin causing no especial discomfort, especially in the limbs or either side. It is a question whether alcoholism or the hysterical state would account for this anæsthesia. The base of the patient's tongue, or the velum palati, can be touched with a pencil or the finger without provoking reflex movements, but on pushing further nausea follows. No contractions are apparent on the application of the electric band around the arm. He never had dreams often, and none whatever since he became ill. He has occasional short darting pains in the lower part of the body and lower limbs. The knee-jerk is normal. In the way of treatment hypnotizing has been tried with a view to employing "suggestion," but without success. Electricity and douches have

been equally unsuccessful. That the patient's dumbness was not voluntary is shown chiefly by his desire to return home. He was very impatient at his detention, but knew that if he recovered his speech he would be immediately discharged.

Bouchard considers this a case of hysterical mutism, complicating insanity. The analogy between the symptoms described and those given by Charcot as characteristic of hysterical mutism is complete. They are, in a few words: Sudden onset; impossibility of crying and speaking; sound mental condition; return of speech after a time, with stammering of a peculiar kind; duration variable, usually short, but extending, in some instances, months, and even years. The patient was finally discharged, his long detention at the asylum having been chiefly due to the hope of bringing about the cure of a trouble which usually disappears suddenly and spontaneously, but nevertheless may yield to such measures as were tried.

MENTAL DISEASE AND INTERMITTENT FEVER.

Lemoine and Chaumier⁶ have recently made an elaborate study of this subject, illustrated by a number of instructive cases. The following conclusions are reached:

(1) Violent mania, without clearly defined characteristics, may accompany an attack of intermittent fever in predisposed subjects.

(2) In the same class, but far less often, convalescence may be the starting-point of a mild form of insanity, stupor or mania of uncertain duration and usually curable.

(3) Old subjects of malaria, with masked manifestations, are liable to recurrent intellectual disturbance, or to chronic insanity. The diagnosis of the latter is impossible without a full previous history of the patient.

(4) There probably exists a form of pseudo-general paralysis of a malarial origin.

(5) It is an important matter in treatment to ascertain the presence or not of intermittent fever as an etiological factor in the history of all cases of insanity. Quinine gives good results in intermittent mania and its convalescence. It is apparently of no value in the chronic cases, but even in these the drug may quiet transient attacks of agitation as if they were masked phenomena of the disease.

THE PRODOMAL STAGE OF GENERAL PARALYSIS.

Dr. Savage stated at the last meeting of the International Medical Congress, apropos of general paralysis, that if any cure is to take place it is to be when the case is taken early. The longer we have experience with the disease, and the more we get the early history, the length of time which the prodromal symptoms have existed is extended. I have, within the last five or six years, made it a rule when a patient became certainly and undoubtedly general paralytic, and was recognized as such by his friends, then to issue a form of questions as to very earliest changes in character, in handwriting, in vision of one kind or another, and in a very large number of cases, eight, nine, ten, or even twelve years before the patient became fit for certificates there were signs of the disease, but I think that not in one case out of ten thousand would we be able to persuade the patient that he required rest or treatment. Especially in some cases

⁶ *Annales Médico Psychologiques*, Mars, 1887.

of syphilis, I think early treatment will do good; but I am afraid the time is very far distant when we shall be able to persuade those who break down with general paralysis that they required treatment years before.

Parant⁷ has found in certain cases a condition of intellectual hyperactivity without delirium or dementia, in the prodromal period of general paralysis. In the last few years he has had three patients, typical general paralytics, when they came under his observation whose disorder had been ushered in by the following conditions: Each of them for a period of greater or less duration before the outbreak of mental disturbances passed through a condition of increased intellectual activity, an exaltation of the mental faculties, endowing them with aptitudes utterly unknown in them before, but which no one for a moment considered a sign of disease. This arose from the fact that this hyperactivity had the manifestations and all the appearance of an entirely normal state. It seemed perfectly in keeping and reasonable. Those who manifested it did not act absurdly or inconsistently. They were not extravagant, nor did they compromise their own interests. On the contrary they conducted themselves like skilful, judicious, prudent men, and used proper means for accomplishing their purposes. A synopsis of the first case is as follows: Marked intellectual activity for two months and a half. Transformation of character and mental faculties. Unusual facility in public speaking. Period of excitement, irregular and disturbed conduct. Ambitious delusions, general paralysis, enfeeblement. Death by marasmus.

Second case. Unwonted energy in business, great courage in combined enterprises, and most successful outcome. Acquisition of a large fortune in two years. Alteration of character, exaltation, ambitious delusions, general paralysis, short period of remission, return of excitement, congestive epileptiform attacks. Death.

Third case. Unexpected development of a taste for the management of public and private affairs. Great activity. Conducts to successful issue a number of useful projects. Sudden change at the end of a year. Alteration of character, disorderly conduct. General paralysis.

Two additional cases of a somewhat similar nature are summarized as follows: First case. Sudden manifestation of great skill in military manoeuvres, excitement, general paralysis, rapid gangrene of the perineum, death. Second case. Development of a brilliant memory, dementia, maniacal excitement, general paralysis.

GALVANISM IN THE TREATMENT OF INSANITY.

Wiglesworth⁸ gives an account of some recent work of his own in this line, and comes to the generally accepted conclusion as to the value of galvanism in insanity. He also gives, however, certain details as to the best method of applying the current to the head, as well as precautions that should be taken, which have, we believe, not been laid down elsewhere. Moreover, this treatment requires to have attention called to it from time to time that the use of this therapeutic agent may not be neglected in the small class of cases in which it is really of decided service, and therefore essential.

He comes to the conclusion that, whilst the use of galvanism to the head is a proceeding which is certainly *not* going to revolutionize the treatment of insanity, this agent is nevertheless one that is capable of doing much good in certain selected cases, and that by its judicious employment we may every now and then cure cases which would otherwise drift into hopeless chronicity. The class of cases which offers the best field for the employment of this agent is that which includes examples of mental stupor and torpor, cases which are grouped under the specific designations of *melancholia attonita* and so-called *acute dementia*.

In the discussion following this paper, Dr. Urquhart inquired as to necessity for large plates, inasmuch as the current spreads in going from one pole to the other, and also if the resistance was calculated. He detailed a case of hypochondriacal melancholia, which was verging on chronicity, and recovered under application of galvanism.

Dr. Hack Tuke mentioned a case of stupor in a young lady, in which he had persistently used the constant current, but without effect. He had always thought there was strong *a priori* reasoning for expecting good results from galvanism in cases of mental stupor. He referred to the modified good effects obtained from the electric bath. Professor Ball had recorded in *L'Encephale* some striking cases of cerebral torpor which he had treated by galvanism with very satisfactory results. He (H. T.), thought Dr. Wiglesworth had given reasons for encouragement, although not to as great an extent as he had hoped.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

E. M. BUCKINGHAM, M.D., SECRETARY.

DECEMBER 12, 1887, the President, Dr. O. F. WADSWORTH, in the chair.

Dr. FRANCIS MINOT read a paper entitled

CASES OF DIABETIC COMA, WITH REMARKS.¹

In connection with Dr. Minot's cases of diabetic coma,

Dr. T. M. ROTCH reported an interesting case of diabetes with the fatal result precipitated by erysipelas and ending in coma.

A lady, forty-one years of age, came under his care March 24, 1887, to be treated for an efflorescence of the skin, pronounced by Dr. Wiglesworth to be a rare form of molluscum. The patient had had three children, the oldest fourteen years previous, the confinement being accompanied by puerperal eclampsia, and followed by erysipelas of the legs. Some years later there was a miscarriage. Five years later a girl was born, and one year later a boy. The husband and children are living and in good health. For some years the patient had had pain and numbness in hands and feet. The molluscum first appeared five years ago, then disappeared entirely, returning one year ago, disappearing, and again returning four months ago. The skin was very sensitive, the slightest touch or tap causing exquisite pain, but there being no especial pain on deep pressure. The appetite was good. The bowels were regular. For the past year

¹ See page 69 of the Journal.

⁷ Annales Medico Psychologiques, Sept. et Juillet, 1887.

⁸ Journal of Mental Science, Oct., 1887.

she had been losing somewhat in weight, and at times had been very thirsty. Nothing especial noticed about urine, but this, on examination, was found to be increased in amount, and to have a specific gravity of 1032. Patient felt weak and very restless.

April 13th the patient was put upon diabetic diet. In a few days the restless feeling passed off, and there was a decided improvement in strength and in her general condition. An examination of the urine by Dr. Wm. B. Hills gave the following result:

Color, pale; reaction, acid; ureplain, normal; indican, normal; urea, diminished; albumen, trace; sugar, four and a half per cent.; bile pigments, absent; amount in twenty-four hours, seventy ounces; specific gravity, 1032; amount of sediment, considerable; chlorides, slightly diminished; alkaline phosphates, slightly diminished.

The sediment consisted of a considerable amount of pus, which probably was caused by leucorrhoea, as there was no other evidence of an inflammatory condition. There was also evidence of a hyperæmic condition of the kidney, probably excited by the sugar in the urine.

April 20th the patient complained of sore throat. Temperature, 100.4°, pulse 120, with the fauces much reddened. This continued on the 21st with a slight appearance of the catamenia and epistaxis and a very restless night.

April 22d. Temperature, 103°, pulse 120. Erysipelas of the nose and face.

April 23d. Erysipelas has extended to forehead; and on the 24th to left ear and scalp, and then to right ear. Strong odor to urine. Temperature 103°, pulse, 120. Tongue moist, and not especially coated. Mind clear.

April 25th. Erysipelas fading in the morning, but in the afternoon appeared on left side of face again, and extended to back of neck.

April 26th. Erysipelas had extended half-way down the back, but the mind was clear and the appetite fair.

April 27th. Erysipelas has almost reached the waist, and has covered the whole face, ears and scalp. The epistaxis and vaginal hemorrhage have continued in slight amount. Pulse, 114, temperature 100.8°.

April 28th. Breathing somewhat labored and mind somewhat dull, but easily roused, and nothing abnormal detected in lung. Strong saccharine odor to breath. Mind became more dull during the day, and this very much increased during the night, the patient being in a state of sopor, but it being possible to rouse her up to within four or five hours of her death, which occurred quietly early on the morning of the 29th. There was no notable decrease in the amount of urine, which remained at seventy ounces.

Dr. R. H. Fitz remarked that the chief interest in cases of diabetic coma still relates to the causation. In the past few years the investigations of v. Jaksch have been especially noteworthy. It has become recognized that the coloration of diabetic urine by ferric-chloride is due to diacetic acid and not to diacetic ether. When this former substance is present in the urine the term *diaceturia* is applied.

Diacetic acid, when introduced into the blood, seems comparatively harmless, and the nervous symptoms in diabetes, formerly attributed to acetone, cannot be due to diacetic acid. It is generally admitted that acetone is frequently present in the breath, blood

and urine in diabetes, while diacetic acid is most constantly present only in the severer cases. As both acetone and diacetic acid appear to result from the deficient oxidation of the products of albuminous metamorphosis, it has been suggested that a *diaceturia* may indicate an extreme degree of incomplete oxidation. Its presence, therefore, in the urine would show an extreme quantity of acetone in the organism. Reported experiments on the poisonous effects of acetone are somewhat contradictory, but the possibility of this agent, in sufficient doses, producing severe nervous disturbances must be admitted.

The positive value of the ferric-chloride test in determining the gravity of a case of diabetes is confirmed by the most recent observations. A small quantity of a moderately concentrated solution of the chloride of iron is added to the urine which becomes of a dark red (claret) color if diacetic acid is present. The color fades rapidly when the urine is boiled. If the urine is first boiled and the ferric-chloride then added there is little or no discoloration.

Since an exclusively albuminous diet will cause the presence in the urine both of acetone and of diacetic acid, it is important to bear this possibility in mind when applying the ferric-chloride test. A mixed diet, however, will cause the rapid disappearance of the diacetic acid, except in the graver cases of diabetes. The speaker is indebted to the recent communication of Prof. Rossbach, of Jena, on *acetonuria* and *diaceturia* (*August Med. Central Zeitung*, 1887, xciii, xciv.)

Dr. F. C. SHATTUCK called attention to the researches of Stadelmann and others with reference to the toxic agents causative of diabetic coma, and the means of destroying their activity. It has long been a matter of observation that the reaction of the urine in diabetes is strongly acid, and Stadelmann has shown that this acidity is due chiefly to the presence of oxybutyric acid, which is excreted in combination with an alkaline base, especially ammonia. Experiments with the introduction of acetone and aceto-acetic acid into the system render it improbable that they are causative of diabetic coma. They have toxic effects, but these are mild in degree, and quite different in character from the striking symptoms characteristic of diabetic coma. These symptoms do, however, resemble those which can be produced in animals, in the *graminivora* far more easily than in the *carnivora*, by acid saturation of the system. The application of this theory is an obvious one. Diabetic coma is to be prevented by the administration of alkalis in sufficient doses to materially reduce the hyperacidity of the urine, and treated, when already present, by the intravenous injection of an alkaline solution. The latter has been practised several times, unsuccessfully it is true, but enough alkali was given in no case to make the urine alkaline, and some transitory amelioration of the symptoms was noticed. Lépine injected forty-four grammes of bicarbonate of sodium.

Stadelmann states that the introduction of the alkaline solution into the rectum or stomach — when coma is present — is not to be relied upon, and, when put under the skin, it causes abscess. In view of the seeming accuracy of the observations which have led to the formulation of this theory, their confirmation by others, the inadequacy of other theories, and the uniformly unfavorable termination of diabetic coma, as well as our powerlessness to prevent its occurrence, this method certainly deserves careful attention.

The speaker added that he had recently been struck by the excessively acid reaction of the saliva in a diabetic case.

Dr. J. J. MINOR remarked that the intravenous injection of carbonate of sodium had been successful in a case of diabetic coma reported by Minkowski.

Dr. F. W. GOSS, with reference to Dr. Rotch's case, mentioned one in which thirty or forty grains of sugar were excreted to the ounce of urine. This case terminated with facial erysipelas, coma, and death, the urine being for the last day or two almost free from sugar.

Dr. H. W. WILLIAMS thought there was an interesting analogy between these cases of coma occurring in diabetes: where there had been but slight apparent disturbance of the health, and the similar instances observed in Bright's disease; where coma not infrequently supervenes, without warning, in persons who had not appeared to be subjects of any grave affection of the system, but in whom ophthalmoscopic investigation of the eyes, made to ascertain the cause of diminishing vision, had disclosed the existence of extensive albuminuric degeneration of the retina, which evidence was corroborated by examination of the urine. The patients declare themselves free from any symptoms of renal disease—in some instances, even until the fatal attack of coma.

Dr. F. B. STEPHENSON, of the Navy, asked the Society if there was any observed relation between this disease (diabetes, which seemed, often, to arise without evident cause) and temperaments of different individuals. For instance, does it occur more frequently in those of nervous, lymphatic, or nervo-lymphatic temperament, than where the constitution is of other type?

Dr. ROTCH answered that the patient whose case he had reported might be said to be nervous.

Dr. H. F. VICKERY reported that the ferric-chloride test had been used in vain in a diabetic patient of Dr. Whittier's at the Massachusetts General Hospital, although the disease was advanced and the patient drowsy, with a mind that was not clear.

Dr. KNAPP said that there might be some confusion in the chloride-of-iron test of the urine. If the patient has been taking salicylic acid or salol, which Ewald, in testing the muscular activity of the stomach, finds is converted into salicylic acid by the alkaline intestinal juice, the urine will take on a dark-reddish or purple-brown color on adding tincture of the chloride of iron. In two cases of diabetic coma that he had seen, the symptoms of diabetes had not been of very long duration—in one case six weeks, in the other less than a year. Some three or four years ago, several cases were reported in the *Lancet*, in which the preceding symptoms of diabetes had likewise not existed for a long time. He did not know whether cases had been reported where coma came on in patients who had had the symptoms of diabetes for six or eight years, or not; but he would like further information on the point.

Dr. F. C. SHATTUCK remarked, with reference to this point of coma in recent and old cases, that coma may supervene in any case of true diabetes; though, as Ralfe, whose experience has been large, states it is more common in young persons, notoriously those in whom the disease is most grave.

Dr. D. D. GILBERT said that he was interested in hearing allusion made to a case of diabetes at the Massa-

chusetts General Hospital, where the patient's mental condition is cloudy, although he is not absolutely drowsy. He had under his care, several years ago, a gentleman afflicted with diabetes, who was subject, during the last year of his illness, to periods of intoxication, as if from alcohol. These were so marked that, although a strictly temperate man, he was accused by business associates of habits of drunkenness. About three years after the discovery that he was a diabetic, he died in a state of coma. The speaker has also at present under his care a gentleman over sixty years of age, who has been known to be diabetic for seven years, and who is now subject to similar fits of exhilaration or intoxication, accompanied by delusions, hallucinations, and general obscurity of mind. These attacks sometimes last for several days, but are more or less relieved by a purgative, although his bowels are regularly open. The reporter looks for an ending in diabetic coma.

SACCHARIN.

Dr. JOHN HOMANS, 2d, spoke of saccharin as offering an excellent substitute for sugar in the diet of diabetics. In theory, it is not absorbed, while it is extremely sweet. It may be used in tea or coffee, or spread upon bread, and it is of some little comfort to the patients. He has used it in two cases. In one, the quantity of sugar excreted was not altered. The other has not yet been observed long enough to entitle him to draw conclusions.

Dr. F. C. SHATTUCK added that saccharin is also very useful in custard, made with cream, ice cream, and the like—articles which, without sweetening, are not palatable. It is soluble in boiling water, or, as Dr. R. Sturgis states, in cold water containing a small quantity of alkali in solution.

Dr. A. C. HEFFINGER, of the Navy, showed by invitation

PLANS FOR CIRCULAR PAVILION WARDS

He states that the first modern construction for hospitals was proposed at Paris in 1788, but that it was not until 1839, that the first pavilion hospital was begun there in accordance with these plans, and this was not completed until 1853. The wards contain each twenty-four patients. In 1858 an English army surgeon, Herbert, proposed a two-story pavilion hospital. The wards are, however, long, cheerless and draughty. A pavilion hospital was constructed at Berlin, with wards for twelve patients, in 1860 to 1872. Pavilion hospitals, with modifications to suit the climate, followed at Riga and at St. Petersburg. The French, however, returned in the new *Hôtel Dieu* to the old plan of a block hospital. The Royal Edinburgh and West Glasgow Hospitals are built upon a different plan, but have gothic arched ceilings. The Johns Hopkins Hospital is the most nearly perfect in this country. It contains two-story and one-story wards, parallelograms and octagons. The important points to be considered in ward-construction are area, cubic space, light and a supply of pure air in motion as well as convenience for service. What form most nearly meets these demands? The original long parallelogram ward is subject to draughts, it is neither cheerful nor convenient for administration. The square wards of the Massachusetts General Hospital constructed in 1842 and 1872, are an improvement upon this, but they are inferior to the octagons of the Johns Hopkins. Multiplication of angles in the octagon is, however, a

needless obstruction to ventilation, and the speaker holds that the circle with its absence of angles, capacity for receiving light from all sides, and its convenience for service from the centre, is the ideal form. By making the ceiling a parabolic dome, thus doing away with all angles except where the wall and floor meet, ventilation becomes almost automatic. The City Hospital of Antwerp, constructed in 1873, contains two-story pavilions with circular wards but without a domed roof. Although both Egypt and India contain somewhat ancient, circular buildings, and although Professor Marshall proposed this form for the new University Hospital in London, yet the first practical observation of its advantages was made by a Scotch surgeon; who having the care of wounded in war in Chili, noticed that those treated in the domed churches of the country did better than those in convent rooms of parallelogram shape. This was in 1840, and he being later in Australia, proposed this form for a hospital at Melbourne, in 1854, but his plans were rejected.

In the octagon wards of the Johns Hopkins Hospital, the windows are double and both inner and outer windows can be opened either at top or bottom. Ventilation is farther secured by foul-air pipes from the circumference, passing under the floor to a central vertical shaft, which is heated. The air from each bed is therefore aspirated away by itself.

The plans designed by Dr. Heflinger provide for two circular wards connected by a central administration building and they have been approved by the Secretary of the Navy, and by the Surgeon-General. The appropriation by Congress is, however, not large enough to allow of the completion of the whole design at present.

SOLITARY TUBERCLE OF THE BRAIN.

DR. T. M. ROTCH presented for inspection the result of an autopsy made on an infant under his care. Dr. William F. Whitney had made the examination and reported: a female infant, age thirteen months, extremely emaciated; caseous tubercle of post-bronchial glands; tubercle of lungs with a slight amount of broncho-pneumonia; milary tubercle of pleura, liver and spleen; caseous tubercle of mesenteric glands; milary tubercle of pia mater at base of brain, but no especial exudation, patches of solitary tubercle as large as a ten-cent piece in lower left cerebellum and in the left temporal and occipital lobes and the right frontal lobe of the cerebrum.

Dr. Rotch also made some remarks on the differential diagnosis between infantile atrophy and tuberculosis, in a number of cases that had recently been under his care.

RHODE ISLAND MEDICAL SOCIETY.

GEO. D. HERSEY, M.D., CORRESPONDING SECRETARY.

(QUARTERLY MEETING, September 15, 1887.)

DR. PHILIP K. TAYLOR, of Wakefield, reported a case of ovarian cyst treated by multiple aspirations. The patient was of New England birth, unmarried, had suffered from spinal disease in childhood, and never enjoyed robust health. In 1872 she began to have some inflammatory trouble of the uterus and its appendages, and in the spring of 1883, when just past her sixty-eighth birthday, noticed increased fullness in

the left inguinal region, where an ovarian tumor rapidly developed. In the following October her physicians, deeming ovariectomy inadvisable, aspirated the tumor, withdrawing seventeen pints of dark brown fluid. From this time until her death in April, 1887, the tumor was aspirated thirteen times. The aggregate amount removed was six hundred and six pints. The largest quantity withdrawn at a single aspiration was sixty-two pints. The first few operations were attended with some abdominal inflammation and irritation of the bladder, though only once did these complications threaten serious trouble. No unpleasant symptoms followed the later aspirations. During the last two years of her life she suffered from a broken-down mammary cancer and a second intra-abdominal growth, which at the autopsy was found to be attached to the liver. She died of cerebral softening, which produced paralysis very similar to that caused by apoplexy.

QUARTERLY MEETING, December 15, 1887.

DR. W. J. McCaw reported a case of

RUPTURE OF THE SMALL INTESTINE FROM KICK OF A HORSE. — DEATH IN THIRTY-THREE HOURS.

A. M., aged twenty, was admitted into Rhode Island Hospital, service of Dr. Mitchell, December 1, 1887, at 2.30 p. m., having been kicked in the right side of the abdomen by a horse, two hours before. He was suffering great pain, extremities cold, pulse 80 and good, temperature 99° F. No external wounds or bruises. He was put to bed, and under morphine soon became quiet and fell asleep. He awoke at 7.30 p. m., and, as he could not pass water, was catheterized. Vomited after drinking milk. At 11 p. m. he complained of general abdominal pain, especially in the hypogastric region. The catheter was again introduced and three ounces of clear urine removed. Turpentine stupe over abdomen. Morphine as required. The next morning he was very restless; pulse variable and weak; temperature 102°; but little tympanites. Passed water without assistance. Vomited several times during the morning. Cold applications to abdomen. The patient slept most of the day, and at 4 p. m. sank into a stupor. Stimulants failed to arouse him, and he died at 9.30 p. m. — thirty-three hours after injury.

Autopsy thirty-six hours after death. No external marks or evidence of injury. The thoracic organs, as also the stomach, liver, spleen and pancreas were in normal positions and uninjured. The omentum and intestines were adherent and bathed in purulent fluid. Eight ounces of pus and fecal matter were found in the abdominal cavity. About three feet from the ileo-caecal valve was a transverse rent of the ileum three-quarters of an inch in length.

DR. W. B. GOLDSMITH reported a case of

STUPOR FOLLOWING INJURY TO THE HEAD.

The patient was a retired merchant, aged fifty-seven, a man of unusual business capacity and excellent mental balance. He was very actively employed, and had much responsibility and anxiety by reason of his connection with a variety of public and private enterprises. On June 22d he was thrown from a tricycle, and struck with great force on his shoulder and head, the blow upon the head coming upon the left frontal protuberance. He was momentarily insensible, but

soon rallied sufficiently to walk with assistance to his house, which was only a few rods distant. A period of nearly three months elapsed after the injury without symptoms sufficiently serious to attract much attention.

In September he began to have severe headache, chiefly in the left frontal region, but not confined to that locality. After two weeks the pain became more severe, was continuous day and night, and more strictly confined to the region of the blow. At this time physical examination disclosed little abnormal. There was no photophobia; the pupils were rather small, but not markedly so, equal and reacted to light. Muscular power, cutaneous sensation and the skin and tendon reflexes were normal. Pulse normal. He was treated by absolute quiet and rest, in a darkened room. Headache continued very severe, except when controlled by large doses of anodynes. In the third week his conversation wandered incoherently, though no active excitement was present. Gradually this changed to a condition of mental stupor. He was insensible to noise and light; gave no evidence of pain, and showed little or no recognition of those about him. There was great motor activity. He continually writhed and twisted into every possible position except the supine. The most favored one was that in which he rested on his face and knees, the knees being flexed close upon the abdomen. He was continually grasping and pulling his bedding, or whatever was within reach. He took liquid food, and slept by short snatches without much medicine. Urine and faeces passed involuntarily. After four days the restlessness decreased, and was replaced by increasing stupor and somnolence. During the succeeding week he had three attacks of extreme prostration, in which his breathing became stertorous and slow, not more than seven or eight per minute, and his pulse faint and interrupted. He gradually regained strength, became entirely rational, and has continued so for two years.

Dr. Goldsmith remarked that the exact pathological lesion existing in this case could only be guessed at. It seems not improbable that it consisted of the minute punctiform hæmorrhages which various observers have found scattered through the brain after falls that resulted fatally. These may have been so small that the effusion was absorbed without permanently injuring the nervous tissue.

The PRESIDENT appointed the following delegates to Medical Societies:

Maine Medical Association, W. F. Hutchinson and F. B. Fuller; New Hampshire Medical Society, G. D. Hersey and G. T. Swarts; Vermont Medical Society, W. R. White and G. W. Porter; Massachusetts Medical Society, Albert Potter and W. B. Goldsmith; Connecticut Medical Society, A. G. Browning and W. H. Palmer; New York State Medical Society, F. H. Rankin, and Charles O'Leary; New York State Medical Association, J. W. C. Ely and J. W. Mitchell; Medical Society of New Jersey, Herbert Terry and J. E. Perry.

— A child being sick in New York with remittent fever, a telegraphic message was sent to "the great mind healer" of Boston, who "worked on" her for an hour, through a distance of 250 miles, and left her "as well as ever."

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ARE MODERN TOWN-POPULATIONS DEGENERATING?

NEARLY a half century ago public attention began to be directed to the devitalizing influences of crowded populations, and to the immense growth of disease and pauperism. Paris was then a nasty city, with its filth running in the street gutters. London drank its own sewage. There was no city in the world with decent water-supply or sewerage, and mines or factories were crowded with underfed, undersized laborers. Political economists, philanthropists, even the essayist and poet, were filled with dismay at the rapid degeneracy of the human race crowding into manufacturing towns and into cities; and the fact of this decay was fully proved by the investigations of an English royal commission, and a most remarkable report by Mr. Edwin Chadwick on the condition of the laboring population of England, which was the incentive and the beginning to sanitary and industrial improvement in the conditions of life among the masses.

Such vast benefits have since then arisen to the laborers of the world in purer water and air, improved dwellings, increased wages, shortened hours of work, better food, and the many advantages arising from an enlightened and philanthropic administration of public affairs, that many thoughtful students of the problem are beginning to consider whether or how far physical deterioration is a necessary result of the present tendency of the population to aggregate in the cities.

Huxley, on the one hand, points to the most wretched poor of East London, crawling under bridges, sleeping in hogsheads, half-starved, in rags and moral degradation, while others say that such people not only gravitate to the cities, but are found in the country also, the County of Donegal, Ireland, for instance, having fully as degraded a population sleeping in mud huts or caves. The question is not easy of solution, especially now while we are in the experimental stage, so to speak, of it, and are still collecting evidence.

Dr. Milner Fothergill has recently published in the *National Record*,¹ his paper, read before the British Association for the Advancement of Science, on the "Effects of Town Life upon the Human Body." He quotes Cantlie, Walsh and Ferguson, who have observed degeneracy in their towns, and Sir Thomas Crawford, who points out the large proportion of rejections of army recruits from towns for physical unfitness. He also states his own opinion that town residence is changing the Anglo-Dane into the small, dark, Celtic type, whom the Norseman dispossessed, the modification being a reversion to an earlier, lower, ethnic form. The town-dweller, according to him, has a more precocious nervous organization, and less perfect digestive organs, so that he inclines to a flesh diet to the extent of entailing a long series of morbid sequences from digestive incapacity, including Bright's disease and phthisis. He draws, also, a somewhat sensational picture, possibly suggested by Sir Crichton Brown's superficial report on the London schools, of the already taxed system of children staggering under the added burden of its lessons — true enough if not overdrawn.

Another side of the question is presented in a paper on the physical condition of the masses, in the October number of the *Fortnightly Review* by the distinguished anthropologist, Mr. Charles Roberts, who thinks that Brown's report did not fairly represent the physical condition of London school children. He dismisses Fothergill with the remark that his experience led him to believe that his patients in hospital eat too much of food that conduces to gout, dyspepsia, and Bright's disease "which form the scourge of degenerating town populations." He also shows that the statistics of recruiting for the army not only have been quite incorrectly reported by Crawford, from his not understanding all the circumstances of the case, but that, so far as they go, they indicate a physical improvement in the town-dweller between 1860-64 and 1882-86. Roberts adds, "If we may accept the army as a standard of the physique of the laboring classes, the nation is stronger and healthier now by nearly ten per cent. (9.78) than it was twenty-five years ago." He points to the lowered death-rate in London (19.9 and in Hampstead 12.2) to the improvement in the condition of the people from sanitary and social legislation, to the increase and duration of life and to Dr. Farr's evidence that the increased duration of human life in England is lived at useful ages and not in childhood or infancy. He also quotes Mr. Giffen's address on the "Progress of the Working Classes" as showing that wages have increased 33 to 100 per cent. and that the consumption of such ordinary articles of diet as bacon, butter, cheese, currants, potatoes, rice, cocoa, coffee, flour, sugar and tea, had risen from 65.25 pounds per head, of the total population in 1840, to 351.04 pounds in 1881. It is also shown that the purchasing power of wages, in food, clothing and rent, is nearly double what it was in 1839.

A most striking fact is in the decrease in pauperism from 1 in 16 in 1849 to 1 in 34 in 1886, and the increase of savings-bank deposits from 13½ millions in 1851 to 80½ millions in 1881. Mr. Roberts calls attention to the sort of industrial selection that draws the smaller and weaker of the laboring classes to cities and thinks it obvious that the difference in the physique of town and country populations is not entirely, or even largely, due to physical degeneracy, as is so often asserted by persons who have not been at the trouble to seek for the real cause. Degeneracy of the human species, even under the adverse conditions of our crowded slums in towns, being not so easy a matter as many people imagine. He finds physique a quality of the individual, and its variations dependent on and controlled by food, exercise and sanitary surroundings, so that he has little cause for anxiety, but rather good grounds for congratulation on the future of the national physique. The taste for athletic exercises, gymnastics, boating, skating and cycling, so enthusiastically practised by the educated classes, is extending to the masses; while the agitation for the introduction of physical training, technical education, and handicrafts into elementary schools promises well for the future of their children. Much, very much, remains to be done to rescue the still underfed and over-crowded town population from the insanitary conditions that environ them; but beyond what is already being done, the chief thing to do now is to impress on all persons having charge of the education and management of children, that physical activity is the law which regulates the growth and development of the body and lays the foundation of both a good physique and an active, intelligent, and teachable mind; and to secure this more time, and more skill in teaching physical exercises in schools, and more open spaces and playgrounds, are absolutely necessary.

As is usually true, *in medio tutissimus ibis*, the truth lies between the two extremes, and, in this case, much nearer the position of Mr. Roberts than Dr. Fothergill's. That city life is enervating to those who cannot get away in summer is beyond dispute. That it is far less so than twenty-five years ago, in spite of the enormous increase in the growth of cities, is equally true. There are, also, certain compensations in the greater comforts, better protection from the weather, more suitable food, etc., in the city, to say nothing of the mental diversion afforded there. The next quarter of a century will do much to solve the problem, and we shall look forward to the results of still greater sanitary and social improvements in city life in a very hopeful frame of mind for the human race.

— At a meeting of the Council of the University of the City of New York, held January 9th, it was announced that Dr. William Gilman Thompson, who has for some months past been one of the lecturers on physiology, had accepted the Chair of Physiology in the Medical Department.

¹ October, 1887.

A LAYMAN'S VIEW OF WINTER HEALTH-RESORTS.

A KNOWLEDGE of the climate and other conditions affecting comfortable living in the various localities claimed as health-resorts, is necessary for all physicians who have patients among the classes peculiarly able to avail themselves of change of place as a factor in the treatment of disease. Yet such knowledge as regards many useful localities is not always easy to gain. The physician cannot personally investigate a large number of such places, unless he habitually devotes his vacations to that object, and even such information as he may have gained by his own observation becomes, upon many points, useless after the lapse of a few years. The hotel which he found good or bad has very likely changed hands, and is conducted on a different plan. Drainage which was adequate in the day of small things, when there were but few houses in the place, may now be sadly lacking in safety; and, conversely, a place which he knew as unprovided with sewers, may have been in more recent times supplied.

For the dissemination among the profession of information as to various health-resorts, societies like the American Climatological Society perform a most useful work. Yet the medical reports on the character of various places in this regard do not always enter into that detail regarding expense, travelling facilities, opportunities for amusement, etc., which have a bearing almost as important as the climate itself on the patient's prospects for receiving benefit. On the other hand, lay opinion cannot always be relied upon for the distinctively climatic features of a place, while its publication is often inspired by a merely commercial motive.

In a recent number of the *Harpers Monthly Magazine* (November, 1887), a layman, Mr. Wm. Smith Brown, has an article on the winter climatic resorts of three continents, which is based on an exceptionally wide personal experience, covering some forty years of travel; and while it distinctly disclaims any medical knowledge, for which the physician can go to other authorities, it gives with unusual fullness the unfavorable side of each place in such a way that the physician can see what its medical bearings must be, and anybody can see what its practical inconveniences are. It is true that in some instances the author is under the necessary limitation referred to above, of not having visited the place for some years, but in such cases he is often able to give from reports of others the intermediate changes. He has the further advantage of evidently not being connected with anybody's advertising department.

Space, of course, does not permit us noticing Mr. Brown's remarks in any detail. Naturally, much relative attention is paid to the resorts, both European and American, with which the medical, as well as the general public is most familiar. Of each of these places, the unfavorable side is presented with as much fulness as the favorable: for instance, the winds and

fogs of Biarritz, the rains and the cold changes of Pau, and the general fact that all Mediterranean ports are situated on bays into which the sewage empties, without any active river currents or tides to carry it away. The author doubts if there is any likelihood of fixed disease of the lungs being cured in any of the resorts in the south of France.

As to the Nile, we are told that apart from its expensiveness (the cost for each person of living on a dahabeeyah, which is the only comfortable means of living for a serious invalid, being about ten dollars a day), there is much dust, with frequent sand-storms, which are, of course, especially irritating to weak lungs. Algiers, or rather, its suburb, Mustapha Supérieur, he regards as, on the whole, preferable to resorts on the north side of the Mediterranean. But there are no good hotels, except in the town, which is somewhat malarious, and the villas, which it is necessary to hire in order to live comfortably, are high-priced.

Of American winter resorts, Mr. Brown speaks of Colorado, Minnesota, Northern Michigan, the Adirondacks, and Lakewood, New Jersey, as examples of the "cold and dry" climate. California has the disadvantage, to Eastern invalids, of requiring a long car-ride, going and returning, and the winters are damp, the entire rain-fall of the year occurring between October and May. With many admitted natural advantages, Santa Barbara is windy, and sometimes foggy. Los Angeles and San Diego he considers more desirable as permanent residences, or as places of resort for the tired, than as sanatory in cases of established consumption.

Asheville, N. C., and Aiken, S. C., he considers to be in the main favorable for consumptives from the middle of April to the middle of December, but for the other four months to be too cold and variable, and, in the case of Aiken, too windy for invalids to be able to lead an out-door life. Asheville, like other resorts in the South, as well as elsewhere, needs an improvement in sanitary conditions proportionate to its growth.

For such patients as require a moist, warm climate, Mr. Brown considers Nassau the most desirable resort for English-speaking people, and he says that while he has known invalids dangerously ill with the early stages of consumption to recover in other localities, Nassau is the only place where he has known people to recover who have been pronounced by eminent and reliable diagnosticians to be in the advanced and "incurable" stages of the disease. Such recoveries have occurred in persons who went to the island, year after year, in November, and remained until May.

ANNUAL REPORT OF THE NEW YORK STATE BOARD OF CHARITIES.

THE 20th annual report of the New York State Board of Charities presented to the Legislature, January 12th, gives the number of insane persons in the institutions of the State on the 1st of October last, as 14,-

062, an increase in this class over the previous year of 524. Much of this increase in the number of insane is declared to be due to immigration, and the Board advocates certain amendments to the Federal law regulating immigration, with a view to the remedying of some of the evils now existing in connection therewith. The portion of the report relating to the commitment and detention of the insane is especially referred to by the Governor in his annual message. The Board recommends that the Legislature guard against unnecessary, hasty and unjust commitments to State or county asylums for the insane, and also secure protection to the inmates of such institutions against their continued detention when the necessity therefore has ceased. The opinion is expressed that the legislation desired should cover the following points:

First, directions for commitment on certificates of the physicians in the case, at the outset, shall be by court decree after examining the person in question, under provisions similar to those of the State of Massachusetts.

Second, more absolute provisions for the discharge of patients by the Commissioner of Lunacy, by procedure similar to that of the State of Pennsylvania.

Third, the enactment of a provision of the Scotch lunacy law requiring the superintendent of every asylum for the insane, to yearly make affidavit that one month prior he has reviewed the cases of all patients under his care in the institution, and that their continued detention in an asylum is necessary for their welfare or the public safety.

SMALL-POX ON THE PACIFIC COAST.

THE Supervising Surgeon-General, Marine Hospital service, reports, in his circular dated January 13th, that the number of cases of small-pox in San Francisco during the year 1887 was 166, and during the period from January 1st to 5th, 1888, there have been twenty-five cases. Of these, fourteen were among the Chinese. The disease was brought to San Francisco early in May by one of the China steamers, but did not prevail to any extent until November. On December 29th the disease was declared to be epidemic by the Board of Health. All cases, on being verified, are immediately sent to the hospital, with their bedding and clothing; the premises are fumigated, and all persons living in the neighborhood are vaccinated if possible. Vaccination offices have been opened in various parts of the city. No children are admitted to the public schools without having been previously vaccinated. Over thirty thousand vaccinations have been made at the office of the Board of Health during the past six months. Under the circumstances, the Board of Health is of the opinion that the disease will soon be stamped out.

Passed Assistant Surgeon S. C. Devan, M. H. S., reports from Port Townsend, Washington Territory, under date of January 1st, 1888, that because of the action of the Board of Health of San Francisco, Califor-

nia, in proclaiming the existence of small-pox as an epidemic in that city, the Board of Health at that port have issued instructions, under cover of date December 31st, 1887, to their health officer to subject all vessels from the port of San Francisco to rigid examination. He also reports that there are three accredited cases of this disease at Seattle, Washington Territory.

THE RULING PASSION STRONG AT THE DEATH-BED.

IN connection with the disastrous accident on the Boston & Maine Railroad last week at Haverhill, Mass., in which ten persons were killed, and many more wounded, the horrors of the situation seem to have been enhanced to an unusual degree by the unseasonable "enterprise" of the interviewing reporter. This functionary of one of the Boston dailies, after giving with professional pride his success in interviewing the wounded and dying, chronicles with cheerful impartiality the evidence of his capacity for making himself a nuisance in these words from one of his victims: "Oh, Mr. Reporter, don't ask me any more: I can't stand it," and, with an exclamation of intense pain, he sunk deeper in the snowy-white pillows, and rolled his eyes with a look that told plainer than any words how acute were his sufferings."

The reporter did set a limit to his impertinence in one other case, though with a singular tone of apology to the public and his employers for his apparent dereliction of duty: "The last victim in this room was a Swede named Nils Bonin, who was asleep when the *Herald* man approached his cot. His face bore no marks of disfigurement, and he was breathing so regularly that it seemed a pity to awaken him. The reporter did not attempt it. One of the corps of hospital attendants said Nils was deaf and very hard of hearing. This was another argument against forcing the unlucky Swede to awake and tell what he knew."

Certainly, it seems very strange that the authorities in charge of the wounded passengers should have allowed these sufferers to be disturbed in such a way. The wards of a public hospital ought, as much as a private house, to secure exemption for their inmates against the persistent and predatory interviewer.

MEDICAL NOTES.

—Dr. J. P. Wall reports that the rumors of the presence of yellow fever at Tampa are without foundation.

—A foreign contemporary reports that some little time ago in Belgium a man was accused of the rape of a little girl. On the clothing of the accused, and also on that of the alleged victim, spots of pus were found, and handed over for examination to a physician and a pharmacist of the first class. These experts declared the pus to be gonorrhœal, whereupon the defending counsel demanded proof of the presence of

gonococci. Dr. Castiaux, Professor of Forensic Medicine at Lille, was, therefore, called upon to make a fresh examination of the spots with the object of determining the existence or non-existence of micro-organisms. Dr. Lober, who took part in the examination, made pure cultivations of the pus on various media, and finally on sweetened and peptonized agar, and by this means was able to confirm the gonorrhoeal nature of the pus.

NEW YORK.

—The graduating exercises of the Brooklyn Hospital Training School for Nurses were held at Historical Hall, Brooklyn, on the 9th of January, when diplomas were presented to a class of thirteen by ex-Mayor Low, who presided. Addresses were read by the Rev. Dr. Storrs, Judge Van Cott, and Dr. Pain, of the hospital staff.

—The graduating exercises of the Bellevue Hospital Training School for Nurses were held on the 10th. There were twenty-four graduates, and the principal address was made by Dr. Charles Simmons, of the Department of Charities and Correction.

—The annual report of the Department of Vital Statistics of the Brooklyn Board of Health, just made public, shows that there were 17,078 deaths in that city during the year 1887 — an annual death-rate of 22.72 for every 1,000 of population. The number of births reported was 12,750, and of marriages, 5,700. The Board of Health estimates the present population of the city at 774,807, an increase of 29,762 during the past year.

—The new Mayor of Brooklyn, Mr. Chapin, has appointed Dr. John Griffin Health Commissioner of the city, in the place of Dr. Otterson. Dr. Griffin is a member of the Kings County Medical Society, and of the Brooklyn Board of Education. He is a native of Ireland, forty-two years old, and came to this country in 1868. While attending lectures at Bellevue Hospital Medical College, of which he is a graduate, he is said to have supported himself by reporting for a morning newspaper.

—In a case occurring in Brooklyn, in which the evidence at the coroner's inquest showed that the death of a two-year-old child was due to arsenical poisoning, the result of taking a prescription in which the drug-clerk who made it up put in more than one hundred times the amount of arsenic ordered by the physician, the jury has rendered a verdict to the effect that the medicine was "accidentally compounded"; and the clerk has been discharged from custody.

—At the last meeting of the Croton Aqueduct Commissioners, a resolution was very properly passed requesting the State Board of Health to prevent the placing of a contemplated cemetery above the aqueduct at a certain point along its route.

—A farmer of West New York, N. J., who was recently arrested, charged with offering for sale in Washington Market the carcass of a cow which had died of pleuro-pneumonia, pleaded guilty when his case was brought to trial, and has been fined \$100.

—At a meeting of the New York Medico-Legal Society, held January 11th, Clark Bell, Esq., who has lately been re-elected President, delivered his inaugural address, and a paper on "Criminal Jurisprudence," by Dr. Bryce, Superintendent of the Alabama Insane Asylum, was read by the Secretary; after which Dr. Feldman, a Russian physician, made some experiments in hypnotism and "mind-reading."

—Mr. Vedder, who recently introduced into the State Senate the bill providing for the placing of the Health Officer of the Port of New York on a salary of \$10,000 per annum, has now introduced another bill reorganizing the Quarantine Commission, and providing that the Presidents of the Boards of Health of New York City and Brooklyn shall be members of the Commission.

—Dr. John Adam Weisse, the distinguished philologist, died January 12th, after a protracted illness. He was born in the province of Lorraine, December 3, 1810, and was graduated in classics at the college in Bitch, and in chemistry and philosophy at the Metz Seminary. He subsequently became Professor of the French language at the Imperial School of Vienna. In 1840 he came to America, and, a year later, married at Watertown, Mass., Miss Jane Lee Hunt, who survives him. During his eight years' residence in Boston he published a "Key to the French Language," which was favorably received by Professor Longfellow and other competent judges. He then studied medicine at Brussels, and, after receiving his degree, returned to New York, where he continued to reside up to the time of his death. He built up an excellent medical practice, but found time to pursue the philological studies which had become the favorite occupation of his leisure. In 1878 he published his most important work, "The Origin, Progress, and Destiny of the English Language and Literature," which is said to have won the marked approval of such scholars as Gladstone, Max Müller, Darwin, and Charles Sumner. Some years ago, Dr. Weisse retired from active medical practice, and devoted himself almost entirely to his literary pursuits.

—Up to January 14th, the amount received from the Hospital Saturday and Sunday Collection had reached the handsome sum of \$33,766.

—Dr. C. D. Crothers, of Hartford, editor of the *Journal of Inebriety*, is to deliver two lectures on the "The Disease of Inebriety: its Pathology and Treatment," before the Albany Medical College, January 24th and 25th.

Miscellany.

AXILLARY ADENOPATHY IN THE COURSE OF TUBERCULOSIS OF THE LUNGS.

THE foregoing is the title of an inaugural thesis by Toledo,¹ to which we find reference in the *Archives of Pediatrics*, January, 1888. The question is a new

¹ Le Concours Méd., August 28, 1887.

one to which Graucher recently called attention, exhibiting at one of his clinics a little girl, who, after suffering from pleurisy, entered the hospital and disclosed tuberculous lesions of the lungs and a large glandular tumor in the right axilla. Hypertrophied glands were also found at the level of the supra-clavicular region and the submaxillary region of the same side. Graucher also related two other cases in which the coexistence of tubercular lesions of the lungs and axillary adenopathies had been observed, and showed how the relation of cause and effect could be naturally traced between the pulmonary and the glandular lesions. The tubercular lesion of the lungs may infect the glands in the axilla through the medium of the pleura, either by the direct way of the lymphatics, which go from the thoracic wall to the axilla, or by way of the supra-clavicular glands. This course in the development of tuberculosis has importance in some cases with reference to diagnosis and prognosis. The glandular swelling should call attention to the yet latent pulmonary disease, and to the necessity of its extirpation to prevent the infection, which may then possibly be local, from becoming general. Graucher's advice is, therefore, pertinent, that one should never neglect to explore the axilla of a phthisical person, and that one should never neglect to auscultate the lungs if a tumor in the axilla is found.

POST-MORTEM PARTURITION.

DR. R. TEMPLE WRIGHT, of India, gives in the *Indian Medical Gazette* for October, 1887, the report of a case of the expulsion of a fully developed fetus after death, the mother having been in good health when she committed suicide by drowning. The woman, aged twenty-seven, threw herself into a well, and remained there three days in very hot weather. The body was then removed, and lay, from 8 A.M., all day in the sun, decomposing very rapidly. No-body touched it till 8 P.M., when it was raised to be carried away. Then it was noticed that something was hanging between the legs, which proved to be the fetus, with the inverted uterus. The perineum had given way, rupturing from vagina to rectum, apparently under pressure from the gases developed by decay inside the body, and the uterus, with all its contents, had emerged from the vagina, and was turned inside out. The contents were a full-grown male fetus, with the remains of the membranes, funis, and placenta, all continuous with each other, but detached from the uterus.

No trace could be found of any ligature on the umbilical cord, or of any stick, or rag, or powder, or anything else which could injure the uterus, which had no apparent lesion except the inversion.

The fetus and other structures also showed no sign of injury but decomposition.

Dr. Wright cites similar cases from a number of authors, among them Chevers, who mentions three cases of *post-mortem* birth, all of which occurred in the hot weather in India. In two of them the uterus was inverted. In all of them, however, death had been caused by abortion, at the third, fourth, and fifth month, by pushing into the uterus a twig of *Lall Chitra* (*Plumbago Rosea*). In two of them *post-mortem* birth occurred after the body was placed on

the table in the dead-house, while in the third it happened on the *charpoy* upon which the body was being carried to the Civil Surgeon of Patna, Dr. R. F. Hutchinson, who reports that neither the bearers of the *charpoy*, nor the policeman who went with them, noticed the occurrence of the birth.

Dr. Chevers says the expulsion and inversion of the uterus in his case at Howrah was caused "evidently by the gaseous distension within the body."

In a footnote this author quotes the evidence of the Civil Surgeon of Tirhoot at a trial in 1853. A woman disappeared, and, as she was said to have been murdered, her body was exhumed, and at the necropsy the body was much decomposed, the uterus and some intestines being expelled through the vulva, and some other coils of intestine through a rupture in the right side of the abdomen, "forced by the progress of putrefaction (gases in the abdomen)."

Other authors, such as Aveling, Ogston, and Taylor, refer to the occurrence of *post-mortem* parturition as possible, and the matter is certainly one of interest to students of forensic medicine.

THE CONNECTION BETWEEN ERYTHEMA NODOSUM AND RHEUMATISM.

DR. STEPHEN MACKENZIE has tabulated the particulars of one hundred and eight cases of erythema nodosum collected from the records of St. Thomas's, Guy's, St. Bartholomew's, and the London Hospital, especially with reference to a combination with rheumatism. (*Clin. Soc. Trans.* XIX, 215.) The *Journal of Cutaneous and Genito-Urinary Diseases* thus summarizes the results of his investigations:

He found in thirteen cases acute, and in four sub-acute rheumatism recorded as co-existing with erythema.

In seventeen other cases, joint pains, apparently of a rheumatic character, were present. In three of these cases there was a history of previous rheumatism, and in four, evidence of heart disease, in two "sore throat," and in two a family history of rheumatism. Thus, if it be assumed that these seventeen cases were all rheumatic, there would be 34, or 31.4 per cent. in which E. nodosum was associated with some kind of rheumatic affection.

In twelve other cases the patient was said to have previously suffered from rheumatism. In eleven other cases there was what was called a family history (but this of almost no value in the case of ignorant patients).

In ten cases a cardiac murmur without history of rheumatism was present: and in five besides these, murmurs apparently due to endocarditis came on during the attack of erythema.

The general conclusions were:

(1) "That E. nodosum is frequently associated with definitely rheumatic symptoms, for example, arthritis, sour sweats, sore throat, etc."

(2) "That heart disease (endocarditis) may arise during an attack of E. nodosum, with or without joint inflammation."

(3) "These conclusions justify the inference that E. nodosum is frequently, if not generally, an expression of rheumatism, even when no definitely rheumatic symptoms are present."

Correspondence.

CHILDREN'S PERIODICALS.

BALDWINVILLE, January 7, 1888.

MR. EDITOR, — After reading "Sour Milk for Babies" in the *Journal* of November 17th, I am encouraged to report a similar outrage in the advertising columns of a youth's paper. The matter was called to my attention by finding in the possession of a boy under my care the circulars which I enclose to you. This boy is unusually bright, but in his reading, like many imaginative children, turns everything to a gratification of an abnormal love for facts and names relating to sexual matters. It seems as if the paper in question would not advertise such a scheme if it knew just the nature of it. Perhaps it would be more generous to inform them, instead of you, of the bad character of this advertisement, but it surely can do no harm to add my voice to the one already heard through your paper, to

bring out the fact that wrong things do creep into the children's papers. Very respectfully,

E. F., M.D.

— A dispute has lately arisen in Paris between M. Zola and M. Sarcy over the question whether asses can vomit. The former writer, in his pursuit of realism, thought it well and appropriate, in his latest work, "La Terre," to represent an ass as becoming intoxicated, and went on to describe the animal's acts of vomiting. The critic pronounced this as against nature, and quoted a veterinary to the effect that the act of vomiting in the ass was impossible from the structure of the stomach. Zola retorted, that before writing the chapter he had read up the subject, and he cited good authorities that asses and horses, while they rarely vomited, could, and actually did sometimes do so.

REPORTED MORTALITY FOR THE WEEK ENDING JANUARY 7, 1887.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diph. & Croup.	Measles.	Scarlet Fever.
New York	1,481,920	723	286	21.56	21.56	.70	11.93	4.90
Philadelphia	993,801	—	—	—	—	—	—	—
Brooklyn	745,108	—	—	—	—	—	—	—
Chicago	725,000	—	—	—	—	—	—	—
St. Louis	420,000	—	—	—	—	—	—	—
Baltimore	417,000	153	65	15.60	2.52	1.30	7.15	.65
Boston	400,000	232	68	5.04	22.26	—	.42	2.10
New Orleans	242,750	131	27	23.56	9.12	1.52	—	6.84
Buffalo	225,000	—	—	—	—	—	—	—
District of Columbia	210,000	78	28	15.36	26.88	2.56	1.28	—
Pittsburgh	210,000	89	25	19.04	22.40	3.36	10.08	—
Montreal	186,257	—	—	—	—	—	—	—
Milwaukee	170,000	61	29	16.39	13.12	3.38	4.92	1.64
Providence	124,000	—	—	—	—	—	—	—
Richmond	100,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,000	12	5	—	25.00	—	—	—
Charleston	60,145	41	8	4.88	19.52	2.44	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	68,383	35	14	14.30	25.74	—	11.44	2.86
Lowell	64,051	24	—	8.30	—	4.15	4.15	—
Cambridge	59,860	25	12	20.00	16.00	—	8.00	8.00
Fall River	56,863	20	7	10.00	10.00	—	—	—
Lynn	45,861	15	10	26.66	20.60	—	—	6.66
Lawrence	38,825	18	3	16.66	16.66	16.66	—	—
Springfield	37,577	14	4	28.56	21.42	—	14.28	—
New Bedford	33,393	11	5	18.18	9.09	—	18.18	—
Somerville	29,492	13	3	23.07	—	7.69	15.38	—
Salem	28,084	9	2	22.22	—	—	22.22	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	14	5	29.12	—	7.28	—	21.42
Taunton	23,674	8	1	—	37.50	—	—	—
Haverhill	21,748	3	3	25.00	—	—	25.00	—
Gloucester	21,713	8	6	12.50	—	—	—	12.50
Brockton	20,783	6	1	33.33	33.33	—	—	—
Newton	19,759	13	2	23.07	—	7.69	7.69	7.69
Malden	16,407	4	2	50.00	—	—	50.00	—
Fitchburg	15,575	9	2	11.11	—	—	—	—
Waltham	14,609	13	0	—	13.38	—	—	—
Newburyport	13,716	8	2	—	25.00	—	—	—
Northampton	12,896	—	—	—	—	—	—	—

Deaths reported 1,785: under five years of age 626; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 308, acute lung diseases 333, consumption 198, diphtheria and croup, 139, scarlet fever 51, typhoid fever 23, diarrhoeal diseases 26, measles 19, whooping-cough 13, malarial fever 14, cerebro-spinal meningitis nine, erysipelas seven, puerperal fever seven. From diarrhoeal diseases, New Orleans 11, New York seven, Baltimore and District of Columbia two each, Boston, Pittsburgh, Charleston and Fall River one each. From measles, New York seven, District of Columbia six, Baltimore five, Fitchburg one. From malarial fever New Orleans five, New York four, Baltimore and Springfield two each, Somerville one. From whooping-cough, New York five, Boston and Milwaukee two each, Baltimore, District of Columbia, Pittsburgh and Cambridge one each. From cerebro-spinal meningitis, New

York and Lynn three each, Milwaukee two, Fall River one. From erysipelas New York and Boston three each, Newton one. From puerperal fever, New Orleans four, Pittsburgh three.

In the 28 great towns of England and Wales with an estimated population of 9,244,089, for the week ending December 24th, the death-rate was 20.8. Deaths reported 3,678: infants under one year of age 818; acute diseases of the respiratory organs (London) 337, whooping-cough 145, scarlet fever 91, measles 79, diphtheria 47, fever 47, diarrhoea 23, small-pox (Sheffield 21, Bristol two) 23.

The death-rates ranged from 15.5 in Derby to 31.7 in Blackburn; Birmingham 21.6; Bradford 19.1; Bristol 22.4; Hull 19.3; Leeds 16.5; Leicester 31.3; Liverpool 20.3; London 18.6; Manchester 28.9; Nottingham 19.3; Sheffield 23.9; Sunderland 23.3.

In Edinburgh 21.2; Glasgow 23.5; Dublin 29.4,

The meteorological record for the week ending January 7, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole, of the United States Signal Corps:—

Week ending Saturday, Jan. 7, 1887.	Barom- eter.	Thermometer.			Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.		
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration Hrs. & Min.	Amount in Inches.
Sunday, ... 1	30.05	43.0	55.0	19.0	100.0	100.0	100.0		S.E.	S.	S.	18	18	15	O.	R.	R.	16	.56
Monday, ... 2	29.84	38.0	57.0	27.0	96.0	85.0	77.0	76.0	W.	N.W.	W.	6	14	18	O.	O.	O.	2	.27
Tuesday, ... 3	30.02	26.0	31.0	24.0	82.0	52.0	69.0	68.0	W.	N.W.	W.	12	16	9	O.	O.	O.		
Wednesday, ... 4	30.13	25.0	29.0	21.0	73.0	94.0	94.0	87.0	W.	W.	W.	12	12	12	F.	N.	N.	5	.01
Thursday, ... 5	30.12	21.0	27.0	17.0	72.0	52.0	61.0	62.0	N.W.	N.W.	W.	23	20	18	C.	C.	C.		
Friday, ... 6	30.15	29.0	35.0	14.0	63.0	45.0	68.0	69.0	W.	S.W.	W.	18	6	18	O.	O.	O.		
Saturday, ... 7	29.82	37.0	41.0	30.0	84.0	100.0	84.0	89.0	W.	S.W.	W.	4	12	12	O.	O.	O.	1½	*T
Mean, the Week.	30.019	30.9	30.0	22.0				77.3										24½	.84

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 7, 1888, TO JANUARY 13, 1888.

TUSON, LOUIS S., captain and assistant surgeon. Relieved from duty at Headquarters, Division of the Missouri, and as examiner of recruits at Chicago, Illinois, and ordered for duty as post-surgeon at Watervliet Arsenal, New York, relieving Capt. Henry G. Burton, assistant surgeon. S. O. 5, A. G. O., January 7, 1888.

BARNETT, RICHARDS, captain and assistant surgeon. Ordered from further duty in Division of the Atlantic, to duty at Fort E. L. Kansas, to take effect at the expiration of his present sick leave. S. O. 5, A. G. O., January 7, 1888.

APPEL, A. H., captain and assistant surgeon. Granted leave of absence for twenty days. S. O. 1, Department of the Missouri, January 3, 1888.

BAXISTER, WM. B., first lieutenant and assistant surgeon. Ordered from Fort Lowell, Arizona, to Fort Wingate, New Mexico. S. O. 3, A. G. O., January 5, 1888.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE WEEK ENDING JANUARY 7, 1888.

MURRAY, R. D., surgeon. On being relieved at Ship Island, Miss., to proceed to Key West, Fla., and assume charge of the service. January 4, 1888.

DEVAN, S. C., passed assistant surgeon. Relieved from duty at Port Townsend, Washington Territory, to assume charge of Sapele Quarantine. January 5, 1888.

GLENNAN, A. H., passed assistant surgeon. Relieved from duty at Key West, Florida, to assume charge of the service at Port Townsend, Washington Territory. January 5, 1888.

CARRINGTON, F. M., assistant surgeon. Promoted and appointed passed assistant surgeon from January 20, 1888. January 7, 1888.

SOCIETY NOTICES.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.—THE SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE. Special meeting. By invitation of Prof. F. W. Peabody, a special meeting of the Section will be held in the building of the Peabody Museum, Harvard University, Cambridge, on January 25, 1888, at 7.45 o'clock. Professor Peabody will describe the recent explorations carried out under his direction in the Serpent Mounds, and exhibit and explain the important relics there discovered. All members of the Massachusetts Medical Society are cordially invited to be present. The Peabody Museum is on Divinity Avenue. Leave the cars at Quincy Street.

A. L. MASON, M.D., *Chairman.*

ALBERT N. BLODGETT, M.D., *Secretary.*

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.—SECTION FOR OBSTETRICS AND GYNECOLOGY. This Section will meet at 19 Boylston Street, on Thursday, January 26th, at 7.45 o'clock. Dr. John Homans will report a case "Of Semi-solid Ovarian Tumor mistaken for a Uterine Fibroid; Ovariectomy; Recovery." "A Case of Successful Removal of a Large Uterine Fibroid by Laparotomy." Dr. E. W. Cushing will report a case of "Supposed Tubal Pregnancy; Rupture; Recov-

ery." The discussion will be opened by Drs. R. H. Fitz, John Homans and J. P. Reynolds.

J. W. FARLOW, M.D., *Chairman.*

GEORGE HAYEN, M.D., *Secretary.*

"The Pinckney."

MEDICAL SOCIETY OF THE STATE OF NEW YORK.—This Society will hold its eighty-second annual meeting at Albany, on the 5th, 6th, and 9th of February, 1888.

OBITUARY. REV. PETER PARKER, M.D.,

Died at Washington, D. C., January 10, 1888, aged eighty-three. Dr. Parker was a graduate of the Medical Department of Yale College, and was elected an honorary member of the Massachusetts Medical Society in 1861. His presence at the annual meeting of the Society about ten years since, soon after his return from China, will be remembered by all who were present and listened to his interesting account of his work as a Medical Missionary in China. Dr. Parker devoted the best part of his life to mission work in China.

Dr. Parker, in his recent work on Medical Missions, says of Dr. Parker, "This pioneer of Medical Missionary work arrived in China in 1834, and established a hospital at Canton, which soon became so popular, that patients of all ranks, and from distant parts of the country flocked to it."

On his return to America in 1841, he visited Edinburgh, where he was the guest of Dr. Abercrombie, and the result of his visit there was the formation of the Edinburgh Medical Missionary Society. On his arrival in Boston, early in 1841, a meeting of the Boston Medical Association welcomed him, and after commending his work in a series of resolutions, appointed a committee consisting of Drs. Jackson, Warren, Shattuck, Hooper and Bowditch, who soon raised the sum of \$5,000 in aid of Dr. Parker's medical work in China.

In 1845, he was appointed by the United States Government secretary of legation and Chinese interpreter, and some ten years afterwards was appointed United States Commissioner to revise the treaty of 1844.

Dr. Parker was specially noted for his skill, in general, and in ophthalmic surgery, and the reports of his operations, as published in the *Chinese Repository*, a journal published in the English language at Canton, compare very favorably with modern reports of the same nature.

APPOINTMENTS AT THE CARNEY HOSPITAL.

The following appointments have been made at the Carney Hospital: Dr. George G. Sears, registrar; Dr. E. K. Dunham, pathologist.

ERRATUM.

In last number of the JOURNAL, page 32, line 2, for "Personal" read "Professional" Reminiscences.

DEATH.

Died in Washington, D. C., January 10, 1888, Peter Parker, M.D., M.M.S.S., Hon., aged eighty-three years.

BOOKS AND PAMPHLETS RECEIVED.

Forensic Surgery. Wm. Zuppan vs. Wm. Dickinson, M.D. Verdict for defendant. John D. Johnson, Esq., counsel.

Address.

PROFESSIONAL REMINISCENCES.¹

BY BENJAMIN EDDY COTTING, M.D., ETC.

THE local semi-social association, the "Roxbury Society for Medical Improvement," has had from the start my earnest efforts, and whatever I could do for its interests and prosperity.

And further, I am the only surviving member of the committee appointed to organize this, the Norfolk District Medical Society, in 1850. Its early developments were not fully satisfactory. Social meetings having been suggested to increase good fellowship, to bring out greater numbers and to excite them to extra work, I was the first to have such meetings at my house; and subsequently there were many more such at the same place, with best results.

For a long while this Society was noted for the social and friendly relations of its members, among whom, from the first, were as high-minded and true men—able and experienced—as ever belonged to the profession. It was a pleasure and privilege to be associated with them. I cannot withhold an instance of the amenities of times alluded to. The late Dr. Monroe, Sr., was always my opponent in Society discussions—and naturally so, being as he was, originally, of the most "heroic" school.

Once hearing that I was to read a paper, he rose from a sick bed, came to the meeting (where he was obliged to lie upon a sofa), and earnestly assailed my positions. After adjournment he called me to his side, said that he was ill, and wished my diagnosis and advice. I took him in my chaise to my own house, where he remained several days. During this time I examined his case, gave him my opinion, and my advice which he promised to follow.

In illustration of our contention: Dr. Monroe always declared that membranous croup could be "broken up" without failure, by heavy doses of sub-sulphate of mercury; that, with this remedy, he never lost a case in that disease. I, on the contrary, maintained that it was a self-limited disease, especially dangerous by its local affliction; that, when recovered from, it was through the normal separation of the peculiar membrane; that the inhalation of soothing vapors was most likely to bring on a favorable issue, while more humane in any event; and in such discussions as ours, no case should be cited, unless the characteristic tubular membrane had been secured, before or after death. To which he would rejoin that the sub-sulphate arrested any such formation or tendency to it, and therefore he could not exhibit a membrane as I had done. I again answered that the drug had never had this effect in any case where I had seen it tried; and that I could only say that probably, by some fortunate chance, the real disease had not appeared in his circuit, for I had known of its absence from places for a long time, to return and prevail again without known reasons.² If it had been in his town, I thought, cases must have occurred wherein the membrane had formed before he had been called

to the patient, the disease often being so insidious as not to be recognized until danger from the membrane is imminent. For example, I once gained greater reputation for predicting a fatal result than in any successful case of the kind. The child was called in from its play in snow-slop in the street. The disease was found fully developed; but my opinion that there was hourly danger was indignantly scouted by the bystanders. The child died before the next morning; and for years, I was pointed out by amazed attestants as *the man who said the child would die!*

Thus we argued, earnestly but without offence. We could differ radically on professional questions without personal estrangement.

At one time this Society was one of the foremost in the State in active and good work and its example roused other societies from their lethargy.

It is now looking up again; and, under its present able and efficient officers, and its intelligent and aggressive leader, permeated with the new and fresher blood of its recent acquisitions, bids fair to regain its old position among the District Societies, and to be a source of usefulness to the profession and the public, as well as to its members.

The social reunion to follow this meeting is a proof, perhaps the last one I can give, of my continued belief in the real utility of mingling pleasant with useful things, even at meetings for the advancement of science.

How it happened that I should get involved in so many of these and such like professional matters outside of my personal routine work, I cannot, I must repeat, even now comprehend. It certainly was not of my own seeking. Much of it was foreign to my personal instincts and private interests. No selfish motive could ever have induced it. I had all the practice I wanted. The labor required, turned to personal ends, would have greatly increased my acquisitions; the time taken could have been occupied with far more congenial matters; and the money spent, from my own *earnings* solely, (literally, from first to last, more than "tithes of all I possess.") would be a very desirable addition to the little I have been able to accumulate for the shutting-in clouds of life.

I sought no place, but whenever duties were imposed on me I have endeavored with earnest effort to perform them. If any good has resulted, that is a satisfaction. If not, the intention and the effort were there all the same.

In a former part of this paper I told of my studies in the natural history of disease, and how it was shown that, disease having a beginning, middle and ending of its own, medication, however useful it might be, was not essential for restoration to health. I have myself been through several severe attacks without resort to drugs. A few years ago, during an unusual prevalence and fatality of the disease, I passed safely through a desperate attack of acute pneumonia without a particle of medicine of any kind, to the anxious apprehension of attendants, who thought all was over with me on that account. Even in occasional delirium my wishes were complied with in respect to medication. Convalescence was as speedy and perfect as it ever is, and no vestige of disease has remained.

With such experiences, strange as it may seem, I have a stronger faith in drugs than in my earlier days—in their proper places. Their proper places, how-

¹ Read, in part, before the Norfolk District Medical Society, October 23, 1887. Concluded from page 63.

² I can now add, as a curious fact, that in my own neighborhood where I have formerly known it to occur at the same time in several families, and several cases in a single family, there has been for years little or no membranous croup, some prominent practitioners not yet having seen a case of it here. Of a truth the migrations of disease are beyond our ken.

ever, are not in "breaking up" disease, or in continuous administration during its usual course.

It will be a happy day for patients, to say nothing of the true physician, when the medical attendant can unreservedly speak to confiding and obedient listeners, the solemn truths of his profession in regard to its limitations. Invaluable and indispensable as the profession is and always will be to individuals and the community, its worth rests on far different foundations than a capacity for dosing. In this respect I cannot forbear re-quoting the words of Dr. Moore (the father of Sir John, the hero of Corunna), as true now and ever will be as when uttered a hundred years ago: "The difference between a good physician and a bad one is certainly very great; but the difference between a good physician and no physician at all, in many cases, is very little" — a truth worthy of all acceptance. A good physician, often seeing that his patient will be as well, if not better, without medicine, will, regardless of outside pressure however great, wisely withhold it. "Fools rush in" is a fraction of a favorite quotation of an old professional friend, which at the present time I forbear to complete.

I have myself proved, to my own satisfaction at least, that drugs are no more requisite for the "cure" of disease than splints are for the healing of fractured bones. Both may be of greatest service, but neither are absolutely necessary, and on neither does recovery actually depend. I have successfully treated many hundreds of cases of disease without drugs, and a few fractures without splints. One of the most satisfactory results of a fractured clavicle in an adult was so treated, and I have seen results quite as good as after best attention and care, in a case of smashed-up elbow (condyles, olecranon and all), when undesirably left to itself, unsupported after first adjustment. This is no argument against splints, or drugs even, but shows only that they, while useful, are not necessarily essential.

Nature indeed restores the sick and the injured, but the physician should "cure" the patient by taking the most judicious *care* of him. For the present, and, if "indications" are of any worth, for some time to come, the physician's *duty* will chiefly consist in restraining his own and people's tendency to over-dosing, and perturbing interferences. It is truly a pity that the ill should have to endure so much more than their ailments, from the hands of mistaken kindness.

The inordinate use of quinine affords a good illustration. Its reputed power to "jugulate" intermittent fever has induced its almost universal use for all manner of diseases, especially where any periodicity can be attributed to the ailment, or any "malaria," so-called, suspected, however irrational such supposition may be. The evil thus done can hardly be over-estimated.

It may be doubted even, speaking not without knowledge thereof, whether the "quininism," or "quininids," thus engendered, worse sometimes than the original disease itself uninterfered with, may not more than overbalance any "jugulation" ever actually effected, so recklessly has the drug been used.

Moreover, its reputation as a "specific" has led to an amount of harmful experimentations, in the hope of finding "specifics" for other diseases, that is painful to contemplate. Possibly more mischief has resulted from this source than all the good achieved by

the drug, even taking the estimation of its most ardent advocates.

More than three million (3,000,000) ounces of quinine were consumed in the United States alone last year (1886), and the amount used is greatly on the increase. What if it were all of standard quality and strength!

But the popular idea of a physician, and the necessity of drugs, even in the profession itself, is far different from that we advocate. Most people regard a doctor, especially their own attendant, skilful, if a ready doser, one who can hit upon the right medicine even without examining the patient. More than once have I, in case of supposed urgency, to satisfy an eager demand for it, sent a remedy (a harmless one of course), ahead by the messenger, and, on my arrival, found friends assiduously administering it. This before I had seen the patient or had any adequate idea of his malady. Think for a moment how unwise they so doing; and yet these people were accounted among the most intelligent in the community!² On the other hand, and not a solitary instance, a well-to-do patient has objected to his bill, saying: "No doubt you have made the visits, but only on three or four occasions did you write a recipe. I am willing to pay for those, but not for visits when you did nothing."

Many persons like to have their ailments magnified, as though it were a meritorious distinction, but in attendance upon my patients, whether rich or poor, I have always endeavored to render their calamity (for sickness *is a calamity* and nothing else), as little dispiriting and otherwise burdensome as possible. I was never an alarmist. Having an eye to the possibilities of the situation, I have made everything as quiet as possible with as little disturbance to family routine, and, I may add, with as little expense³ as circumstances permitted. Sanitation, so-called, has not been neglected — guided not by rules, often absurd in given cases, but by what little common sense I possessed, and by the possibilities of improving the surroundings of the case. As to the patient himself, I have sought his *best* treatment as a *sick man* rather than as a man sick of a nominated disease. Depending less on routine prescriptions than on general rational management, I have of course been guided by the best diagnosis of the case obtainable by myself, or others when assistance seemed requisite. Still I have always, regardless of pecuniary or personal consequences, withheld drugs as far as *possible*, as I would wish done in my own case in like circumstances. This having been generally understood from my start in practice, has deprived me of the patronage of a number, who said that when they were sick they *knew* that they needed *medicine*, but if they sent for me they were not sure to get it.

Nevertheless, as new medicines and methods have been suggested, I have tried them as opportunity offered, in order that I might not be rightfully charged

² I have always tried to impress upon my patients that it is better to wait and do nothing than to administer medicines in ignorance of their nature and of the nature of the disease, often quoting the saying of Prest, Kirkland, H. C., that "when you know not what to do, take care that you do you know not what."

³ More than one subsequently seeing family has recently told me that had I exacted payment of them in their early struggles and first years of sickness they could never have risen out of their poverty. And these were never considered "poor people." Nor is such experience peculiar to one neighborhood. It is related of a notable family by one of themselves "our circumstances have been such that the increase of expense which would necessarily have attended upon the sickness of any one of us might have reduced us to real distress," Cabot's memoir of Emerson, 1887, Vol. I, p. 28.

with ignorance or unreasonable doubt of their value. In reviewing my cases I find no cause to regret omission. I wish I could conscientiously say the same of professional commission. May I not charge some of the latter to the irresistible tendency of the times?

General office practice I have always avoided, wishing my house to be my home, a private residence, as much as possible. I never had office hours.

Practice as a consultant I never inclined to, being, constitutionally, in a great measure unfitted for it. It has cost me more for consultations than I have ever received from them. After a consultation I have too often lost the patient; sometimes to the consultant, who should *never* take a case in such circumstances! Autopsies in my circuit, when paid for, have been usually paid for by myself.

Having known much of the profession from very early youth upwards, with a somewhat clear apprehension of its responsibilities and difficulties, its perplexities and trials, I entered it in the laudable hope of gaining an honest and reasonable livelihood, and of being able to render adequate service in return. I do not remember that I specially considered, as some pretend to, the profession as one to "do the most good in." I diligently labored to be able to do "*well*" (as my first patient expressed it) the duty of a good "family physician" in the full sense of the term, as then understood—a term almost without meaning at the present day. Further than that no definite purpose entered into my anticipations; certainly no ambition, or thought even, for place or position. If either of these have fallen to my lot, a more selfish temperament would have saved me from yielding to others' wishes and accepting them. Position could give nothing but discomfort to one of my disposition; my professional work was enough, and more than enough, to occupy all my time. I had nothing personal to gain by taking office, but much to lose in case of unsatisfactory discharge of its duties. I have no apologies, however, for self-forgetfulness in these matters; let others take warning and do better.

As a result, I have no complaint to make against the world, professionally or personally, having deliberately determined, in whatever state therein to be content. If any have differed from me, or taken offence, they have been allowed to go their own way unmolested. I have seldom, if ever, stopped to notice abusive words or acts, to which all in a really active life in every profession are more or less subject. Fortunately, very few such have ever come to my hearing; and those have fallen generally upon deaf ears.

In my dealings with professional brethren, as well as others, I have always striven to ignore any such neighborly tendency in human beings, and have especially endeavored not to allow the possibility of anything of the kind to have influence in any public or private act of mine. The medical profession, through its constant contact with misery and affliction, naturally tends to moderate personal estimation and to assuage personal griefs. What are such trifles to the actual trials of the wretched? Its members are often unjustly reproached as over-sensitive and quarrelsome. There may be such ill-constituted mortals in it (they are everywhere), but the truth is, no other calling engenders so much fraternal respect among its members, or can show more numerous instances of enduring friendship—in my own case it has enhanced one which has lasted from *infancy*, now so many years.

"Who shall decide when doctors disagree," was originally said of casuists, not of medical men.

The profession demands of its members, throughout their whole career, a cheerful willingness to devote more than half their time and labor to the fitful needs of illness and penny, without thanks or hope of pecuniary reward. It even expects them to become, as it were, upper servants to the rich, and attendants of all-work to the helpless poor. It is a calling often to be tired *by*, but never to be tired *of*. It offers little promise to seekers of personal ease, or expectants of large possessions. Nevertheless, its compensations are neither few nor small; and its brotherhood is not among the least of these.

Quæcum ita sint—in spite of the initial famine incident to the profession, and the inevitably slow advancement in it—a patient's confidence, as said an eminent professor, being the hardest thing to acquire, and the easiest thing to lose;⁶ in spite of its privations and hard work, in spite of its annoyances and trials, in spite of its reputed jealousies and quarrelsome habits (which, after much and long observation, I can confidently aver are much less than among pure scientists and literary men, or in other professions, restrained as medical men are by a reasonable etiquette), in spite of its vexations and unrequited efforts, in spite of its thankless patients and wilful maligners, in spite of defections, when and where least expected, unexplained and unexplainable, in spite of all these drawbacks, so much and so often complained of, but no greater, probably, than in other callings—I am fully persuaded that even the life of a physician is worth living.

In so long and so varied a service, there must have been many and great shortcomings. These doubtless are better known and more fully appreciated by my neighbors than by myself. Thus am I rendered happy in the conviction that any attempt on my part to recount them on the present occasion would be merely a work of complete supererogation.

"A man's life," said the wise man, "is like an arrow shot through the air, leaving no mark"; fortunate, we may add, if it reach the target aimed at, though it hit not the bull's eye.

For myself, the arrow has nearly sped its course. How far short of the target it will have fallen may soon be known;

—*moriturus sum*—

and if, perchance, a professional epitaph be ever sought for—to indicate a life-aim, and to conform more nearly to truth than most such tributes to the dead, let it be:

HE CURED THE SICK WITHOUT DRUGS.

—For a comprehensive, if not quite comprehensive sentence, intended to describe the mental tastes of its subjects, commend to us the following sentence from a western contemporary's obituary notice of a clinical teacher, recently deceased. "All his life he has exercised a vigorous opposition to homæopathy, to alcohol, to tobacco, to tea, coffee, etc." The *cetera* leaves little more to the imagination, but we suppose it includes such things as the mind-cure, onions, street-bands, and again *cetera*.

⁶ I once lost a profitable and apparently devoted family for not seeing the *post-mortem* in a crowded street-car. That *he saw me*, and *did not speak to me*, was of no account! My offence was unpardonable, and they were ever after my professional detractors.

Original Articles.

THE TREATMENT OF INFLAMMATIONS IN THE REGION OF THE ILEO-CECAL VALVE.

BY M. H. RICHARDSON, M.D.,
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FOR the purpose of discussion I have divided the cases of inflammation in the ileo-cæcal region into the following classes:

(A) Mild cases.

(1) Where the disease is mild, though acute, and has the usual physical signs, that is, dulness and tenderness in the right iliac region, and recovery follows without the formation of abscess—in other words by resolution of the inflammatory exudation.

(2) Cases which run a mild course and terminate in an abscess in the right iliac fossa shut off from the general peritoneal cavity, accompanied by the usual physical signs.

(B) Severe cases.

(1) Cases which run a violent course in which a general peritonitis follows a perforation of the appendix or cæcum without the formation of abscess.

(2) Cases in which the violence of the symptoms is due to abscess involving more or less the general abdominal cavity and which may or may not be detected by physical examination.

For the purposes of a discussion which is limited to the surgical treatment of this condition, I think that the above enumeration covers all the points in question.

In the treatment of the first class of cases it is evident that the great danger to be guarded against is the infection of the general peritoneal cavity, or the sudden change from a partial peritonitis of a very mild type to one of the "foudroyant" variety.

The following cases illustrate these two classes:

(A) Mild type. Resolution, or abscess without obstruction or other violent symptoms.

CASE I. L. L., male, aged forty-five, seen by me June 8, 1886. A few days before he had been suddenly seized with pain after a supper of strawberries and lemon pie. Got up and had several loose dejections. The next day was up and about his business. In the same afternoon went to bed with the same general pain he had had before. The pain gradually became localized, and he became able to sit up. Was better and then worse with the pain localized in the right side of the abdomen till the day of my visit, which was five days after the first attack. I found him with a temperature of about 102° in the evening, and with marked dulness and tenderness in the lower part of the abdomen on the right side. He was not suffering very much pain and did not have the appearance of being very ill.

He was advised to have a poultice, opium enough to keep him comfortable, and very cautious feeding. A few days later I saw him again, the attending physician meanwhile keeping the case under careful observation, and found the dulness and resistance decidedly less. A few days after that I saw him again. The pain had disappeared and he was very comfortable. The signs were much less in the right iliac fossa, and he was entirely convalescent. He made a rapid and complete recovery and has had up to the present time, no return of the trouble.

CASE II. Male, aged thirty, was taken with pain in the right iliac fossa, October 9, 1886, after lifting some heavy boxes. It was thought by the attending physician that he had ruptured himself in lifting. Nothing was noticed at the time of the alleged accident, except that he felt for some hours after languid and listless. On Thursday following the Saturday upon which he first had his pain he came down stairs, and the next day went into Boston and out to Cambridge. In the meantime he had been confined to the house. The following day, Friday, he was down sick again, with pain in the right iliac fossa. He had some fever and required morphia subcutaneously. The history as given by the patient was "that he was lifting heavy boxes some time Friday between four and seven in the afternoon." He felt no special trouble except languor quite soon afterwards. He did nothing but went and sat down, saying he felt tired out. Never had anything of the kind before. At the time of my examination which was about a week after the alleged accident, I found him in bed with a morning temperature of 102.5° and a pulse of 100. He had the appearance of being quite ill, and evidently suffering considerable pain. In the right iliac fossa there was marked dulness on percussion with increased resistance and much tenderness. There was no marks of external violence.

I next saw him November 26, 1886. He said he had been out about two weeks. After my visit he remained about the same for some time. Then he began gradually to get better. The pain slowly disappeared but the tenderness remained about the same. The physical signs had disappeared. I was at that time of the same opinion as at first, and as I am now, that he had an inflammation in the region of the ilio-cæcal valve without abscess, and with a partial peritonitis.

In the treatment of cases like the above, it seems to me that the most important thing is to watch the patient very carefully and to be ready at any moment to meet a possible extension of the peritonitis, or the formation of an abscess, by surgical measures. I do not suppose there will be any difference of opinion that in such cases there should be no exploratory or radical operation advised unless the symptoms should suddenly indicate that the general cavity of the abdomen had become invaded either by the extension of an already-existing peritonitis, or by the rupture of an abscess hitherto concealed. The case would then become one of the second class or violent cases, the treatment of which will be considered later.

If resolution does not take place, an abscess may be formed which should be opened as soon as discovered, as in the following cases.

(2) Mild course, with formation of abscess in the right iliac fossa, with the usual signs.

CASE III. Eli Trahan, aged fifty-two, sea-captain, entered the Massachusetts General Hospital, Saturday, September 3, 1887, with the following history. Always well and strong. Sailed from Nova Scotia nine days ago. His bunk was occupied and he slept stretched out on some boards. He woke with the sensation of having strained his stomach. Felt severe pain all day. The pain was located in the right iliac fossa. Although his bowels had been regular he thought it necessary to physic himself, and accordingly took salts and castor oil, producing very free catharsis. The pain, however, continued and he noticed

¹ Read at the meeting of the Surgical Section of the Suffolk District Medical Society, December 7, 1887.

that it was very tender in the region of the pain. Two or three days ago he noticed a swelling in the right iliac fossa. It was very tender. There was no chill.

He is a stout and healthy looking man. Walks without difficulty. In the right iliac fossa there was an indurated mass reaching from the middle point of Poupart's ligament up to the level of the iliac crest. Inwards it extended a little more than half way to the median line. It was very tender, dull and fluctuating.

Operation under ether. An incision was made three inches in length parallel to Poupart's ligament, and between the ilium and the tumor. The dissection was prosecuted along the outer margin of the mass, and the peritoneum was lifted with the finger so that the under surface of the tumor could be reached. By means of a needle the abscess cavity was found and evacuated. The opening was enlarged and eight ounces of very fetid pus removed. The odor was distinctly fecal. A drainage-tube was inserted, and the wound partly closed with silk.

Antiseptic dressings. The next day he was very comfortable, and the discharge abundant. Cavity was syringed with dilute solution of corrosive sublimate. The second day there was abdominal pain, with rumbling of gas, but nothing passed the sphincter. There was very little abdominal tenderness or distension. In the region of the wound there was a little tenderness. During the following week he did uninterruptedly well. A week after the operation there was neither pain or tenderness. The induration was almost entirely gone. Discharge very slight; tube removed. September 15th he was discharged.

October 24th he was seen again at my office. He reported himself as perfectly well.

CASE IV. E. C., aged thirty-four, laborer. Entered the Massachusetts General Hospital October 13, 1887. Family and personal history, as far as could be learned, was unobjectionable. Is so stupid as to be unable to give any clear history of his present trouble. Said he had had a bunch in the region of the right groin for two weeks. That it had been painless, and not associated with any disturbance of the bowels. It had increased slowly in size. He could be made to say almost anything by asking him leading questions. On physical examination a swelling was found in the right iliac fossa, just above Poupart's ligament. It was tense, fluctuating, and not tender. The surrounding induration nearly filled the iliac fossa. He was examined by Dr. Fitz, who made a diagnosis of appendicitis.

Operation. An incision was made over the swelling near Poupart's ligament through the abdominal wall. A large quantity of thick odorless pus was evacuated. Exploration of the cavity with the finger failed to reveal its origin. It extended straight back through the iliac fascia to the sacro-iliac synchondrosis. No diseased bone was felt. It had been thought that this might be a case of abscess dependent upon diseased bone in that region. There was no evidence, however, that such was the case. A large drainage-tube was inserted, and antiseptic dressings applied. During the following week he improved rapidly. The tube was slowly pushed out of the wound, which was washed out daily with a weak solution of bichloride.

October 25th he was discharged with the wound still unhealed. A short time later he was seen by me and the wound found to be entirely healed. I came

to the conclusion that this was a case of abscess originating in the ilio-caecal region, and not connected with disease of the bone.

In the above cases I think there will be no difference of opinion that the treatment adopted was the best for all similar ones. The abscess cavity was opened from below, as far as possible from the peritoneal cavity. The incision was that made for ligation of the common iliac artery, and in the event of finding no pus, or of evacuating it, there was no possibility of contaminating the healthy peritoneum. In this class of cases, however, we must bear in mind the possibility of a general peritoneal infection, and the abscess should be opened as soon as it is discovered. The question here arises, it seems to me, whether we ought ever to make the abdominal incision, in cases like the first two, *before* there is evidence of a general infection of the peritoneum, or, in other words, for the purpose of preventing such infection. It is certainly not wise to interfere where there is little constitutional disturbance, and where there is good reason to think that resolution may take place. The conclusion to which I have come in regard to this point is that the patient should be watched with the greatest care, and, as soon as it seems probable that an abscess is forming, to explore by the post-peritoneal method, and evacuate if any pus is found. By this method there is very little, if any, danger of doing harm. It is, however, within the bounds of possibility that the latent inflammatory process should suddenly develop into a violent general peritonitis, either by the escape of faeces or pus into the general cavity of the abdomen. This event would be marked by the most violent symptoms, and the diagnosis would be easy. But it is just this accident which we wish to avoid, and to the avoidance of which all our efforts should be directed. It seems to me a fair question which has not been as yet solved, as to when it is our duty to interfere in mild cases in order to prevent their becoming severe. In the present state of our knowledge, as it seems to me, no rule can be laid down as to this point. Each case must be judged on its own merits. If the surgeon watches his case with the greatest care, and is ready at any moment to interfere, it seems to me best to wait a reasonable time for resolution, and then make the post-peritoneal exploration. I think it may be said that in neither of the classes of cases already considered is it ever justifiable to make any incision that opens the general abdominal cavity. It is only in the following class of violent cases that laparotomy is ever justifiable, and even in many of them I am of the opinion that a post-peritoneal exploration should first be done.

(B) Violent cases.

CASE V. H. K., aged fifty-five. Had had an attack of stoppage of the bowels about six months before. This continued some days, and was accompanied by great pain and distension of the abdomen. After the use of various remedies there was a free discharge from the bowels, and his recovery was rapid. About the 18th of August, 1887, he was seized with a violent pain, not especially localized at first, with distension of the abdomen, and complete inability to get anything through, either faeces or gas. Temperature was moderately elevated. Pulse was good, ranging about 100.

August 19th I saw him for the first time. On physical examination nothing was found except great distension of the abdomen, with general tenderness.

The pain was general also, with some tendency to localization in the right iliac region. It was impossible to make out a diagnosis with accuracy. It was thought, both by the attending physician, Dr. Cilley, and myself, that the case might be one of general peritonitis, with perforation of the appendix. At the same time the history of an attack precisely similar with complete relief after an evacuation of the bowels, caused an unduly favorable prognosis, and delayed till too late the question of operation.

The distension continued, however, and also the pain. The question of laparotomy was then considered seriously, and the occasion for its performance seemed to have arisen. There was great distension of the abdomen, an evident general peritonitis, and pain more distinctly localized in the region of the appendix. While we were considering the question of an operation he had a very abundant discharge from the bowels, and he seemed so much better that no operation was thought necessary. We were, however, much deceived in the gravity of the case, for that same night he collapsed and died.

At the autopsy, six hours after death, the vermiform appendix was found to have been perforated, and there was a general septic peritonitis, with the usual collections of pus and exudation. The appendix contained a small concretion, which had evidently been the cause of the whole trouble.

In this case it is evident, in the light of the autopsy, that the operation of laparotomy, with excision of the appendix, ought to have been done at the outset. It is also evident that nothing could have been accomplished by the so-called post-peritoneal exploration. In this case there were violent symptoms, prominent among which was obstruction, an evident peritonitis, and very severe constitutional symptoms. There were no physical signs to guide either in diagnosis or in treatment. By physical signs, I mean signs of localization of the peritoneal inflammation.

It seems to me that this is a distinct type of case, and that the indication is perfectly clear. The existence of a general peritonitis with obstructive symptoms means that a laparotomy must be done, and there is no use in any preliminary explorations, for the reason that it adds to the time and to the danger.

I do not think there will be any difference of opinion in a case like the above. The difficulty, however, is to be sure enough of your diagnosis to exclude abscess. It is taken for granted that an abscess should be evacuated post-peritoneally if possible, and that there is very great danger in the evacuation of one of these abscess-cavities through the intestines.

The point of the greatest importance in deciding between a laparotomy and an exploratory incision is the existence of a general peritoneal infection. If there is a great distension of the abdomen, vomiting, great constitutional disturbance—if, in other words, it is one of the desperate cases of this disease—it seems to me that we have to consider only the drainage of a peritonitis and removal of the cause. It is certainly true that a large proportion of the fatal cases of appendicitis are cases of perforation and fecal extravasation, for which the only remedy is laparotomy. It seems also, as Fitz has said,² that the diagnosis of such a condition is comparatively easy. If, then, a diagnosis of perforation and peritonitis has been made, the only reason why a laparotomy should not be done

immediately is that we may be sure we have made no mistake by performing the post-peritoneal exploration, and eliminating the possibility of an abscess drainable from behind. But if we should find and thus evacuate the abscess-cavity, we have still the main trouble unrelieved—the general peritonitis.

If the general peritonitis is due to the presence of a collection of pus so deeply placed that its presence cannot be detected before incision, the chances are, as it seems to me, that a laparotomy will have to be done eventually for the purpose of peritoneal drainage, even if the post-peritoneal operation is successful in reaching the abscess-cavity.

It seems to me that we have in the history of the case the most important data for the solution of this question. I take it for granted that no surgeon wishes to open the peritoneal cavity in any of these cases, if the same result can be reached by other means. If, then, we have good reasons for the belief that there is a sudden perforation of the appendix, with immediate lighting of peritoneal inflammation, we have just the case for laparotomy. The history of the case, as it seems to me, furnishes the best reason for the formation of this supposition. The sudden access of a severe pain, increased temperature, and general symptoms of violence to the peritoneum, mean either extravasation of feces or of pus from an abscess previously undiscovered, or, perhaps, unsuspected. This condition of things means laparotomy, first and always.

If, on the other hand, the onset of the symptoms is more or less gradual; if the patient survives, or is about the same, without any extreme symptoms; if there is no evidence of a general infection, then it seems to me that the operation of laparotomy is not justifiable until the preliminary exploration has been made.

In the preparation of this paper, I have been guided largely by the request of the Secretary to devote especial attention to the question of the anatomy of the parts, and the operative steps best adapted to the ends to be attained.

For this purpose I have made a few observations on the cadaver, of which the following is a brief summary. The number of subjects examined was fourteen—a number far too small to draw any very positive conclusions from—at least, in regard to points in which there has been any difference of opinion.

(1) Male. Median incision $3\frac{1}{2}$ inches in length. Appendix found easily. Also found easily by the incision for ligation of the common iliac. The appendix was found lying behind, free, $2\frac{1}{2}$ inches in length, with a mesentery. The cecum had no mesentery, and was only half covered with the peritoneum. The reflexion on the inner side was along the border of the psoas magnus, and outwardly, quite up to the iliac crest. The appendix could be brought to the incision by either method—median lateral, or by the semilunaris cut.

(2) Appendix $2\frac{1}{2}$ inches long. Had a mesentery. The base of the appendix, that is, the point of origin from the cecum, was two inches from the crest of the ilium, and $2\frac{1}{2}$ inches from the anterior superior spine. The base of the appendix was one inch from the reflexion of peritoneum over the iliac vessels down into the pelvis. This measurement shows how much the base can be shifted for purposes of operation. It was found, in this case, that the point in the abdomen

²Transactions Am. Med. Association.

directly over the appendix was $4\frac{1}{2}$ inches from the spine of the pubes along the outer border of the *rectus abdominis*.

(3) Appendix sought by the iliac-ligation incision. In this operation there is great difficulty. By the incision along the outer border of the *rectus*, it was very easy to grasp and lift it out. Length of the appendix, three inches. From the middle of Poupart's ligament to the base of the appendix, $4\frac{1}{2}$ inches. From base to reflexion over iliac vessels, $2\frac{1}{2}$ inches. In this case, it would have been very easy in life to have lifted and removed by almost any incision. It could have been excised with great ease from the median line. From the *linea semilunaris* it was easier than anywhere else. $4\frac{1}{2}$ inches above the spine of the pubes was found to be right over the base of the appendix.

(4) Parts injured by dissector. By median incision appendix not easily found; by semilunar very easily; but $2\frac{1}{2}$ inches long. Has distinct mesentery from ileo-cæcal valve in vertical line. Put on the stretch, the distance of the base from the reflexion is $2\frac{1}{2}$ inches. From the mesenteric line of attachment to the middle of Poupart's ligament, three inches. From spine of the pubes to the point just over the base, $4\frac{1}{2}$ inches. Same point to the anterior superior spine, $3\frac{1}{2}$ inches.

(5) Incision made at outer border of *rectus*, $4\frac{1}{2}$ inches above spine. Through two-inch and three-inch incision, impossible to feel and raise the appendix. Incision enlarged so as to see. Appendix found even then with difficulty, being bound down by adhesions, yet found to be directly under the point of incision. Appendix two inches long and obliterated. In this case, it seems to me an inflammation would have resulted in abscess, if anything, and it would have made its way towards the surface by Poupart's ligament.

(6) Same incision as before. Incision $1\frac{1}{2}$ inches. With two fingers tried to find and bring up the appendix. Found to be impossible even with large incision. Appendix base found directly under the point on the outer border of the *rectus*, $4\frac{1}{2}$ inches from spine of the pubes. The appendix was found to be adherent by its tip, which extended down into a diverticulum of the peritoneum. This attachment made it impossible to draw the whole appendix up to the wound. From the middle point of the Poupart ligament to the adherent tip $2\frac{1}{2}$ inches. Same distance from the anterior superior spine of the ilium. The cul-de-sac was $2\frac{1}{2}$ inches deep, and admitted two fingers.

(7) Same incision. Appendix not easily found by small cut. Not found by four-inch incision. It was found to be totally adherent and so completely concealed that it was only by persistent dissection that it could be made out at all. It was apparently outside the peritoneal cavity entirely. This may have been due to the adhesive peritonitis. The position of the base as in the others. The difficulty in finding was due to the situation behind the peritoneum.

(8) Same incision. Appendix very easily found, having a mesentery and no adhesions. The appendix was very short and stuck up into the abdominal cavity, one inch in length. Base $2\frac{1}{2}$ inches from the iliac reflexion. $2\frac{1}{2}$ inches from the anterior superior spine of the ilium and three inches from the pubic spine.

(9) Easily found. From spine of pubes $4\frac{1}{2}$ inches.

Anterior superior spine $3\frac{1}{2}$. Peritoneal reflexion over the iliac vessels closely attached to base. Not easily drawn out. Appendix very long and extending to the centre of the promontory of the sacrum. At the base of the appendix there was a cul-de-sac in the parietal peritoneum.

(10) Appendix found easily through an incision in the *linea semilunaris* large enough to admit two fingers. There was a separate mesentery. The base of the appendix was three inches from the centre of Poupart's ligament.

(11) Same incision. Appendix found very easily. Had a separate mesentery and was turned down along the outer border of the *psaos*. Base of the appendix $3\frac{1}{2}$ inches from the centre of Poupart's ligament and three from the anterior superior spine of the ilium. In this case the attachment to the reflexion over the iliac vessels was so loose, that it was possible to bring the base to the anterior spine, down to the centre of Poupart's ligament and even to the spine of the pubes.

(12) Cæcum free. Appendix easily found by the short semilunar incision. Well-marked mesentery, with appendix free in the abdominal cavity pointing towards the centre of the pelvis. The base of the appendix was four inches from the spine of the pubes. It was impossible to get it from behind through the iliac-ligation incision. This was a very movable cæcum. It was possible easily to lift the ileo-cæcal valve from the pelvis reflexion of the peritoneum at least four inches. It would have been possible to have lifted this appendix out of either of the cuts mentioned.

(14) In this case, the appendix and ileo-cæcal valve were bound down to the brim of the pelvis very closely indeed. The incision was first made parallel to Poupart's ligament, through which the end was found and drawn partly out. The same was done next through the lateral cut and then by the median. It was found as in the other cases, that it was more feasible to remove the appendix by the semilunar cut than by either of the others. The base of the appendix was placed $2\frac{1}{2}$ inches from both the centre of Poupart's ligament and the anterior superior spine. Appendix $2\frac{1}{2}$ inches long.

(14) The same cuts were made in this subject as in the others. The appendix was very loose, indeed, and the tip could be made easily to touch the last rib. It also could be brought to the spine of the pubes and over into the left side of the abdomen.³

The most evident fact established by these dissections is that the best place to open the abdomen for the purpose of finding the appendix vermiformis, is in the left *linea semilunaris* about four inches above the left pubic spine. If a small incision is made at this point the appendix can be grasped with two fingers and brought to the surface in many cases. In all the cases this can be done provided there are no adhesions, and there is no very great distension of the abdominal wall. As this exists, however, in just those cases where it seems to be necessary to open and remove the appendix, we must anticipate considerable

³ Since reading this paper I have made similar observations upon twelve subjects with the same general result. In some cases the base of the appendix has been extremely movable, and the appendix itself in very extraordinary positions. In one case the tip was found resting upon the right kidney, and in another in the region of the sigmoid flexure. There was the same variation as to the mobility of the base. The average case, however, showed that the *semilunaris* incision was the best on the whole.

difficulty in bringing up the appendix to the surface through a small opening. In such cases, where the base of the appendix is bound down by inflammatory adhesions, or where the normal reflexion of the peritoneum covering the appendix is so firm and close as not to permit of any considerable displacement from the iliac vessels, I venture to assert that it will be much less difficult to bring the appendix into the semilunar wound than into either of the others.

There is another reason for the selection of the incision rather than the one near Poupart's ligament. When the appendix is grasped by the latter cut, it is necessary to push the bowels away in order to proceed with the proposed operation. In the median or the semilunar cut, the cecum is pulled towards the cut in such a way as to carry with it the other intestines, leaving a clear space for the subsequent manipulations.

Another point, established, I think, by these dissections, and that is the extreme difficulty found in isolating the appendix after dissecting up the peritoneum in the extra-peritoneal incision. In the normal subject it is extremely difficult to find the appendix in this way, and to subject it to any surgical manipulations, even so simple as tying and cutting off, is incomparably more difficult than in the semilunar incision. Finally, I would say that I was very much surprised in reading the recent admirable article of Dr. Weir,⁴ of New York, on this subject, to see for the first time Treves's statement⁵ as to constant presence of a complete peritoneal covering to the cecum and appendix. In most of the cases observed above where the appendix was not adherent as stated, it was surrounded by peritoneum, but this was not true of the cecum itself, except in a few. In one case, the reflexion of the peritoneum left the parietes at the outer border of the psoas magnus and touched it again at the iliac crest, and in many of the cases the posterior part of the viscus was not covered by at least one-third.

The general conclusions to which I have arrived, are as follows:

(1) In mild cases of inflammation in the region of the appendix there should be no surgical interference till physical examination reveals the presence of an abscess which should be incised by the post-peritoneal method.

(2) In violent cases, where it is evident that there is a general peritonitis, laparotomy should be done immediately, just as soon as a diagnosis of general peritonitis has been made.

(3) In violent cases where it is doubtful whether the general peritoneal cavity has yet been invaded, and where the history and the physical examination favor the presence of an abscess in the ileo-caecal region, though it is impossible to locate the exact seat of the inflammatory process, an exploratory incision should first be made in the right iliac fossa, and the ileo-caecal region explored post-peritoneally.

(4) The best incision to reach the appendix in the average case, is along the outer border of the rectus, about $1\frac{1}{2}$ inches from the spine of the pubes.

(5) The best incision for extra-peritoneal exploration is parallel and close to Poupart's ligament, beginning in about the centre, and extending outwards and backwards a sufficient distance.

PERFORATION OF THE VERMIFORM APPENDIX, CAUSING AN INTRA-PERITONEAL ABSCESS AND GENERAL ADHESIVE PERITONITIS. — LAPAROTOMY AND DRAINAGE. — RECOVERY.¹

BY J. W. ELLIOT, M.D.,
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Instructor in Boston Polytechnic.

The patient was a physician in active practice, in the prime of life (thirty-two years) and in perfect health. In the last week of August he had a severe colic lasting three days, and requiring a dose of morphia, and subsequently he had occasional slight pains. He had eaten a great deal of fruit during the autumn, especially grapes.

On the night of October 29th he was attacked by a severe pain in the abdomen, for which he took morphia subcutaneously. On the following morning, October 30th, the pain was extremely severe with paroxysms, when chloroform, as well as morphia, was used to give relief. Morphia was given continuously every four to six hours. The seat of pain was between the umbilicus and pubes, extending to the right side, and shooting down into the bladder, penis and testicles, so that it seemed like the passage of a renal calculus. Micturition and defecation were painful and difficult. The evening temperature was 102°. He vomited during the evening.

October 31st. He had diarrhoea, with severe gripes. There was pain and tenderness over the whole abdomen, most marked in the lower part. The colour seemed to be full, but there was no tumor to be felt on the right side. Temperature 102°, pulse 120.

Nov. 1st. The abdomen was more rigid and somewhat distended; the pain in the left iliac fossa was nearly as great as in the right. Micturition became impossible, and a catheter had to be used from that time on. A hot-water injection excited very severe gripping pain. Temperature 102.8°.

November 2d. The abdomen was much more distended. Morphia was given in one-third grain doses.

On November 3d I first saw the patient, with Drs. Cutler and Wood, of Waltham. Although thoroughly under morphia he complained of severe pain and gripes over the entire abdomen, quite as much on the left side as on the right. His mind was wandering, and he was constantly picking at the bedclothes. His features looked pinched. The abdomen was greatly distended, hard, and as tight as a drum. *There was no dullness or tumor to be found.* Examination by rectum gave no positive evidence. Pulse 120. Temperature 101.5°. There was evidently a severe general peritonitis in process.

Dr. Cutler had already made the probable diagnosis of peritonitis, due to appendicitis, and I agreed with him. All the symptoms had become worse within twenty-four hours, and the situation seemed very grave. I thrust a good-sized aspirating needle in different directions into the right iliac fossa, but found no pus. As it was then after dark we decided to attempt nothing further that night.

November 4th. The patient had a poor night, with nausea, retching and vomiting. He also had had symptoms of collapse, with sub-normal temperature. Drs. Fitz and M. H. Richardson were called in consultation. The diagnosis of appendicitis was confirmed. The prognosis was considered unfavorable.

¹ Medical Record, June 11, 1887, p. 632.

² British Medical Journal, 1885.

³ Read at the Surgical Section of the Suffolk District Med. Soc. Dec. 7, 1887.

Exploratory laparotomy was decided on as giving the best, if not the only chance of life. At the hour of the consultation the temperature was not far from normal, and the pulse had improved. It was, therefore, thought advisable to wait twenty-four hours, in hope that the fall in temperature which had taken place in the last twelve hours indicated a change for the better.

November 5th. Another collapse, with pulse at 140 during the night. Much gas had passed, and the abdomen was less distended. There was considerable vomiting and retching. Temperature 102° , pulse 113. The pain could be more definitely located in about the middle of the pelvis. The same gentlemen were again in consultation, and laparotomy was unanimously agreed upon. Under ether Dr. Fitz thought he felt a resisting mass in the pelvis, but none of the others present were able to confirm this observation.

With Drs. Richardson and Cutler assisting, I opened the abdomen by an incision two and a half inches long, beginning at the anterior superior spine of the ilium, and running parallel to and one inch above Poupart's ligament on the right side. The cœcum and the omentum presented. I examined the cœcal region and passed my fingers towards the umbilicus, and then down over the pelvis. No cake or fluctuation was felt, but there was a vague feeling that the intestines were more firmly glued together in that direction. On separating those adhesions I opened a foul-smelling abscess, containing two or three ounces of pus, which ran out over the peritoneum. This cavity, when empty, seemed about the size and shape of an egg-shell. It was situated a little to the right of the median line, and just inside the brim of the pelvis. Its walls seemed to be formed by the gluing of intestines and bladder. The vermiform appendix was not seen, as the abscess was nearly three inches from the incision. The abscess and soiled peritoneum being washed with warm carbolized water 1-80, a glass drainage-tube was placed in the cavity, and the wound partially closed. The operation lasted about twenty minutes. There was considerable shock, the temperature rising to 103.2° that night.

November 6th. Temperature 100° , pulse 120. General condition fairly good. Tube discharged freely. Abdomen much distended and very sensitive.

November 7th. Great improvement in every way. Temperature normal, pulse 100.

November 9th. Doing well. A large defecation after taking two Seidlitz powders. Tympanites less.

November 10th. Temperature and pulse higher. The patient had severe griping pain. The general distension was much diminished, and a prominence had appeared near the wound. The sutures had been removed, and the wound was sloughy.

November 11th. Under ether, the wound was opened and a quantity of pus, which had collected in the loin, was evacuated. This second abscess was undoubtedly due to contamination of the peritoneum at the operation.

After this the temperature was irregular for a few days, but there was a steady general improvement. The tubes were washed frequently and drained well. Intestinal gas occasionally escaped from the tube.

November 19th. The patient was in excellent condition. Fæcal matter was washed out from the sinus.

November 28th. General condition good. No fæcal

matter had been observed to come from the wound for several days.

December 5th. The drainage tubes had been removed, and the wound had nearly healed.

Recovery complete.

In the vast majority of cases the perforated appendix gives rise to an abscess, which becomes glued to the abdominal wall, and which can be felt and opened from the outside without opening the peritoneal cavity. In a few cases the perforated appendix is not encapsuled, but remains free in the peritoneal cavity, giving rise to general purulent peritonitis, or it may be the cause of an abscess which forms between the intestines deep in the abdominal cavity, as in the case here reported. These cases present the general symptoms of perforation of the bowel, and are almost always fatal when left without operation. Laparotomy is obviously the operation indicated. Thus far, unfortunately, very few have been saved by operation.

Dr. Weir,² of New York, has recently collected the cases in which laparotomy has been done for perforation of the vermiform appendix. His table includes twelve cases, with three recoveries. With the idea of trying to establish the mortality of this operation, and without discussing the advisability of each operation, I shall include two more cases, one reported by Barlow and Godlee,³ recovered, and one by Gant,⁴ died. This makes fourteen cases, with four recoveries; to which may be added my case, which is almost exactly like Dr. Weir's last case, and we have fifteen cases, with five recoveries.

In these cases the appendix has been removed five times, with only one recovery, Dr. Hall's case. Removal of the appendix, then, increases the mortality. It is, moreover, unnecessary when it is so glued to the intestines as to form part of an abscess cavity which can be drained. When, however, there is general purulent peritonitis, and the perforated appendix is free in the peritoneal cavity, it should be removed.

I am greatly indebted to Dr. Wood, who scarcely left the patient's bedside for two weeks, and who has kindly furnished me with notes.

THE TREATMENT OF INFLAMMATIONS IN THE NEIGHBORHOOD OF THE CECUM.¹

BY E. H. BRADFORD, M.D.

FOUR cases have recently come under my care, which I will briefly mention, arranging them in the order of their severity and using them as types to illustrate the varieties of the affection as met with clinically.

CASE I. Adult, male. Sharp attack of pain in right abdominal region, tenderness and induration over right iliac region, some distension, symptoms disappeared under complete rest and local fomentations.

CASE II. Adult female. A chronic case of some weeks' standing, with a large and increasing mass of induration in the right iliac region, operation advised by Drs. Blake and Fitz. Induration incised and a cavity of some size opened above Poupart's ligament,

¹ Read at the meeting of the Surgical Section of the Suffolk District Medical Society, December 7, 1887.

² Med. Record, June 11, 1887.

³ Med. Times and Gazette, Dec. 19, 1885.

⁴ Med. Record, 1887, XXXI, 22.

a drainage-tube inserted, extending behind and to the outer side of the cæcum. Recovery took place in a few weeks.

CASE III. Adult, male. Sharp attack of right iliac pain, with vomiting and constipation, distention of abdomen, tympanites, collapse, subnormal temperature, slight cyanosis, rigidity of the recti muscles, and later diffused abdominal pain, a suspicion of an induration deep in the right iliac region felt on palpation, under an anæsthetic; operation proposed, but delayed for a short time at the patient's request, afterwards as there was some improvement in the patient's condition, postponed. The patient finally recovered entirely in three months, without any operative intervention.

CASE IV. Female, child ten years old, with dullness, tenderness, pain in right iliac region, fever and some abdominal distention, some constipation, no vomiting. The symptoms became worse, and an exploratory subperitoneal incision was made without detecting the abscess. Patient died twelve days later and at autopsy an appendicitis found with perforation of the cæcum and septic pyelophlebitis of portal vein. The operative wound had healed well and was healthy.

Using these cases to illustrate the usual varieties, a discussion as to treatment, will become a discussion as to treatment of cases of these different kinds.

For convenience, the following propositions are advanced, with, of course, the admission that it is impossible to codify exactly rules of treatment, and that individual judgment must be used in individual cases.

PROPOSITION I. In cases of chronic or subacute perityphlitis without a tumor, or with slight tumor or induration, and without alarming symptoms, an expectant treatment is indicated.

PROP. II. For cases of chronic or subacute perityphlitis with a large and increasing tumor, an extra-peritoneal incision is indicated.

PROP. III. For cases of acute perityphlitis with threatening symptoms and *with* a tumor, an incision is indicated (extra-peritoneal, if possible.)

PROP. IV. For cases of rapidly acute perityphlitis *without* appreciable tumor and with alarming symptoms, an exploratory incision (extra- or intra-peritoneal) is indicated.

Under Class IV, would be included the cases of direct perforation into the general abdominal cavity, more properly grouped under a separate head. There would be little difference of opinion as to the propriety of the treatment suggested in Proposition I, which will include by far the greatest number of cases to be met in private practice.

There would also be a general agreement now in regard to Proposition II, it being understood that the term "extra-peritoneal" is used as a convenient one (not as a strictly anatomical one), indicating draining from behind the peritoneum a subperitoneal abscess or an abscess separated by adhesions from the general peritoneal cavity. Statistics show that the percentage of recovery in such cases is greater after operative interference than after expectant treatment. The same may be said with greater force, with regard to Proposition III.

There is, however, much room for discussion in regard to Proposition IV. On the one hand, it must be admitted that there are a number of cases which recover where there are alarming symptoms, as represented by Case III, in which every symptom pointing to perforation and general peritonitis was present.

The statistics also, of laparotomy in such cases is not very encouraging.

On the other hand it must be regarded as true that the death-rate in cases of this class when left to nature must be very high, and that the conditions being often desperate, heroic measures are demanded. The cases treated by laparotomy are as yet few, and it is fair to reason that with increasing experience the rate of mortality will improve.

The place of incision in cases without appreciable tumor will also be a subject for discussion, whether median, abdominal, lumbar or inguinal. The only general guide we have is the anatomical one as to the seat of the cæcum and appendix. In regard to this matter, Treves's² investigation may be looked upon as of value.

After examining one hundred cadavers, he "found the cæcum usually lying upon the psoas muscle, and so placed that its apex or lowest point is just projecting beyond the inner border of that muscle. In a great number of cases the cæcum is entirely clear of both psoas and iliacus muscles and hangs over the pelvis brim or is lodged within the pelvic cavity. In eighteen cases out of a hundred the cæcum was lying within the pelvis or placed in contact with the upper surface of the bladder or uterus, or wedged in with the sigmoid flexure, or lying actually in contact with the left wall of the pelvic basin. In a majority of cases the appendix will be seen to lie behind the end of the ileum and its mesentery, and to point in the direction of the spleen.

In a certain number of cases, therefore, it may be assumed that the site of the cæcum is irregular and free from the parietal peritoneal surface. An abscess coming, therefore, from the front of the cæcum or the front of the appendix cæci would be isolated, like an island, in a sea of intestine.

These cases, however, would not be the rule, and furthermore, the number would be made smaller by the fact that inflammation of this sort tends to glue the cæcum, even if free, to back wall of the peritoneum, and to curl the appendix backwards.

In many cases, therefore, even of the acute variety and at an early stage, the abscess can be reached without opening the general peritoneal cavity, by the procedure employed in subperitoneal ligature of the common iliac. Although it has been clearly proved at the present time that the introduction of foul pus into the general peritoneal cavity is not necessarily fatal, and may produce no harm, yet it is axiomatic that where it is possible this should be avoided, especially as in a certain number of cases the canal of the appendix has not been occluded by inflammation and by the opening of the abscess into the peritoneal cavity, fæces would be introduced into the cavity.

The subperitoneal exploration of the abdomen has been advocated and carried out by König, Bordenhauer, and lately advocated by the Russians, Sneguiroff and Gubaroff,³ who have shown the feasibility of more extensive exploration than has formerly been used. This was attempted in Case IV, without success, partly through the lack of thoroughness on the part of the operator in attempting a procedure new to him, and partly because the patient was already suffering from septic pyelophlebitis of the liver, and beyond surgical help, but the attempt appeared to demonstrate

²Treves, Jacksonian Prize Essay.

³Centralblatt f. Chirurgie, Nov. 19, 1887, pp. 806.

the slight risk attending a subperitoneal exploration of the sort.

Such a subperitoneal exploration would be unsuccessful from anatomical grounds in a number of cases and laparotomy indicated, but it would seem that this course should be followed where practicable, and be considered in the doubtful cases with alarming symptoms where, owing to abdominal distension, palpation gives but little indication of condition of the back wall of the peritoneum.

Lawson Tait has said that he would open the abdominal cavity as readily as he would "put his hand in his pocket." We all of us naturally desire to emulate the success of the great English surgeon, but it should also be remembered that Verneuil is not far from wrong in saying that the present age is seized with a rage for bold surgery, a "*mania secandi*" a "*délire opératoire*," and that it is true that the best surgery is that which wins success while exposing the patient to the least possible risk.

REPORT OF PROGRESS IN GYNECOLOGY.

BY F. H. DAVENPORT, M.D.
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PATHOLOGICAL ANATOMY OF MEMBRANOUS DYSMENORRHEA.

DR. H. MEYER,¹ in an article on this subject, considers as true dysmenorrhœal membranes only those which, on microscopical examination, prove to be thrown off uterine mucous membrane. Our knowledge of the pathological anatomy of this disease is still very imperfect. The author describes eleven cases which he examined, and gives the microscopical appearances as follows: Smooth surface, a few lengthened gland tubules, enlarged and filled bloodvessels, great hypertrophy of the cell elements, with structures which resemble decidua and giant cells. In all the preparations one could see the endeavor towards cell growth, at the expense of the gland tissue.

In two cases in which the author scraped the mucous membrane three days before the menstrual period, he found endometritis, once of an exquisite glandular type, and the other more interstitial. The membranous dysmenorrhœa is, therefore, not associated with any one disease of the uterine mucous membrane. The important factors in the production of the pathological membrane seem to be marked injection and dilatation of the vessels, and increase in the cell elements of the intermediate tissue, by which the glands are pressed upon and narrowed. The author considers it probable that a suddenly occurring state of erection of the mucous membrane contributes to its separation, and the contractions of the uterus effect its expulsion.

PLASTIC OPERATIONS ON THE PERINEUM.

Dr. J. Veit² gives in this article his personal views of operations on the perineum. Starting from the universally accepted necessity of an operation in cases of complete rupture and marked prolapse, he next considers the question of the choice of method of operation, and recognizes any method as satisfactory which, with a moderate narrowing of the vagina and vaginal entrance, really forms a perineal triangle.

Healing by first intention depends entirely upon thorough antiseptics, and alone gives prospect of success. In addition to perfect cleanliness of instruments, operator, and field of operation, the author lays great weight on more or less frequent irrigation with a weak solution of sublimate ($\frac{1}{2}$ -1:5000). He considers it unnecessary to spend time over smoothing the refreshed surface, and while recognizing that good results have been obtained with various forms of suture, he considers that the continuous suture with catgut has the advantage, on account of its easy and quick application. The catgut which he recommends is that preserved in oil of juniper. The shape of the part to be refreshed should be as simple as possible, and he has had the best results with Sims's or Simon's in cases of complete rupture, and Bischoff's in incomplete, though other methods have given him good results. Fistulae have become more rare, and are to be considered the result of faulty antiseptics. The total extirpation of the uterus for procidentia is unwarrantable. So, too, the amputation of the cervix to reduce the size of the uterus is very rarely necessary, inasmuch as the hypertrophy will often disappear when the prolapse has been cured by operation.

NINETY CASES OF "ONE CHILD" STERILITY.

Attention has been lately drawn to this subject, and Professor Kleinwächter³ studied ninety cases of this relatively frequent form of sterility with reference to the cause. The cases, the details of some of which are given, are all of women who had either had one child at full term, or aborted once. Kleinwächter attempts to classify these in groups, according to their causes, but recognizes sources of error from the fact that often several diseases were present in the same case, any one of which would be a sufficient cause for the sterility.

Group I embraces the cases of inflammatory processes of the genital organs, the results of puerperal diseases, exudations after peri- and parametritis, oöphoritis, fixation of the uterus, with or without displacement, chronic metritis, sixteen cases. II, inflammatory processes and their results, not connected with the puerperium, eleven cases. III, chronic catarrh of the cervix, fifteen cases. IV, dislocation of the uterus, eleven cases. V, new growth of the uterus, eight cases; one mucous polyp and seven fibromyomata. VI, atrophy of the uterus, five cases. VII, new growths of the ovaries, three cases. VIII, causes outside the genital organs, seven cases; malaria and latent gonorrhœa, heart disease, gall-stones, one case of alcoholism, two cases of well-defined chlorosis, obesity. Group IX includes six cases for which no cause of the one child sterility could be found. Group X comprises seven cases of impotence of the husband. There were also, in addition to the chief complaints, in all the cases numerous complications.

Since in nearly half the cases there were inflammatory processes, partly a direct result of the first pregnancy and partly independent of it, the author looks upon this as a well-defined cause of the sterility. The causes operative in groups V - VII, except the case of the mucous polyp, he also considers sufficient. So, too, with group X, and probably in group VIII in the cases of chlorosis, with anomalies of menstruation, heart disease, and alcoholism. In the

¹ Arch. f. Gynäk., XXXI, 1, 1887.

² Deutsche Med. Woch., XIII, 38, 1887.

³ Zeitsch. für Heilkunde, VIII, 4, 1887.

other groups the condition of the genital organs is no sure cause of the sterility. This applies to cases of uncomplicated malpositions of the uterus, and of catarrh of the cervix, though Kleinwächter does not deny that the latter may be a cause in certain cases.

The author considers the prognosis in many of the cases as favorable, provided appropriate treatment were instituted. He recognizes the importance in doubtful cases of examining the sperma of the husbands.

A YEAR'S WORK IN LAPAROTOMY.

Dr. P. F. Mundé⁴ gives the account of his experience in abdominal surgery from October, 1886, to January 1, 1888, twelve working months, during which time he performed forty-five laparotomies. Of these, twenty-two were ovariectomies, thirteen salpingo-oophorectomies, two oophorectomies, two hysterectomies, four exploratory incisions, one for encapsulated intra-peritoneal abscess, and one for intestinal obstruction. There were eight deaths: five of the first category, one of the second, and of the last two. Mundé includes under the head ovariectomy, tumors of the ovary, great or small, and cysts of the broad ligament; under the second head the removal of diseased tubes, chiefly the operation commonly called Tait's; under oophorectomy, the removal of ovaries and tubes which macroscopically do not appear diseased, with the object of bringing on the menopause.

Among the especially interesting cases were three complicated with pregnancy. The first one was a large ovarian cyst in a woman who was five months pregnant. There was constant vomiting for three days after the operation, which was controlled by dilating the cervical canal thoroughly with the index finger, and a hypodermic of morphine over the epigastrium. The pregnancy went on to full term.

The second case was a large multilocular dermoid tumor, complicated with pregnancy. Premature delivery was induced at the seventh month, the result being a living child, and the tumor was extirpated five weeks afterwards with success.

The third case was of a dermoid cyst of each ovary, with pregnancy at five months. Difficult operation owing to old chronic peritonitis, from rupture of one cyst a year and a half before. Premature delivery on the third day. An interesting fact was that one of the tumors contained black, the other blonde hair.

One case was particularly interesting, as it was the third laparotomy for abdominal cyst in the same patient. In March, 1881, an intra-ligamentous ovarian cyst of the left side had been removed in Berlin, and in December of the same year a similar one of the right side. In May, 1887, she consulted Dr. Mundé for a large ventral hernia. An abdominal cyst was detected, which proved to be situated between the layers of the broad ligament of the left side. Patient was cured both of her cyst and of her ventral hernia.

One of the oophorectomies was performed for hysterio-epileptiform seizures, which the patient had had since the beginning of menstruation. All resources seemed to have been exhausted, and the ovaries were removed. There was marked improvement for several months, but ten months after the operation her condition was very much the same as before the operation.

⁴ Am. Jour. of Obs., January, 1888.

The only laparotomy for intestinal obstruction was in the patient who heads the list, upon whom Dr. Mundé did ovariectomy during pregnancy. Symptoms of obstruction came on two days after delivery, but consent to the operation was delayed a number of days. Then constriction was found from firm bands of adhesions. The patient lived only a few hours.

The details of a number of other interesting cases are given, for which the reader is referred to the article.

ON THE FREQUENCY OF MALE STERILITY.

According to F. A. Kehrer⁵ the cause of the sterility in many marriages is to be sought for on the side of the husbands oftener than has been supposed. This is apparent from the examination of the sperma, which Kehrer has made in ninety-six cases. In three per cent. there was impotentia coeundi, in all of which cases masturbation had been an element. The men suffered either from frequent pollutions, or from a premature ejaculation before there was complete immisio penis. In these cases conception may follow if a cylindrical speculum is inserted into the vagina before coition is attempted. In several cases this was tried with success.

In thirty per cent. there was azoö-spermia, and in these cases there was generally a previous history of gonorrhoea, with single or double orchitis. The author lays especial weight on the occlusion of the ductus ejaculatorii from gonorrhoeal prostatitis. He also found azoö-spermia in cases where there had been no previous disease and there was nothing abnormal about the genital organs.

Oligozoö-spermie existed in eleven per cent., with a previous history of gonorrhoea with orchitis, or syphilis, and usually masturbation. The author concludes that the diseases of the female genital organs, which are a cause of sterility, are very much fewer than is generally supposed. The most common cause he considers to be catarrhal affections, and he believes that there are bacteria present in these cases which destroy the ovum. It is a question whether the bacteria excite the inflammation in the mucous membrane, or whether they find in it favorable conditions for their development.

DIAGNOSIS AND SEPARATION OF PERITONEAL ADHESIONS OF THE RETROFLEXED UTERUS AND DISPLACED OVARIES.

Dr. B. S. Schultze,⁶ referring to the difficulty of treating the uterus when bound down in a retroflexed position by adhesions, the result of peritonitis, gives the details of a method which he has practised himself with marked success. These adhesions are often lax, or may be stretched by a reposer so as to bring the uterus into a normal position, but the malposition returns sooner or later. So, too, massage will often accomplish much, and a suitable support will now and then relieve symptoms, even when the uterus is not in a thoroughly good position. Schultze's method, which he has described before, has been only very exceptionally practised, and most writers express themselves with a good deal of reserve as to its practicability and safety.

The patient, having been anaesthetized, is placed upon the back, with the thighs flexed and abducted.

⁵ Beil. zur klin. und experiment. Geb. und Gyn., II.

⁶ Zeit. für Geb. und Gyn. XIV., Band. 11 Heft, 1887.

The fore and middle fingers of the left hand are introduced into the rectum, and faecal masses removed by irrigation. In order to easily pass the fingers above the isthmus of the rectum which lies in the neighborhood of the folds of Douglas's pouch, the irrigation is best continued. The right hand makes firm pressure over the abdomen. The body of the uterus is gently raised with the fingers in the rectum, and its contour, as well as that of the tubes and ovaries, carefully palpated. Sometimes the adhesions can be immediately made out. The fundus is carried as far forward as possible, and held forward by the right hand, and the character, point of origin and course of the adhesions carefully noted. Broad adhesions are separated with the finger-tips, much as an adherent placenta is separated from the uterine wall. During this manoeuvre the assistance of the right hand is necessary to fix the uterus. Separate bands are seized by the fingers in the rectum and separated from the peritoneal surface of the uterus by pressure with the hand through the abdominal wall, as close as possible to the uterus.

If the uterus is adherent over a broad surface to the anterior wall of the rectum it is separated by working the uterus forward with both fore-fingers, while the middle fingers steady the free surface of the rectum above the adhesions.

Similar manipulations are to be carried out in the cases of displaced ovaries, care being taken not to make pressure on the ovaries themselves, but on the adherent surfaces.

Schultze has never seen any severe peritonitis or inflammatory thickening, or hæmatocele follow. He recommends the method only to those operators whose sense of touch is very acute. The uterus needs usually to be held in position by a pessary for a time after the operation.

Clinical Memoranda.

A CASE OF STRICTURE OF THE RECTUM TREATED BY INCISION.¹

BY EDWARD REYNOLDS, M.D.

Mrs. B., twenty-nine years old, and a native of Halifax, presented herself for examination in the rectal room of the Boston Dispensary on June 8, 1887, with the following history:

Was in good health until she was twenty-two years old, when her second pregnancy terminated spontaneously in a rapid labor at seven months, but was followed by an illness, which she calls "inflammatory fever," of six weeks' duration, during which she had great abdominal pain and tenderness, was extremely constipated, and experienced more or less pain whenever her bowels moved.

Since then she has never been free from pain at stool, which was, however, endurable until two years ago, when it began to be severe, to persist for an increasing length of time after defecation, and to be accompanied by blood.

These symptoms steadily increased, till, at the time when she was first seen, she suffered from more or less constant pain, and was subject many times a day to attacks of intense tenesmus, during which she felt obliged to make violent and extremely painful strain-

ing efforts, during which a fleshy mass nearly two inches in length frequently protruded from the anus. The stools had steadily decreased in amount, and at this time frequently consisted of nothing but a little bloody mucus. She had no appetite, and frequently for days together was excited to nausea by any attempt to eat. Her cachectic appearance strongly suggested the latter stages of malignant disease, and she was, for the most part, confined to the house by pain and weakness, and by her liability to attacks of tenesmus.

On rectal examination, the anus were retracted and the sphincter tightly closed, and, on inserting the finger, it was arrested about half an inch above the sphincter by a firm and rigid stricture, with irregular and ulcerated edges, but of uniform shape and consistency. Its orifice was sharp-edged, and of about the size of an ordinary pen-holder, not admitting even the tip of the finger.

On the insertion of a speculum, the stricture was plainly visible, foul, bloody muco-pus oozing freely from its orifice.

No specific history could be obtained, and no secondary deposits could be found in the pelvis.

For three weeks, the stricture was dilated with the forefinger on every third day, in spite of the great pain which attended and followed each attempt. At the end of this time the lower edge admitted the finger as far as the base of the nail, but the upper part was still firmly resistant. She then had an attack of pelvic pain, which kept her in bed for a week, and on her reappearance at the end of this time, the stricture was found to have returned to its original condition.

It was easily re-dilated to the former extent, but as little or nothing more was gained during the next two weeks, as she was distinctly failing in strength, and was evidently in a condition in which she could not last long without relief, she was recommended to have the stricture cut; and, on July 19th, she was etherized at her home, and, with the kind assistance of Drs. R. W. Lovett and G. C. Munro, I dilated the sphincter and divided the stricture by a free incision, with a probe-pointed bistoury, in the median line posteriorly, cutting through into the peri-rectal tissue, and extending the incision up and down, till no constricting bands could be felt, but leaving the external sphincter untouched by the knife.

Little or no hæmorrhage occurred, but as she lived at some distance, the rectum was packed with iodoform tampons, after being thoroughly washed out with a weak solution of carbolic acid, and a drainage-tube was placed among the tampons to permit the passage of flatus or liquid feces.

During the night there was slight tenesmus, easily controlled by morphia; in the morning the temperature was 101.2°, and a slight, but very foul discharge was escaping from the anus. The packing was removed, and the rectum again washed out. The temperature was normal in the evening, and was never above 99° again.

Twenty-four hours after the operation, the patient volunteered the statement that she was more free from pain than for years before. On the second day she had a good, spontaneous movement of the bowels, followed by but moderate pain. By the fourth day she was eating well, and from that time on had a daily movement, without any great pain, and under the influence of a very moderate cathartic.

I had intended to have kept her in bed until the

¹Read at a meeting of the Surgical Section of the Suffolk District Medical Society, December 7, 1887.

wound had healed, but she got up on the third day, and remained up in defiance of orders, though without any immediate ill result.

A full-sized bougie was passed with ease on the fifth day, and has been passed at short intervals ever since.

At the end of five weeks the patient had gained eleven pounds, was blessed with a large appetite, and from an appearance of advanced cachexia, had become a very fairly healthy-looking woman. The stricture was re-established at its old site, but was short, soft, and elastic, in marked contrast to its condition before operation.

Since then there has been some gain in general condition, with but very little change locally. The bougie is now passed once a week, and its passage is still painful. There are still considerable ulcerations about the stricture, which yields very slowly to treatment, and the amount of pain caused by the bougie appears to vary with the size and condition of the ulcers, but the pain at stool is but slight. The patient has gained very greatly in flesh and strength, and is now able, on the whole, to enjoy life, though she will probably never be able to discontinue the use of a bougie.

CAUSATION.

No trace of a venereal history could be obtained from either the patient or her husband, except that he had had a "sore" seven years before marriage, which healed in ten days under the use of castile soap and a dressing of hard.

The stricture was sharp-edged, and uniform in shape and consistency, and all trace of induration disappeared so completely on its division, that for some weeks it was difficult to recognize its site.

In view of these facts, it seems to me that syphilis and malignant disease are unlikely causes, and that this case is probably one of those in which stricture results from simple ulceration. The symptoms all date from a period when the tissues were depressed in vitality by a puerperal illness of probably septic origin; and the authority of almost all writers on rectal disease leads to the belief that such a condition may give rise to rectal ulcerations of a low type, and that the existence of these simple ulcers, if prolonged by neglect and constipation, may be an efficient cause of cicatricial stricture.

CASE OF PERITYPHILITIC ABSCESS, BURSTING INTO THE INTESTINES.—RECOVERY.

BY O. W. DOE, M.D.

Mrs. B., aged 30. Very constipated for the last three years. Before that time, bowels unnaturally loose. On October 30th last, having had no movement for three days, she strained very hard at stool, but felt no immediate ill consequences. The following day, after exposure to cold, she had quite a severe chill, and later in the day (after dinner) another slight one, followed by fever and intense pain at the epigastrium. She vomited late in the evening, but the pain was unrelieved until the following morning, when she took morphine subcutaneously, and was obliged to have this repeated in the afternoon. Two days later she felt a soreness just below the level of the umbilicus, and an inch and a half to the right of the median line. Though this continued she went to drive on the

following days (Friday and Saturday). The bowels were natural. On Monday, while adjusting her corsets, she experienced a very severe pain at the sensitive point referred to. Notwithstanding, she went to the dressmaker's, fainting three times while there, but persisted in taking a drive in the afternoon. The following morning (Tuesday) she suffered intense pain in the ileo-cæcal region, the pain radiating both upwards and downwards. This pain continued until the Thursday night following, when it suddenly ceased, and she felt something give way at the tender point. On Friday she had a severe chill, followed by fever, free perspiration, and wakefulness. The chill was repeated on Saturday, but was not so severe as the previous one. On Sunday she had frequent dejections; none on Monday, but four on Tuesday; and on the evening of that day I saw her for the first time. She was very pale, face pinched and sallow, and was lying on her back, being unable to lie on the left side on account of a dragging it produced in the cæcal region. In this region the abdomen was more prominent than elsewhere, and palpation showed a hard mass, about three inches in diameter, tender on pressure, and giving, on manipulation, a gurgling sound. Light percussion gave a tympanitic note, heavy percussion marked dullness. There was no fluctuation at any time. A discharge from the bowels soon after my examination was very thin, light-clay colored, and contained a large amount of pus. Temperature 104.2°, pulse 124. Dr. Porter saw her with me in consultation, and advised stimulating and supporting treatment. The following morning at nine, temperature 103°, pulse 116. Tumor more marked than last night more dull. No dejection since last evening. 5 P.M., temperature 103.9°, pulse 118. 10 P.M., temperature 104.2°, pulse 122. During the day she had had one large offensive purulent dejection. Constant nausea, but no vomiting. Next morning, November 17th, temperature 103°, pulse 100. 7 A.M., one dejection through the night of same character as the others. The tumor seemed more diffused than when she was first seen. 2 P.M., temperature 103.8°, pulse 120. Three dejections since morning, one purulent, the others dark-chocolate color. At 8.30 P.M., temperature 102.5°, pulse 120. Five more dejections, dark in color, and containing some pus. Quinine and digitalis prescribed. A consultation with Dr. Porter and Dr. John Homans was held next morning at 10, when temperature 100.6°, pulse 100. Four dejections during the night. Had slept well. General appearance much improved. No operation was deemed advisable unless the intestinal opening should again become closed, as it had two days previously, and there should be a marked rise of pulse and temperature, as evidently now the abscess was draining freely into the intestines. From that time until now (December 7th), there has been steady improvement in her general condition, so that now she is sitting up daily, has a good appetite, and bowels are moved daily, though by enemata. The dejections are formed and natural in appearance. The tumor has apparently wholly disappeared, as no induration or dullness has been detected in the last three days. The pulse and temperature became normal on November 21st.

—Some of the mind curers append to their names, "M.D.," which being interpreted, means Mind Doctor.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SURGICAL SECTION.

G. H. MONKS, M.D., SECRETARY.

MEETING of Wednesday evening, December 7, 1887, the Chairman, DR. J. COLLINS WARREN, presiding.

DR. EDWARD REYNOLDS reported a

CASE OF STRICTURE OF THE RECTUM TREATED BY INCISION.¹

DR. WILLIAM D. HODGES said: I am very glad to hear Dr. Reynolds's account of the operation he has performed, and its successful result, and to be able to supplement his paper by a short account of one which I performed in October for a syphilitic stricture. I performed rectotomy, making my incision posteriorly, and cutting into the tissue between the coccyx and rectum; and although it gave considerable relief, the patient, at my direction, still uses a No. 7 bougie, to keep the stricture from contracting again. The stricture was not very resisting at the time of the operation. On introducing the finger, you came to a very decided ring, with a dilatation above. I am doubtful whether this patient might not have been successfully treated by the use of bougies alone. My experience with other strictures of the rectum which I have seen, demonstrates to my mind the fact that incision is not always a successful operation. I have seen some three or four cases of stricture, two of them malignant, the others of an inflammatory character; that is, I call them inflammatory, but the present authorities rather discountenance the fact that any stricture can exist as a purely inflammatory affair: most of them being due to venereal disease, and not to pelvic cellulitis or anything of that kind.

One case of malignant stricture is interesting from the subsequent history, and the length of time which I have had it under my observation. The patient, a woman, appeared at the Boston Dispensary some two years ago, with what proved, on examination, to be a stricture, which was passable by a No. 5 bougie of Tiemann's make. It was dilated, and she went away in June, being able to pass a No. 8. When she returned in the autumn, it was impossible to pass a No. 3. The stricture was slowly dilated, but the disease had involved so many tissues, including the uterus, that it could be felt as a large mass in the vagina. During the winter she went along fairly well, with occasional attacks of cellulitis; or, rather, she had attacks when she could not have a movement of the bowels, and was in great pain, with the temperature at 103° and 104°. At these times, I found the use of morphia, besides dulling pain, had some effect upon the stricture. After taking two or three doses of an eighth of a grain of morphia, the bowels would be relieved. I find that this has been the observation of Dr. Kelsey, who has recently reported a case which terminated fatally, where he found that the use of morphia was of great assistance, not only dulling the pain, but creating a movement of the bowels. My patient is to-day under observation, but the stricture is impassable by any rectal bougie, although it is passable with a catheter. She is unwilling to have colotomy performed, or to go to any hospital. She is un-

able to bear food, and the nourishment she takes is very slight. She is slowly dying from inanition.

Another of my cases of stricture was interesting from the number of complications and injuries from which the woman suffered. She appeared two years ago at the Dispensary for stricture. On examination, I found this condition of affairs: a stricture that was passable by a No. 5 bougie. In addition to this, a partial rupture of the perineum, a recto-vaginal fistula, a rectocele, and a double inguinal hernia. She had had syphilis. She had no great difficulty with defecation, her chief trouble being with the rectocele, which appeared at the vaginal orifice as a tumor of about the size of a cocoanut, and had to be pushed back every time she wished to have an operation.

The great trouble with dilatation is that it is extremely painful, and the pain seems to be out of proportion to the extent of the disease. Dilatation is the more conservative way of treating the disease, for if you perform rectotomy in annular strictures, the cicatrix which results may prove an evil, rather than a benefit. The amount of contraction that an incision creates is considerable. If you make an incision into the diseased tissue, you get a gaping surface, to be filled with granulations, which, in healing it, draw the whole thing together, so that you get a certain puckering at the point after it has cicatrized, which is rather detrimental than otherwise. I think that with the use of bougies you can keep the contraction properly dilated, and allow a sufficiently free passage of feces, as well as by the use of the knife.

DR. E. H. BRADFORD and DR. M. H. RICHARDSON then read papers on the

TREATMENT OF INFLAMMATIONS IN THE REGION OF THE CÆCUM.²

and DR. J. W. ELLIOT reported a

CASE OF PERFORATION OF THE VERMIFORM APPEN- DIX, CAUSING AN INTRA-PERITONEAL ABSCESS AND GENERAL ADHESIVE PERITONITIS.³

For the discussion which followed the reading of these three papers, the following propositions were formulated:

(1) For cases of chronic or subacute perityphlitis with a small tumor, or without tumor, expectant treatment.

(2) For cases of chronic or subacute perityphlitis with a large and increasing tumor, extra-peritoneal incision.

(3) For cases of acute perityphlitis with threatening symptoms and with tumor, extra-peritoneal incision.

(4) For cases of rapidly acute perityphlitis with alarming symptoms, and without appreciable tumor, exploratory incision (extra- or intra-peritoneal).

After reporting his case, DR. ELLIOT said: I wish to say a word about laparotomy in the "fourth class" of cases, as I think it has not been given its proper place by the preceding readers.

I shall speak only of the acute cases with alarming symptoms, and without appreciable tumor. In such cases the diagnosis will be more or less uncertain. The patient will always be in poor condition. These are critical cases. If you do anything, you must do the right thing, and do it quickly. Dr. Bradford advocates the extra-peritoneal exploration for these

¹ See page 93 and page 88 of the Journal.

² See page 92 of this number of the Journal.

³ See page 97 of this number of the Journal.

doubtful cases. It seems to me that these are just the cases for exploratory laparotomy. I am disposed to regard the extra-peritoneal exploration as a theoretical operation, easily done in the dissecting-room, but of no practical value in this class of cases. Neither of the gentlemen who have advocated this operation have referred to a single case where it was successful. I have never seen such a case reported. On the contrary, Dr. Bradford has just reported a case where it was not successful. Dr. Harrington will record a case where it was not successful, although he was able to feel a tumor by rectum.

In some of Dr. Richardson's experiments on the cadaver with this operation, he found that the appendix was only two inches from the incision. In my case just reported (where there was considerable distension), my incision was an inch higher than his, yet it was three inches on a straight line to the abscess. If I had gone behind the peritoneum I should have been four or five inches away, and probably could not have reached it without opening the peritoneal cavity.

If the case turns out to be, not a case of appendicitis, but some form of intestinal obstruction, the extra-peritoneal operation is worse than useless. In several of the cases referred to in my paper, there was a general purulent peritonitis, with a perforated appendix lying free in the abdominal cavity, which required excision. In such a case a laparotomy, of course, is indicated, but a previous extra-peritoneal exploration might so exhaust the patient that a subsequent laparotomy would be impossible, as in Dr. Harrington's case. This extra-peritoneal operation, then, seems to me a most excellent one where there is a tumor, because it can in this way be opened without involving the peritoneal cavity; but in these blind cases which come in the "fourth class" it is too uncertain.

Exploratory laparotomy, on the other hand, is the surest way to find the trouble, and the most intelligent way to treat it. The chief objection to laparotomy is that it occasionally involves unnecessary contamination of the peritoneum with foul pus. Now, if by exploratory laparotomy an abscess is found which could best be drained extra-peritoneally, this can still be done, and has been done under such circumstances. If the abscess is so situated that it cannot be drained without contaminating the peritoneum, then laparotomy is necessary. I think, also, that the danger from contaminating the peritoneum with pus has been greatly exaggerated. I have, myself, unavoidably or accidentally contaminated the peritoneum with fecid pus in four cases, and all have recovered as rapidly as the average of severe abdominal cases. The journals of the day are full of such cases. The high mortality of laparotomy for appendicitis seems to me to be due not so much to contamination of the peritoneum with pus as to the difficulty of making a diagnosis, and the consequent delay in operating.

Dr. CREEVER: I am sorry that I cannot add anything to the operative part of the subject, but I will allude to a few cases that happened in my own experience, without operation. Until quite recently, operations were not thought of; but I happen to have seen cases of all these classes, which well illustrate their relative mortality.

In the first class; namely, cases of chronic or sub-acute perityphlitis, with a small tumor, or without tumor, treated expectantly, I recall very distinctly two cases, one of which happened only a little while

ago. I was particularly struck by the remark that one of the gentlemen made about the symptoms in one case being like those of renal colic. I was called to a gentleman who was suffering from what I supposed to be an attack of renal colic. The pain was in the right side, directly behind the cecum, and extended into the groin and testicle. The patient had waked up in the night with vomiting and intense suffering. He was put under the influence of morphia. The next day there was improvement, and, as soon as the first symptoms of renal colic passed off, then there began to be present pain directly in front, which continued six days over the region of the cecum.

On the fourth day, I was quite positive that I felt a lump. The mildness of the symptoms, particularly the fact that the temperature and pulse were little raised, induced me to wait, and on the eighth day the patient had resolution, with action of the bowels, and recovery. I am inclined to think that this was a case of cellulitis behind the cecum, which was absorbed.

I saw, out of town, a year or two ago, a patient who had had five or six of these attacks. He had them every few months. He had a marked tuberculous history. It seemed probable that whatever trouble there was, was of a tubercular nature. It was also limited to one spot, and never passed on to a general peritonitis. Each attack lasted a week or more, and each resolved. Nothing was done. These cases belong to the first class.

In the second class, cases of chronic or subacute perityphlitis, with an increasing tumor going on very slowly, I had a case which I reported some time ago, where a large abscess was opened, and proved to be extra-peritoneal.

Of the third class of cases, with threatening symptoms and a tumor, I have had three cases with recovery. It is understood, of course, that in no one of these cases was an operation thought of. They happened a good many years ago. They all recovered after six or eight days by quieting treatment with opium.

Now we come to the last class of cases, which are the more terrible ones, cases of rapidly acute perityphlitis, without apparent tumor, and with alarming symptoms, threatening, or absolutely becoming true peritonitis. I have four cases, of which all were fatal. The history of all of them was quite exact. One was a lady who was seized suddenly in church with intense pain about the cecum, and developed, gradually, all the symptoms of general peritonitis. After various treatment by medical means—no surgery being thought of in those days—she died on the fifth day.

The next case was a young man (and I recollect all these cases very distinctly, because they were so sad to go through with at the time)—a young man who was seized with sudden colic. He went out and took a dose of salts, and then walked about for some time in the wet streets. He came to me with an undoubted lump in the right iliac fossa. That developed speedily into general peritonitis, and he died within the first week. Another case was almost similar, and the last had almost identical symptoms. All of these cases were fatal in less than a week, and all with symptoms of general peritonitis. They all apparently had a local origin, and I little doubt now that they were due to perforation, followed by general peritonitis. I can recount nine cases, of which five were fatal, and four recovered. All the severe ones died.

I think one of the earliest extra-peritoneal operations done here was by Dr. Thorndike, eight or nine years ago. At the time, it attracted considerable notice, because the operation had not been done very often. In this case the abscess was found by an incision, as if to reach the iliac artery. The patient recovered.

So far as I am enabled to express an opinion, my experience would show that nothing is more hopeless than peritonitis when it is once fairly under way, and almost any operation is justifiable which promises to afford relief; and there is nothing to do, perhaps, but laparotomy. The only point is whether the next ten years is going to show an increasing percentage of recoveries after laparotomy. So far it is very small; and we may, perhaps, infer that it is so because the operation is still new, and that we have not enough experience.

I suppose the great trouble here will always be in establishing the diagnosis—just as in cases of internal strangulation—as to whether it be due to any remediable cause, and whether it be justifiable to make an incision. There is the difficulty of diagnosis, and a reasonable hesitation about making an operation, unless you are pretty clear, because the per cent. of recoveries is so small.

In regard to the extra-peritoneal operation, I think, in the class of cases to which it is adapted, there should be no hesitation whatever. If no abscess is reached, the incision does not subject the patient to much more peril. If it is done antiseptically, it is not likely to light up any pelvic cellulitis or abscess, unless it were already present before the incision were made.

I suppose that this part of the subject would hardly embrace that form of peritonitis which is called tubercular, chronic peritonitis with effusion, and the benefit of operation in such cases. If any gentleman has cases which can throw light upon it, I would be glad to hear what the result is in such cases.

DR. JOHN HOMANS: There is a great deal I would like to say. In the first place, I would like to ask Dr. Elliot if, in doing the operation, he put in a drainage-tube after opening the abscess.

DR. ELLIOT: I did put in a long, glass drainage-tube.

DR. HOMANS: About twenty-five years ago, I remember making an autopsy in South Boston on a boy between ten and twelve years old, where a diagnosis of typhlo-enteritis had been made, and an abscess was found at the autopsy. The next case was one of Dr. Francis's in Brookline, an adult female. I made that autopsy: it was the same thing, and a foreign body was found. The diagnosis was correctly made, and then they waited for the autopsy.

I made up my mind that I would not wait for the autopsy if I ever had a case. In these cases the diagnosis was always made, and we always found the pus. The next case was a cousin of mine, who had been eating a good many raisins. He died within a week, and we found the raisin-seeds. The first time that laparotomy was done in this city for perityphlitic inflammation was two years ago. The boy was ten years old. I saw him upon the fourth day after he had had any symptoms, and I made up my mind that this boy would go through the same course as the others, and that we could find out what was the matter before he died. I knew that incision of the

peritoneum was harmless, and that if I could find an abscess, perhaps his life could be saved.

The point is to make the opening, and not to talk too much about where to make it. You discuss all these anatomical points, and in the meantime the patient dies. It reminds one of a case of hæmorrhage from a vessel in the neck. A consultation was held to decide what vessel it was. It was finally decided to be the inferior thyroid. In the meantime, the man died. The point is to interfere. This boy had no tumor that I could feel; his abdomen was distended, and there was tenderness and a feeling of resistance in the right side. I made my incision two inches above, and a little to the outside of the right anterior spine of the ilium. I came down upon healthy intestines, and I thought I had made a mistake, but, on separating these intestines, I found that the coils below were stuck together. Separating these, offensive pus, with the odor of rotten eggs, came out. The pus must have flowed in among the intestines after I opened the abscess. I put in a double drainage-tube. The boy got well, and is now well and strong, without a hernia. The tube was kept in about a fortnight. The case was reported in the JOURNAL in the early part of 1886. It took me fifteen years of ovariectomy, and twenty years of experience to know enough to do this, and to have the confidence to try it.

Of course, you don't want the pus to get into the abdominal cavity, yet Dr. Elliot will remember helping me once when the contents of the bowel must have gotten in, but it did no harm. This boy had no trouble. If I had aspirated at the point of resistance, I should have penetrated the bowel four times. If I had gone in just below the right kidney, and pushed forward through the mass of muscles, and you know how very deep it is, I should have struck the pus if I had gone far enough. That was the only other place where it seemed to me of use to make an incision. Perhaps, if I had gone in where we tie the iliac artery, I might have opened the abscess.

It seems to me that the practical point in these cases of typhlo-enteritis is to open the abscess either through the peritoneum in front by laparotomy, or lower down. I don't see how an abscess of this kind can be anything but intra-peritoneal, unless it has found its way to the surface.

DR. G. W. GAY: I have had quite a number of the first three classes of cases. I have had but one of the fourth class, in which I have seen an autopsy. This was nearly twenty years ago; the boy had characteristic symptoms of trouble with the appendix, and died within six days. At the autopsy, there were found concretions in the appendix, which was ruptured, though there was no pus in the peritoneal cavity. There was extensive general peritonitis of a very marked degree. I have often thought, since laparotomy has come up, what good would laparotomy have done in this case. There was certainly nothing to gain. The few cases of general peritonitis seen by me in which laparotomy has been done have all died.

Of course, one of the fundamental principles of surgery is to give exit to pus; but if you have a general peritonitis without pus or serum, I fail to see the good of doing an operation. In a case like Dr. Richardson's, where the symptoms were not localized at all, it seems to me it is somewhat hap-hazard surgery to operate. I don't see why you may not operate on any case of idiopathic peritonitis with just as much reason as upon

that one. A person is seized with general peritonitis, without localization of symptoms. Dr. Richardson's case proved to have been an abscess, and, of course, the operation was justifiable.

There is another side to this story of inflammation of the appendix. I have seen one case within a month, and two others have come to my knowledge within the past year, where a patient has gotten well from undoubted inflammation and perforation of the appendix. In two cases, the perforation was followed by fecal fistula. One of the cases was in my office within a month. He now has a fistula which opens once in a while and discharges a little. The symptoms were characteristic, and there is no doubt of the diagnosis at all. He was seized with pain, went to bed, and had alarming prostration in forty-eight hours. These are the cases that require prompt operation, and come in the fourth class. I have known three cases that have gotten well without operation. I do not mean to say that they would not have gotten well better and quicker with the operation than without. But they do not all die. The extra-peritoneal cases should, of course, be treated like abscesses anywhere else. You make an incision, and if you don't find pus you have done little or no harm. But when you go into the peritoneal cavity, that is a different thing. As I said before, I have never seen a case of acute peritonitis recover after laparotomy, and hence I think these cases require care, and that the peritoneal cavity is not to be opened upon slight grounds, or without due consideration and pretty marked symptoms.

Dr. Fitz: I should like to emphasize still more strongly, if possible, the point made by Dr. Homans, that the majority of these cases at the outset are of circumscribed peritonitis. As a rule the abscesses are not behind the cæcum or in the iliac fascia, but are within the peritoneal cavity, and are included between peritoneal adhesions.

The diagnosis in general presents but little difficulty, especially in the male. In the severest cases the question is essentially one of acute intestinal obstruction from causes originating in the lower right abdominal quadrant, or of perforating appendicitis. It is far preferable to risk the evacuation of pus during life than to establish the diagnosis, as has so often been the case, at the autopsy.

The use of the terms extra- and intra-peritoneal incision for the necessary operation seems likely to obscure the nature and seat of the disturbance and the operation for its relief. Since the pus, in most cases, lies within the peritoneal cavity, the operation for its evacuation demands an incision through the peritoneum. In the earliest operations it may be desirable to first dissect the peritoneum from the iliac muscle, and then to incise it somewhere in the false pelvis. If the abscess has attained a considerable size it may be preferable to cut directly through the intervening tissues, and then avoid the devious channel, with the associated tearing of the subperitoneal tissues. The terms direct and indirect laparotomy seem to indicate more clearly the nature of the operation to be performed. The danger of a direct laparotomy, even if the normal peritoneum is exposed in order to reach the pus cavity, seems often exaggerated. Dr. Elliot's case suggests that the disturbance may be comparatively slight, and Dr. Homans's experience is confirmatory.

In the classification made by Dr. Bradford there

seems to me no question as to the desirability of a laparotomy in the last three groups. In the second and third groups, especially the former, the direct method might prove preferable to the indirect laparotomy. In the fourth group direct laparotomy is likely to disclose more, as are exploratory incisions, than the indirect method of operating.

The question which seems to me most important in the future relates rather to the advisability of an operation in the first group of cases. In this class are included not a few which end fatally, with premonitory chills and jaundice, indicating a portal thrombophlebitis, or multiple abscesses of the liver. The peritoneum may be perforated and suppuration extend into the post-cæcal tissue, or into the general peritoneal cavity. The tumor is always a source of danger, and must be watched with great anxiety. If it is easily reached it seems wiser to drain it, even if it has no considerable size and there are no urgent symptoms, than to risk the possible complications which are so serious and often so sudden.

Dr. CANOT said: I think that I should agree in almost every point with the rules which Dr. Bradford and Dr. Richardson have drawn, and they cover most cases that are presented to surgeons for decision. They do not, however, it seems to me, apply fully to cases at the onset of the disease.

As has been shown, the history of these patients is of a sudden seizure with ordinarily severe pain in the right iliac region, or over the whole abdomen. Within twenty-four hours the abdomen, or that portion of it about the ileo-cæcal region may be much distended, tympanitic, and very sensitive to the touch.

If the expectant plan is pursued, and opiates are administered, we shall find that, in a large proportion of cases the pain and swelling presently show a tendency to localize themselves, the area of tenderness steadily diminishes, and a tumor is made out, which gradually grows smaller, and finally disappears. In a case like this, and such are very common, it would be manifestly improper to subject the patient to the risks of an operation, and yet at the outset the symptoms may be very serious. After a few days of improvement in a case of this sort we may have again an exacerbation of this disease, and the tenderness again becoming more considerable, and showing a tendency to spread over the abdomen, an operation becomes imperative, and we may now count upon pretty certainly finding an abscess at the bottom of the trouble.

A physician, therefore, in care of a case of appendicitis, which he is treating on the expectant plan, should watch it, as it were, with his knife in his hand, ready to interfere at once on the appearance of threatening symptoms.

Of the cases which remain localized in the region of the ileo-cæcal valve, a certain large proportion tend to get well, as I have said. The fibrinous exudation disappears. If an abscess has formed it may become reabsorbed, or it may discharge itself through the perforated appendix, or by rupture into an adherent coil of intestine. Occasionally, however, rupture takes place into the bladder, or into the peritoneal cavity.

The danger attendant upon the discharge of pus in either of these last two directions should lead us to regard with great suspicion a tumor which does not quickly disappear, and if it remains long stationary, or if it shows any tendency to increase in size, it should

be operated upon in the manner described by Dr. Bradford as extra-peritoneal.

In another class of cases the disease shows a tendency to spread over the abdomen from the first, and does not, after the first onset, subside into the right hypochondrium. Such cases are usually accompanied by profound constitutional disturbance, and should be operated upon early, within the first three or four days, or even sooner in critical cases.

I have seen several cases which would come under the fourth class made by Dr. Bradford. All but one of these were seen, unfortunately, before the surgical treatment of the disease was understood as it is now. The patients who were not operated upon all died, as did also one seen last year, in whom I opened the peritoneal cavity.

In this case, of a vigorous man, the trouble came on acutely, but its exact nature and locality was somewhat doubtful. It was the general opinion of those who saw him that he had probably fecal impaction with consequent obstruction. I finally decided to operate, and going out to his room found him having a profuse fecal discharge. This looked as if the bowels had overcome the obstruction and interference was postponed.

On the following day his symptoms, instead of being better, were worse, and I then operated, making the incision in the right linea semilunaris, which seemed to me to give the easiest access to the cæcum, and also to afford an opportunity to make out the diagnosis if an unexpected condition of things existed. The incision opened immediately upon an abscess among the loose coils of intestine. It extended so far round towards the back that I made a counter-opening just in front of the quadratus muscle, and put a drainage-tube through. The patient continued to fail, however, and died about twenty-four hours after the operation. The autopsy showed a perforated and sloughing vermiform appendix as the starting-point of his trouble.

The operation in this case was done too late. If we had operated two or three days earlier, he would have stood a fair chance of getting well; and the diffused character of the pain with no tendency to localization, should, as I now look back upon the case, have led us to a speedy operation.

The only other case that I have lately operated upon, was a chronic one, and the operation simply consisted in opening an abscess above Poupart's ligament, which had its origin undoubtedly in a perforating appendicitis.

In a third case, referred to by Professor Fitz in his interesting paper, I dilated a sinus just above Poupart's ligament to provide for the freer escape of pus from a suppurating cavity, and on the following day the appendix, perforated by several openings, was protruding about one and a half inches from the wound.

The ulcerations in this case were probably tuberculous, and the patient died of phthisis some months later.

In regard to the best place for the incision, each case must be decided for itself. If I believed a general suppurative peritonitis to have started, I should open the general peritoneal cavity, as in the case first reported. Also in a case of great doubt in which the condition could not be made out, I think one could act more intelligently through an anterior abdominal incision than by groping more or less blindly behind

the peritoneum. In other cases I should prefer the extra-peritoneal incision.

As to the danger of evacuating pus through the abdominal cavity, it is, I think, less than many suppose. About a year ago in a case of pyo-salpinx in which the Fallopian tube was so firmly bound down that it did not seem possible to strip it out, I opened the abscess and introduced a drainage-tube which was brought out at the lower part of the abdominal incision. In this case, although the tube lay through loose intestines there was no infection of the general peritoneal cavity.

DR. O. W. DOE reported a

CASE OF PERITYPHLITIC ABSCESS, BURSTING THROUGH INTO THE INTESTINE. RECOVERY.⁴

DR. WHITTIER said: I don't know that I can add anything to the extremely interesting discussion that has taken place, except by briefly citing a case that is in Dr. Warren's wards now. A man of good habits, twenty-eight years of age, had been taken with pain in his bowels, and as he had chills and well-marked indication of heat, pus formation was considered to be complete. But as the symptoms were not particularly urgent, and there was no evidence of extension and formation of general peritonitis, it was decided to temporize. For ten days the improvement was progressive, and for three days longer the patient remained quiet, when suddenly pain developed in the right chest and right hypochondrium.

Physical examination showed that the lower right chest was entirely flat. The respiratory murmur was absent, and there was evidence of compression of the lung on that side. Aspiration was done, and forty-eight ounces of extremely offensive pus was removed. He came to the hospital, and I noticed that the symptoms became more urgent. Dr. Warren was asked if he would see the patient with reference to operation. Operation was done, and two quarts of extremely offensive pus were removed from the cavity. The diagnosis in this case had been typhlitis and peri-typhlitis, with probable perforation of the appendix, formation of hepatic abscess dependent on the pus formation low down, a perforation of the diaphragm, with discharge of the hepatic abscess into the pleural cavity. It seems to me to illustrate the dangers of delay in these cases.

DR. HARRINGTON said: I have seen two cases that might be classed under the fourth heading. The case to which Dr. Elliot refers, was one which has been described by Dr. Vickery. The diagnosis had been made upon the second or third day after excruciating pain. There was no tumor but great distension. On the seventh day a small hard mass could be felt by the rectum.

The patient's condition was then bad. It grew worse for two days, when I saw the patient. Under ether I could feel the mass. It could be barely touched by the finger. It seemed to point to a large collection higher up. The symptoms were so severe that it seemed to me that there must have been a large collection of pus near the seat of the appendix. There was very great distension, and that was one of the reasons why I hesitated about making an incision. I thought that by making an extra-peritoneal incision I should discover this mass lower down. An incision was made on the outer third of the crest of the ilium, following down along Poupart's ligament.

⁴ See page 95 of the Journal.

After pushing away the peritoneum for a considerable distance, I reached no tumor, and I found nothing until the hand was well down in the true pelvis. At that time I was certainly four inches downward from the incision. Then with Dr. Vickery's finger in the rectum, this small mass could be felt between our two fingers. Its size was about that of a walnut. A trocar was inserted, but no pus was found. The operation had required quite an amount of time. The patient's condition then, as a result of the operation, was very poor, and it did not seem wise to go on. The pressure against the peritoneal wall, as I pushed my hand was very great. I did not think it right to make any further attempt. I think the patient would have died on the table.

On the following day the patient was in a collapsed condition. The next day he was improving, and gradually grew better. Three weeks later the patient was transferred to the hospital, and while there, this tumor which had been felt in the rectum grew larger, and finally broke through into the rectum. There was a discharge of pus, and the patient gradually improved and is now well.

The second case was one in which no diagnosis had been made. Dr. Whittier saw this case, and made, I think, a diagnosis of general peritonitis, from some uncertain cause the symptoms pointed to some trouble in the region of the liver. The friends did not act upon the advice of Dr. Whittier, and when I saw the case the following day, the patient was almost moribund, with a pulse of 130.

Nothing could be felt either by rectum or by abdominal palpation, but it seemed so important to do something that I made a central incision, and on putting my hand into the right iliac fossa I found quite an amount of pus. The patient came out of the ether and expressed herself as relieved, but died in four or five hours.

DR. E. W. CUSHING: I have had four cases of the fourth class, which have been reported at different times. The last I operated upon, a little boy, died.

In regard to postponing the operation. The fall of temperature is absolutely fallacious, it seems to me. A person's temperature may come down nearly to normal, and yet the process go on. There was one case, in which Dr. Cheever may remember making the autopsy with me, where the boy's temperature came very nearly to normal, and he was walking about within an hour of the time he died. In another case, that Dr. Ellis saw with me, he did not think that the case was pressing, and he died within three hours.

There was a woman brought into the hospital a little while ago with symptoms of peritonitis. She lived along about a fortnight, and used to sit up. One day she lay down and died within twenty minutes. The whole abdomen was filled with pockets of pus in among the intestines. It seems to me that when the diagnosis is made it is a question whether a temporary amelioration of the symptoms should lead us to delay when on other grounds it seems necessary to operate.

DR. WHITTIER: I would like to say in reference to the case of Dr. Harrington, that I saw the ease on the tenth day, and urged that Dr. Harrington be immediately sent for. The delay which he speaks of was occasioned by the delay in acquiring the consent of the patient's friends. The case I cited was seen after the symptoms of typhilitis had almost entirely

disappeared, and at that time the only question was what the pleural accumulation consisted of. A few days afterward the attending physician aspirated and found forty-eight ounces of offensive pus. The second operation was done in the hospital by Dr. Warren.

DR. KINGMAN: I would refer very briefly to a case coming under my observation within a few weeks, leaving the fuller report to the gentleman who subsequently performed the operation. The patient was taken sick on Tuesday, was admitted to the St. Elizabeth's Hospital on Friday afternoon, was seen by several gentlemen in consultation on Saturday, and was operated upon by another member of the staff on Sunday morning, the patient being at that time transferred to his care.

The symptoms from the time of admission to the moment of operation had shown progressive amelioration, the temperature on Sunday morning being only 100° and the pulse 90, and yet the presence of the tumor indicated the necessity for operation. Death occurred in thirteen hours, of shock, and the autopsy, performed the following day, revealed the following interesting and instructive condition of affairs. There existed over the appendix a large cavity there being no distinct walls, but merely a gluing of intestines and omentum, the adhesions easily breaking down before the slightest pressure of the finger. The omentum was thickened to nearly three-fourths of an inch, and was gangrenous over a space as large as the palm of the hand. The appendix was sloughing and perforated by ulceration.

This case not only shows the rapid course of the disease and the danger of delay, but it illustrates the uncertainty of the symptoms as an indication of the severity and progress of the disease, and as a guide in deciding with regard to operation.

DR. WARREN said: I will briefly relate one experience, and that is a case interesting from the point of view of differential diagnosis. The case had all the symptoms of perityphilitis; was seen in consultation with Dr. Fitz, and was operated upon by me. The pus was drained, the patient lived for some time, and we thought we had a case of abscess of this sort. At the autopsy it turned out to be a circumscribed peritonitis, resulting from abscess of the liver. The lobe of the liver was drawn down into that neighborhood, and apparently became adherent. There had been a chronic dysentery, which had evidently given cause for the hepatic abscess. Therefore there may be symptoms of this disease simulated by other diseases.

— Mme. Boucicault's legacy of \$4,000,000, to which we referred in a previous number of the JOURNAL, for the foundation of a hospital for the poor of Paris, is imperilled, we learn, through a condition which she attached to it namely, that the nursing should be done by the Sisters of Mercy. The municipal council of Paris has voted to substitute trained nurses for the sisters, in the hospitals under their control, which action brings them squarely in opposition to Mme. Boucicault's conditions. It is to be hoped that in this case they will not allow consistency, however great a jewel, to work the default of this great bequest. Public sentiment in such a case would doubtless turn against lay-nursing in general through exasperation at the expensive persistency of its support.

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SURGICAL INTERFERENCE IN PERITYPHLITIS.

THE subject of operative treatment of perityphlitis occupies a large portion of this number of the JOURNAL, as it has occupied the thoughts of many of its readers for the past few years. The profession is, to-day, on the alert to recognize cases of suppuration in the region of the appendix cæci, and is agreed upon the necessity of evacuating pus, when formed in that vicinity.

But the more attentive study to which these cases have been subjected has brought into prominence a series of cases in which suppuration fails to take place, or, at least, in which spontaneous recovery occurs, and these cases occur with sufficient frequency to render it impossible to adopt the simple rule of operating in every case. It is evidently an exceedingly delicate question to decide in many cases. An incision external to the peritoneum cannot be a very serious affair; but yet it must necessarily add something to the risk in delicate subjects, and no one would willingly add even a trifling risk to such cases, if it is possible to recognize the cases which will recover without suppuration.

A still further element of uncertainty is also added by the demonstration that certain cases exist in which the rupture of the appendix must take place into the peritoneal cavity, and can only be reached by a peritoneal incision.

The papers in to-day's JOURNAL present most clearly the difficulties in the way of deciding upon the proper course of treatment. No class of cases can give the attendant greater cause of anxiety, or call for more careful watching, than expectancy may be superseded at the critical moment by active interference. The proposition to always attack the deposit of pus by a laparotomy is somewhat startling to more conservative individuals. It is, perhaps, a fair enough rule for men who have become habituated to intra-peritoneal manipulations. In the hands of practiced ovariotomists it would undoubtedly yield good results, but the individual whose surgical practice is

limited cannot open the peritoneum with equal assurance of a fortunate result.

The differing anatomical conditions, which cannot be known beforehand, indicate different modes of procedure in the desperate cases; and for the present, at least, the conclusions in the paper of Dr. M. H. Richardson will commend themselves to the careful practitioner.

ON THE RISE AND DEVELOPMENT OF EPI-DEMICS.

IN 1841 Sir James Y. Simpson, in his "Notes on Leprosy in the British Isles," spoke of the analogy between the species of infectious diseases and the species of animals and plants, and made the assertion that as the individual species of plants and animals inhabiting the various regions of the earth have again and again changed, "so there are strong grounds for believing that in regard to our own individual species alone, the diseases to which mankind are subject have already undergone, in some respects, marked changes within the historic era of medicine.

A writer in a recent number of the *London Quarterly Review* takes up the subject from this standpoint, and argues that the rise, development and extinction of successive new types of widespread or national sickness "has been a more every day and noticeable event than the origin of species in the animal and vegetable kingdom."

The English sweating sickness (*febris miliaris*) came and went between the years 1485 and 1551. It broke out suddenly in August, 1485, among the troops of the Earl of Richmond (afterwards Henry VIII), within four weeks was raging in London, and had overspread the entire country. It struck down hundreds as by a blow. The onset was usually in the night, with a chill followed by a hot fit. Those stricken labored under oppression at the heart and in the breathing, sickness of the stomach and headache. In the course of a few hours the skin becomes turgid, and a profuse sweating began, to subside gradually after twenty-four or forty-eight hours, or to end in total collapse and death in a state of coma. Epidemics were very frequent for the space of three-quarters of a century, when it disappeared from England never to revive.

This sweating sickness bore such a marked resemblance to the "suetie miliare" of Picardy that there can hardly be a question that it is essentially the same species of disease, although the modern form has hardly ever been extensively disastrous, but is rather endemic. The *Quarterly Reviewer* puts together some striking facts which, in his estimation, go to connect the English sweat with the Picardy sweat. The English sweating sickness came in the train of the Earl of Richmond's foreign levies, with which he defeated Richard III on Bosworth field. These French levies, called by Shakespeare, in his Richard III, "the scum of Bretagne, and base lackey peasants —"

"Whom their o'er-cloyed country vomits forth
To desperate ventures and assured destruction —"

are traced by the reviewer to their homes in the very region where the "*suetie des Picards*" showed itself as an indigenous disease more than two hundred years later. His reasoning, in brief, is as follows: Conditions of living that engendered an endemic disease about the year 1718 had been going on long before. The peasants and vagabonds of that region, when taken to England in 1845, either under the sudden change of condition developed this disease in their own bodies, or, more probably, the mere effluvia or exuviae of their bodies caused the disease in others. If the disease was merely potential in them at that time, it may be said to have been at the same date merely potential also in their homes on their native soil. That which came to sudden development in 1485 by contact with another nationality came also to maturation in 1718, after two hundred years of slow fermenting amidst the original conditions.

The history of Asiatic cholera is traced by the writer, and an analogy between it and the "sweating sickness" is suggested. Cholera broke out in the lower valley of the Ganges in the spring of 1817, and extended throughout lower Bengal. In 1818 it spread over the greater part of India, and henceforth the disease figures regularly among the indigenous maladies of the country. More particularly the lower basins of the Ganges and Brahmapootra have come to be looked upon as the "endemic area" of cholera. The disease now appears regularly every season, as if it were a fruit of the earth, and, although it is more destructive some years than others, the annual mortality from it in Lower Bengal is always considerable.

The reviewer very ingeniously traces the rise and evolution of this dire disease to excrementitious pollutions of the soil, "due, first of all, to the personal habits of the villagers, which are the cause of that *odor stercoreus* that we read of around a Bengali village. . . . There is also a certain peculiar decomposition of human exuviae in the soil, caused by the porous character of the surface layer of alluvium, or of laterite; the presence of sub-soil water close to the surface all over Lower Bengal, and the flooding of the ground during the rainy months of June, July, August and September, and the drying of it at other seasons. The alternating seasons of rain and drought cause regular movements of the sub-soil water up and down, movements which are known to favor decomposition of the organic matters in the soil, and to favor their exhalation into the air."

In reply to the questions: "If these are the old characteristics of soil, season, and natural habits that have been present in Bengal for generations, why should cholera have apparently become epidemic there only within the last seventy years?" "How is it the excrementitious fouling of a vast tract of river basin and delta has at length made inveterate what had previously been intermittent, and has made diffusive what had never before been heard of beyond India?" the writer advances the supposition of a "cumulative action," or of "gradual aggravation, or, in a figure,

of provocation beyond the limit of endurance." "Whatever," he says, "may have brought about the crisis in the early part of this century, it is worth keeping in mind that the number of persons supported on the soil of Lower Bengal may be taken with good reason to have increased greatly within the period of English rule; that the increase has been in the original village communities, and not in large towns, and that the heart of the endemic area of cholera is remarkable among the provinces of the globe for the enormous rural population that it carries, a population that is, in many places, seven hundred to the square mile, and in some places nearly a thousand."

In the same manner the writer accounts for yellow fever, which is "not a form of mere climatic or malarial remittent fever," but "whose affinities are really with typhus fever." "It is typhus with a very remarkable difference, a typhus of the soil and mud of certain harbors of the new world." He sets aside the "rotten wood hypothesis," the "bilge water hypothesis," as untenable, to adopt the brilliant generalization of Audonard, which connects yellow fever with the over-sea traffic in African negroes. "The concurrence of testimony from all sides—from the clinical type, or affinities of the disease, from the geography and the history, from ethnology, and from ethics—connects yellow fever with the African slave trade in as startling a manner as if some hand had written it for us on the wall."

Another endemic disease, pellagra, which is very prevalent in Northern Italy, certain provinces of Spain, etc., and limited to the poor peasantry, is regarded as the slow, insidious and cumulative effect of a staple diet of bad maize, of bread and porridge made from the poorer sorts of Indian corn grown in soils where it will not ripen perfectly, gathered in a wet state, badly husbanded, apt to decompose in the grain or flour, and still more apt to spoil in the ill-baked loaves of bread."

Other diseases, endemic and epidemic, are considered in the same spirit, and an attempt is made to show their dependence on complicated local causes and conditions: leprosy, beriberi, black death, famine fever, typhoid malaria, goitre, the Peruvian wart. The problems of disease species, of their origin and reproduction, the reviewer says, are not so simple as many people seem to imagine. "Before we come to the germ we must settle the individual, unless, indeed, we summarily make an end of an old difficulty and decide once for all that the egg does really come before the hen. The medical profession has not only plenty of work before it of the ordinary biological or physiological kind, it has also philosophical problems assigned to it which are unique in their difficulty. Should it ever cease to deserve the good name of a liberal and learned profession it will not be because the subject matter of its calling does not demand the exercise of the highest qualities."

This reasoning is evidently not wholly sanctioned by the best recent biological thought and study.

BOVINE DISEASE AND SCARLET FEVER.

It will be remembered¹ that two years ago an epidemic of scarlet fever prevailed in Northwest London which was tracked by the medical authorities to a milk farm at Hendon. The disease was shown to prevail almost exclusively among families that had obtained their milk-supply from this farm. On investigation it was found that some of the cows at this locality were suffering from an infectious disease of the teats and udder. Dr. Klein of the Brown Institution, Dr. Cameron the health officer of Hendon and Mr. Power representing the Local Government Board, gave careful attention to the matter, and with due caution expressed their opinion that the bovine disease was essentially identical with scarlet fever. Dr. Klein, moreover, found a micrococcus which he declared to be common to both affections. He also made many inoculation experiments on calves with the blood of scarlet-fever patients, and with the products of the culture of the "micrococcus scarlatinae," and succeeded in inducing a disease which bore a marked resemblance to the Hendon cow disease.

Professor Crookshank, of Edinburg, has since reinvestigated the whole matter. His paper appears in the *Lancet*. His investigations do not bear out the conclusions previously formulated by Drs. Klein and Cameron. He has found the micrococcus described by Dr. Klein, but he believes it to be a septic micro-organism. As for the nature of the disease prevailing among cattle at Hendon and surrounding districts, it is, he finds reason to believe, simply the true *Jennerian cow-pox*, and in no sense a scarlatinous affection. This conclusion, if accepted, leaves the origin of the north-west end epidemic, and its relation to the milk-supply, as far from a solution as ever.

CAPITAL PUNISHMENT BY ELECTRICITY.

THE Commission appointed last winter, consisting of Elbridge T. Gerry, Matthew Hale, and Dr. Alfred P. Southwick, to investigate and report upon the most humane and practical method of capital punishment, have just presented the results of their labors to the New York Legislature in the form of a pamphlet of about one hundred pages.

A circular was first prepared soliciting views upon the present mode of punishment, and suggestions in regard to some more humane method. Suggestions were also invited regarding the disposition of the body of the person executed, with a view to increasing the deterrent effect of capital punishment. The circular was widely distributed, especially among judges, district attorneys, sheriffs, and physicians; and, after a careful consideration of the two hundred replies which were received, and much outside inquiry and study, the Commission decided in favor of electricity. They suggest that the criminal to be executed be placed in

a chair having metallic plates at the head and foot rests connected with electrodes, and that all executions shall take place at one of the three State prisons located at Sing Sing, Auburn, and Dannemora.

Various changes are recommended in the present laws in regard to criminals condemned to death.

The report provides that, in regard to the infliction of the punishment of death, it must in every case be inflicted by causing to pass through the body of the convict a current of electricity of sufficient intensity to cause death, and the application of the current must be continued until the convict is dead. The execution must take place within the walls of the State prison designated in the warrant, or within the yard or inclosure adjoining. It is the duty of the warden to be present at the execution, and to invite the presence of a Justice of the Supreme Court, the District Attorney, and Sheriff of the county in which the conviction was had, together with two physicians and twelve reputable citizens. Besides one, or, at most, two clergymen, and seven assistants or deputy sheriffs, no persons other than those mentioned shall be permitted to be present.

Immediately after the execution, a post-mortem examination of the body of the convict shall be made by the physicians present at the execution, and their report in writing, stating the nature of the examination made by them, shall be annexed to the certificate, signed by all the persons witnessing the execution, that the sentence was duly carried into effect in accordance with the requirements of the law.

After the post-mortem examination, the body shall be delivered by the warden for the purposes of dissection to some public hospital or incorporated medical college within the State; or the body may be interred in the graveyard or cemetery attached to the prison, with a sufficient quantity of quicklime to promptly consume it. In no case shall the remains be delivered to any relative or friend; and no account of the details of any such execution, beyond the statement of the fact that the convict was, on the day in question, duly executed according to law at the prison, shall be published in any newspaper.

THE OBSTETRICAL SOCIETY OF BOSTON IN THE WAR OF THE REBELLION.

THE Obstetrical Society of Boston has recently printed for private distribution a sketch of the services of its members in the War of the Rebellion. The paper was prepared by Dr. George H. Lyman, one of the founders of the Society, and who was himself in active service from April, 1861, to November, 1865.

It would not seem that a society of obstetricians would be likely to engage in military service, professionally or otherwise; yet the record shows that with a membership limited to thirty, this Society furnished fourteen commissioned officers; and eleven others rendered much gratuitous service as inspectors for the

¹ Journal, Vol. CXIV, p. 601, Vol. CXV, p. 116, Vol. CXVI, p. 613.

Sanitary Commission, as contract surgeons, and as examiners of recruits. The Society was organized only four months before the war, and some were not members at the time of their service, but joined the Society subsequently. But of the entire membership, which has numbered only sixty up to the present day, twenty-five is a large proportion to have given their services to their country.

Of the fourteen commissioned officers, ten served on the medical staff: seven in the army, three in the navy. The other four served in the arm of the service which made wounds, not dressed them. One was a captain in the line, was wounded in the battle of the Wilderness and suffered the horrors of Libby Prison. One enlisting as private reached the rank of captain and served as brigade adjutant. Another, while yet a medical student, enlisted as a private, rose to the rank of lieutenant-colonel, and saw much active service. One original member of the Society, after a few months of medical service, "tired of curing wounds and preferring to make them," secured a captain's commission in the line, rose to the rank of lieutenant-colonel, and fell mortally wounded at the head of his command after a desperate cavalry charge.

We are ever glad to honor patriotic service on the part of any one; but it gives us a peculiar pleasure to see placed in enduring form the simple records of the devotion of the medical profession — whether it be to their country in time of need or to suffering humanity in the ordinary duties of daily life.

MEDICAL NOTES.

— Dr. Auvard, of Paris, has succeeded to the editorship of the *Archives de Tocologie*, which was founded in 1874 by Professor Depaul.

— We learn from a contemporary that a movement is on foot looking to the erection of a new crematory, in or near New York, wherein bodies are to be incinerated by electricity. The scheme is regarded as a feasible one, and, it is believed, will do much towards removing the prejudice existing against cremation by the elaborate method practised in Pennsylvania, Long Island, and elsewhere. The electrical crematory is the invention of a Sicilian; the heat is generated by a dynamo of a pattern similar to that used in the incandescent-light system, and succeeds in evaporating, as it were, the bodies, till nothing remains.

— Prince Chun, the father of the reigning emperor of China, who was reported as dead by the press cable despatches some weeks ago, is not dead, but is said to be merely suffering from a passing indisposition, due to a treatment by powdered otter's liver, to which he had been subjected by his native medical attendant. An English physician of the name of Dr. Manson has now been summoned from Hong Kong to take charge of the case of his imperial highness, this being the first occasion in which a foreign doctor has ever attended a member of the imperial family of China.

— M. Carnot, President of the French Republic, on the last day of the old year, made a round of inspection of the various Parisian hospitals, in the course of which he decorated with a knight's ribbon Mlle. Nicolle, the school mistress at the Salpêtrière, who is now in her thirty-sixth year of service, and a Sister of Charity in the military hospital of Val-de-Grâce.

— An industrious statistician has recently contributed to a medical journal at Lille, the results of an analysis of one thousand labors, with the precise hour at which delivery took place. He reports, says the *British Medical Journal*, that forty-five per cent. of the labors terminated between 8 A.M. and 8 P.M., and fifty-six per cent. between 8 P.M. and 8 A.M. Pushing the inquiry a step further, he found that twenty-three per cent. terminated between 6 A.M. and midday; twenty-two per cent. between midday and 6 P.M.; twenty-seven per cent. between 6 P.M. and midnight, and 54.1 per cent. during the night — that is to say, between midnight and 6 A.M. These figures only apply to normal labors, in which nothing interfered with the physiological course, so that they go far to confirm the popular notion which admits the greatest frequency of delivery at night, "conception generally taking place at about that time."

— Lord Grimthorpe, in a recent somewhat florid communication to the *London Times*, sets the number of homœopathic practitioners in Great Britain at 10,000. That a "round number" does not in this case any more than proverbially express mathematical correctness is shown by the following figures, quoted from the *British Medical Journal* in answer to a correspondent who wishes to know if the sect is increasing: The *British Homœopathic Medical and Pharmaceutical Directory*, for 1875 (London: Homœopathic Publishing Company), contains in a "List of Qualified Physicians and Surgeons Practicing Homœopathy in England, Scotland, and Ireland," 269 names, and in a supplementary "List of Practitioners Holding Degrees from Foreign Universities and Colleges whose Diplomas cannot be Registered under the Medical Acts," 9 names, making a total of 278 names. The *British Homœopathic Medical Directory*, for the year 1887 (editors and publishers, Thompson & Capper, homœopathic chemists, Liverpool, etc.), contains in a "List of Qualified Physicians and Surgeons Practicing Homœopathy in England, Scotland, and Ireland," 253 names; there is no supplementary list. The preface contains the following paragraph: "Many inquiries having been received relative to the omission of well-known names, it is necessary to state that in almost all cases such names have been omitted at the individual's own request."

— Dr. F. E. Hayward, writing in the *British Medical Journal*, December 24, 1887, says that sodium fluosilicate, the new antiseptic which has recently been coming into use, promises to prove an equally effective and much safer agent than corrosive sublimate in midwifery practice. It is but slightly soluble in water, only to the extent of about two-thirds

per cent. at 60° F., that is, a pint of water will dissolve about fifty grains. It should be used in saturated solution. A few powders of fifty grains each will form but a trifling addition to the weight of the midwifery bag.

—The *London Medical Gazette*, commenting on the paper on the transactions of the Epidemiological Society of London, by Inspector-General Lawson, on "Outbreaks of cholera in ships carrying coolies from Calcutta, and in other ships with troops," in which that gentleman claims that the disease has originated at sea from "pandemic waves," points out that the ships visited by such "waves" are all southward bound, and come from localities that have been recently infected, while no such waves have in a single instance struck vessels, even though in just the same latitudes. *northward* bound from a port in which cholera did not prevail. It also suggests that the pandemic waves find it hard to catch steamers, as in the two cases mentioned the steamers (from cholera infected ports) had had time to sail much farther on their voyage than the sailing vessels before the disease overtook them. The *Gazette* epigrammatically sums up its review by remarking that "in this instance it is not the cholera but the Inspector-General that is at sea."

—Dr. Morrison, in the medical reports of the Inspector-General of Customs in China, March, 1887, says: "February 12th, a small farmer, named Ma, was brought in to me from T'ien-chia-t'un, a village about seventeen miles distant. On examination, found right eye entirely enucleated and the left partially so and utterly useless, so far as hopes of seeing were concerned. He informed me that three days previously, on the road, he had been set upon by seven or eight men, who tied his hands and feet together, and, with a copper scoop, proceeded to gouge out his eyes. He knew they had only been partially successful with one, and therefore his friends had brought him to see if I could restore it to its natural condition. His offence was that his father owed a debt of forty taels, which, at the Chinese New Year, when accounts are settled, he had failed to pay." The reporter adds that he is informed that this practice is not uncommon, and that about the same time another case occurred in the neighborhood, where the unfortunate man died from the effects of the wounds. The matter is engaging the attention of the Chinese authorities.

BOSTON AND NEW ENGLAND.

—Dr. S. H. Durgin, Chairman of the Boston Board of Health, delivered a lecture, last week, on "Hygiene" at the Young Men's Christian Union.

—The new hospital buildings in connection with the State institution at Tewksbury, Mass., which have just been completed, *within the appropriation*, stand upon the west side of the old quadrangle, and consist of two buildings, each 107 feet, 10 inches, by 36 feet, 4 inches, placed in line north and south, 50 feet apart, and connected by a glazed corridor or suu-room.

The buildings are divided into nineteen wards, varying in size from a small, single room 6 feet, 8 inches, by 12 feet, to wards 31 feet, 6 inches, by 32 feet, 6 inches, containing fourteen beds, these last being located at the extreme ends of the buildings. Great satisfaction is experienced in the working of the special apparatus for heating and ventilating the wards. The buildings were constructed under the special charge of Dr. C. I. Fisher, the architects being Messrs. Hartwell and Richardson.

NEW YORK.

—The quarterly meeting of the Westchester Medical Society was held at the Murray Hill Hotel, New York, on the 17th of January, and during the course of the proceedings, Dr. E. H. Brush, of Mount Vernon, gave a *résumé* of a recent study of bovine tuberculosis, the results of which led him to strongly oppose the inbreeding of cattle.

—The First District Dental Society of the State of New York, held its nineteenth annual meeting in the Masonic Temple on the 17th and 18th of January. Among the more important papers read was "A Contribution to the Knowledge of Tumors of the Jaw," which was the joint production of Dr. Frank Abbott, of the dental profession, and Dr. C. Heitzmann, the well-known pathologist.

—The annual meeting of the Hospital Saturday and Sunday Association was held at St. Luke's Hospital, January 16th, when the same officers were re-elected. It was announced that notwithstanding the fact that the Presbyterian Hospital had withdrawn from the Association, the receipts reported to date were even larger than those reported at the same time after the collection last year. On January 18th, the fund amounted to \$45,725. At a meeting of the New York Presbytery, held January 10th, it was given out that since the 23d of December, the Presbyterian Hospital had received \$31,000 in subscriptions.

—At the annual meeting of the New York Post-Graduate Medical School and Hospital, held January 17th, the following officers were elected: President, Dr. D. B. St. John Roosa; vice-president, Dr. William A. Hammond; treasurer, Dr. W. O. Moore; director, Dr. George H. Fox. The affairs of the institution were reported to be in a flourishing condition and the number of matriculants to be larger than ever before.

—The New York State Academy of Veterinary Service and Comparative Pathology, held its annual meeting and dinner January 19th, when Dr. J. M. Heard was elected president, and Drs. E. S. Breder and H. E. Earl, vice-presidents.

—The Board of Pharmacy, of which Dr. Cyrus Edson is president, has of late been doing good work by its vigorous action in securing the enforcement of the law forbidding the sale of drugs and poisons by persons not properly qualified to do so, and a number of arrests have been made on the charge of its violation.

— At the annual meeting of the New York County Medical Association, held January 16th, the following officers were elected for the ensuing year: President, Dr. J. R. MacGregor; Vice-President, Dr. C. S. Wood; Recording Secretary, Dr. Frank Grauer; Corresponding and Statistical Secretary, Dr. J. W. Small; Treasurer, Dr. C. Ellery Denison; Member of the Executive Committee, Dr. C. A. Leale.

Miscellaneous.

COMPARATIVE STATEMENT OF MORTALITY IN BOSTON IN 1886-87.

The Board of Health has compiled and published an interesting comparative statement of the number of deaths and their causes in 1886 and 1887. The following features of the statement are herewith given:

	1887.	1886.
Total number of deaths from all causes	10,973	9,268
Population	109,000	100,000
Annual death-rate per 1000 inhabitants	25.18	23.17
Total from zymotic diseases	1,993	1,644
Percentage of deaths from zymotic diseases to total mortality	19.7	17.73
Total deaths of children under one year	2,512	2,110
Total deaths of children under five years	3,462	3,186
Percentage of deaths under five years to a total mortality	36.3	34.37
Percentage of deaths from diarrhoeal diseases to total mortality	7.2	7.60
Diphtheria	246	329
Measles	119	36
Scarlatina	135	81
Small-pox	—	—
Typhoid fever	183	135
Pneumonia	795	778
Violent deaths	412	371

TETANUS FROM USE OF THE STOMACH-TUBE.

THE *New Yorker Med. Presse*, December, 1887, brings to us, through several intermediate channels, the report of an interesting case of death following the use of an œsophageal or stomach-tube. The patient was a man, forty-eight years old, who had been treated seven years before for stricture of the pylorus. At the time when he came again under treatment, he was suffering with flatulence, pain, progressive weakness, and frothy vomit. His stomach was found to be dilated. It was decided to wash out his stomach, and a tube was passed down his œsophagus. Hardly was this done, when he became faint, and the instrument had to be removed. Two hours afterward his jaws became stiff, he could not open his mouth, his arms became rigid, pronated and flexed, and his thumbs were flexed in his palms. He retained his consciousness; but was in a profuse sweat. Gradually all the muscles of his limbs and trunk became rigid; his temperature rose to 112°, and he died cyanosed.

At the autopsy the diagnosis of stricture of the pylorus and dilatation of the stomach was confirmed, and no lesion of the mucous membrane of the œsophagus could be found.

The presumption is that this was a case of tetanus, caused by the mere impression of the operation. It is analogous to a few other recorded cases in which tetanus occurred, for which there seems to be no explanation, except that it was largely due to a mental impression. A number of these cases are precisely

like certain cases of so called hydrophobia, in which no material injury, no infection can be supposed to have given rise to the symptoms, and in which the phenomena are only explicable by the assumption that they were due to a pure psychosis.— *The Medical and Surgical Reporter*.

Correspondence.

DR. NORMAN BRIDGE AND THE COOK COUNTY HOSPITAL.

CHICAGO, January 10, 1888.

MR. EDITOR, — The *Journal* of the 5th inst. is in error in saying that I had "refused to treat as charity patients persons able to pay, but admitted to the (Cook County) hospital under political favoritism, and for this refusal was severely criticised by the *Chicago Tribune*." The hospital incident consisted simply in my sending a private patient to the hospital to board as a pay patient while I made a surgical operation for her, for which I received the usual fee. This was a convenience for the patient, and was in pursuance of a regulation of the hospital long in vogue. The personal malice of the *Tribune*, growing out of other and chiefly political considerations, led that paper to charge — among the manifold wickedness it has attributed to me — that I had violated a rule that applies solely to the usual hospital or charity patients, that is, that doctors should serve without fee or reward. This rule was never violated to the breadth of a hair by myself, or by any other attendant so far as I know.

Very respectfully,
NORMAN BRIDGE, M.D.

SPEEDY RECOVERIES AFTER CHILD-BIRTH.

FORT GIBSON, INDIAN TER., January 16, 1888.

MR. EDITOR, — In the discussion of Dr. F. W. Draper's paper on the "Obstetrical and Legal Relations of Infanticide," by the Obstetrical Society of Boston (*Medical and Surgical Journal*, Vol. CXVIII, No. 1, p. 14). Dr. Farlow, in "illustration of the apparent impunity with which women often resume their daily affairs soon after labor," mentions the case of a washer-woman, who, between wash-days, gave birth to twins, and then resumed her work — he does not say how soon after the first wash-day the twins were born.

In my own experience there are two cases — examples of many others — which illustrate this point with much exactness: While on duty at Fort Bennett, Dakota, some three years ago, the Sergeant of Indian Scouts (an educated half-breed) came after me to attend one of his children. I went to the scout's camp, and found a child, about fifteen hours old, in convulsions. The mother was sitting up, fully dressed, and had evidently been attending to her household duties. After attending to the child, I asked the Sergeant if he considered it safe to allow his wife (also an educated half-breed) to be up and about so soon after delivery. He looked at me in surprise, laughed, and said she always got up an hour or so after the baby was born; in point of fact, she had done so after each of her three preceding labors — "all her people did so." He said, on my questioning him, that after the birth of the child, she would lie in bed long enough for the after-birth to come away, and to rest a little, and would then get up and go about as though nothing had happened. The old women of the camp do all the obstetric practice; men are not permitted in or about the hut or tent at the time. This family belonged to the *Sans Arc* band of the Teton Sioux.

One morning, while at the Agency (close to the garrison), I met a young squaw with an evidently very recent accouchement in her arms — indeed, so recent, that the vernix caseosa was still on it. I asked her how old that baby

was? She answered, "one sleep," meaning that the child was born some time late in the afternoon of the previous day. The baby's face, notwithstanding the vernix caseosa, was gorgeously decorated with red and yellow paint, of which design the mother seemed quite as proud as she did of the youngster. This young woman was walking around, the baby not over twenty hours old, as strongly as though the confinement (?) had taken place a month before.

One of the officers at that post, too, told me of another instance: Some years before, just after the Sioux surrendered, a hunting party (of Indians) obtained permission from the agent to go out and hunt buffalo. This officer was detailed to go in charge, and a middle-aged squaw was detailed to pack and pitch his tepee. He said he noticed she was very large when they started, and "one day, about a week after starting, she appeared with a baby, which, she said, had been born some few hours

previously" (during the night). Her enlargement had disappeared. Lieutenant P. informs me that she struck and packed his tepee, and rode pony-back, that day's march—some forty miles or so.

It is very generally thought that the Indian women do not suffer pain in labor. This, I know, is erroneous, both from the testimony of "squaw-men" (white men married to Indian women), and from native works of art depicting their women in this interesting condition. Without exception, the pictures had the zig-zag line running down from the inner canthus of the eye, which stands, in Indian art, for tears or water. Pointing to the picture, I have asked several Indians "if the child hurts the woman much?" The reply was always the equivalent of "exceedingly; much cry!" Yours very truly,

C. N. B. MACAULEY,
Captain and Assistant Surgeon, U.S.A.

REPORTED MORTALITY FOR THE WEEK ENDING JANUARY 14, 1887.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diph. & Croup.	Measles.	Scarlet Fever.
New York	1,481,920	763	232	16.38	22.88	.52	9.32	2.73
Philadelphia	993,801	389	106	10.33	6.89	2.31	2.52	1.05
Brooklyn	715,168	363	134	18.48	20.16	.84	10.92	3.64
Chicago	725,000	—	—	—	—	—	—	—
St. Louis	420,000	—	—	—	—	—	—	—
Baltimore	417,000	139	54	10.80	16.56	1.44	1.44	2.16
Boston	400,000	224	69	12.15	25.20	—	2.70	2.70
New Orleans	242,750	136	32	17.76	8.11	1.48	5.16	—
Buffalo	225,000	—	—	—	—	—	—	—
District of Columbia	210,000	88	32	17.10	18.21	2.28	4.56	1.14
Pittsburgh	210,000	80	29	22.50	12.50	10.00	8.75	—
Montreal	188,257	—	—	—	—	—	—	—
Milwaukee	170,000	49	27	18.36	10.20	2.04	12.24	—
Providence	121,000	—	—	—	—	—	—	—
Richmond	100,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,000	24	8	12.48	12.48	—	4.16	—
Charleston	60,115	31	16	6.46	6.46	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	68,383	26	11	19.25	30.80	—	7.70	3.85
Lowell	64,051	—	—	—	—	—	—	—
Cambridge	59,600	—	—	—	—	—	—	—
Rail River	56,863	15	6	13.33	6.66	—	—	6.66
Lynn	45,861	10	4	16.66	16.66	—	5.55	5.55
Lawrence	38,825	19	4	10.52	10.52	10.52	—	—
Springfield	37,577	11	3	44.44	—	11.11	22.22	11.11
New Bedford	33,393	10	4	20.00	10.00	—	20.20	—
Somerville	29,992	18	3	11.11	33.33	—	—	11.11
Salem	28,084	13	2	—	15.38	—	—	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	14	3	28.56	28.56	—	—	28.56
Taunton	23,674	—	—	—	—	—	—	—
Haverhill	21,795	16	3	6.25	—	—	6.25	—
Gloucester	21,713	3	1	—	33.33	—	—	—
Brookton	20,783	9	5	—	22.22	—	—	—
Newton	19,759	8	2	—	12.50	—	—	—
Malden	16,407	6	1	10.00	20.00	—	—	10.00
Fitchburg	15,375	6	4	16.66	16.66	—	—	—
Waltham	14,609	3	1	—	66.66	—	—	—
Newburyport	13,716	6	1	—	—	—	—	—
Northampton	12,896	—	—	—	—	—	—	—

Deaths reported 2,591: under five years of age 791; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 375, acute lung diseases 324, diphtheria and croup 149, scarlet fever 67, typhoid fever 36, diarrhoeal diseases 31, measles 20, malarial fever 20, whooping-cough 14, cerebro-spinal meningitis 11, erysipelas five, puerperal fever four, small-pox (New York and Brooklyn one each) two. From diarrhoeal diseases, New Orleans nine, New York and Philadelphia eight each, Boston three, Brooklyn two, Baltimore, District of Columbia, Nashville and Lynn one each. From measles, New York six, Baltimore and District of Columbia four each, Brooklyn three, Philadelphia and Boston one each. From malarial fever New York 10, Brooklyn and New Orleans four each, Baltimore and Charleston one each. From cerebro-spinal meningitis, District of Columbia three, Worcester two, New York, Philadelphia, Pittsburgh, Milwaukee, Nashville and Fall River one each. From whooping-cough, New York eight, Boston two, Brooklyn, Baltimore,

Pittsburgh, and Milwaukee one each. From erysipelas, New York and New Orleans two each, Baltimore one. From puerperal fever, New York, Boston, Pittsburgh and Nashville one each.

In the 28 greater towns of England and Wales with an estimated population of 9,244,093, for the week ending December 31st, the death-rate was 24.8. Deaths reported 4,402: infants under one year of age 1,607; acute diseases of the respiratory organs (London) 412, whooping-cough 183, measles 86, scarlet fever 84, fever 51, diphtheria 38, diarrhoea 32 small-pox, (Sheffield 24, Bristol two, Leeds and Hull one each) 28.

The death-rates ranged from 18.5 in Brighton to 33.9 in Bolton; Birmingham 24.4; Blackburn 29.0; Bradford 23.0; Hull 22.0; Leeds 25.1; Leicester 27.7; Liverpool 23.2; London 23.7; Manchester 32.5; Nottingham 28.9; Sheffield 27.7; Sunderland 21.3.

In Edinburgh 21.6; Glasgow 24.6; Dublin 36.2.

The meteorological record for the week ending January 14, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole, of the United States Signal Corps:—

Week ending	Barom-eter.	Thermometer.				Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration, Hrs. & Min.	Amount, in Inches.	
Saturday, Jan. 14, 1887.																				
Sunday, ... 8	23.90	31.0	42.0	26.0	76.0	90.0	71.0	79.0	N.E.	N.	N.W.	11	6	20	O.	O.	C.	4	.16	
Monday, ... 9	30.37	30.0	26.0	14.0	77.0	63.0	65.0	68.0	N.W.	N.W.	N.W.	14	12	9	C.	C.	C.			
Tuesday, ... 10	29.94	22.0	22.0	18.0	79.0	87.0	75.0	80.0	N.E.	N.	W.	7	8	13	C.	N.	O.			
Wednes., ... 11	30.14	17.0	24.0	12.0	64.0	44.0	56.0	55.0	W.	W.	N.W.	13	30	13	C.	C.	C.	8	.12	
Thurs., ... 12	30.76	9.0	14.0	5.0	68.0	48.0	57.0	58.0	W.	W.	N.	12	12	8	C.	C.	C.			
Friday, ... 13	30.36	31.0	45.0	5.0	82.0	100.0	81.0	88.0	N.W.	S.W.	W.	3	24	12	C.	N.	R.	C.	12	.16
Saturday, 14	30.51	33.0	44.0	30.0	68.0	69.0	65.0	54.0	N.W.	N.W.	S.	12	6	4	C.	C.	C.			
Mean, the Week.	30.283	24.7	31.0	15.7			70.3													

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING JANUARY 21, 1888.

PURVIANCE, GEORGE, surgeon. To proceed to Detroit, Mich., as inspector of unserviceable property. January 11, 1888.

AUSTIN, A. W., surgeon. When relieved to proceed to Chicago, Ill., and assume charge of the Service. January 12, 1888.

GASSAWAY, J. M., surgeon. Leave of absence extended fifteen days. January 10, 1888.

GOLDSBOROUGH, C. B., surgeon. When relieved to proceed to New Orleans, La., and assume charge of the Service. January 12, 1888.

IRWIN, FAIRFAX, surgeon. To proceed to Boston, Mass., and assume charge of the Service. January 12, 1888.

CARTER, H. R., passed assistant surgeon. When relieved to proceed to Ship Island Quarantine, Miss., and assume temporary charge of the Service. January 12, 1888.

CARRINGTON, P. M., assistant surgeon. Granted leave of absence for thirty days. January 10, 1888.

GOLDSBOROUGH, C. B., surgeon. To proceed with insane seamen from Chicago to Government Hospital for the Insane. January 16, 1888.

HEATH F. C., assistant surgeon. To proceed to Buffalo, N. Y., for temporary duty. January 20, 1888.

STONER, G. W., surgeon. To proceed to Wilmington, N. C., Georgetown and Charleston, S. C., Savannah and Brunswick, Ga., Fernandina, Jacksonville and Pensacola, Fla., as inspector. December 30, 1887.

SOCIETY NOTICES.

SUFFOLK DISTRICT MEDICAL SOCIETY. SURGICAL SECTION.—There will be a meeting of this Section at 19 Boylston Place, on Wednesday evening, February 1st, at 8 o'clock. Dr. F. L. Jack will report a case of "Necrosis of the Temporal Bone; Removal of the Labyrinth; Recovery." Dr. A. T. Cabot will present some "Notes on Complications met with in Herniotomy." Dr. H. L. Burrell will show a specimen of the "Reimplantation of a Trephine-Button of Bone."

G. H. MONKS, M.D., Secretary.

NORFOLK DISTRICT MEDICAL SOCIETY.—A meeting for Scientific Improvement will be held at the Hall of the Roxbury City Guard, 47 Warren Street, Roxbury, January 31, 1888, at 7.45 P. M. Communications: I. "Southern California as a Health Resort," S. L. Dutton, M.D. II. "Two Cases of Erysipelas of the Pharynx," A. B. Coffin, M.D. III. "Pathological Specimens," W. P. Bolles, M.D.

S. ALLEN POTTER, M.D., Secretary.

BOSTON DISPENSARY APPOINTMENTS, ETC.

At the January meeting of the Board of Managers of the Boston Dispensary, the following appointments were made: Dr. Rufus A. Kinsman, physician to the department for diseases of women; Drs. Winfield B. Bancroft, William F. Temple and George E. Richards, physicians on the medical staff at the central office; and Drs. Robert W. Greenleaf, George E. Thompson and Frederick W. Stuart, district physicians.

Voted, That the recommendation of the superintendent to furnish medical aid at the Central Office to the deserving poor of the entire city of Boston, be adopted.

EDWARD S. GREW, Secretary.

DEATH.

Died at Fairhaven, Mass., January 15, 1888, George Atwood, M.D., M.M.S.S., aged seventy-two years.

BOOKS AND PAMPHLETS RECEIVED.

Vick's Floral Guide. 1888.

The Vermont Asylum for the Insane. Its Annals for Fifty Years. 1887.

Syphilis of the Endometrium. By T. A. Ashby, M.D., Baltimore, Md. Reprint. 1887.

Treatment of Chronic Suppurative Otitis Media. By Seth S. Bishop, M.D., of Chicago. Reprint. 1887.

Transactions of the American Ophthalmological Society. Twenty-third annual Meeting. New London, Conn., 1887.

A Study of the Causes and Treatment of Uterine Displacements. By Thomas Addis Emmet, M.D., New York. Reprint. 1887.

Annual Report of the Commissioners of Quarantine of the State of New York. Transmitted to the Legislature, January 12, 1888.

Station-List of Officers of the Medical Department and Hospital Stewards of the Hospital Corps, United States Army, January 1, 1888.

Report of Proceedings of the Illinois State Board of Health. Annual meeting, Springfield, January 12, 13, 1888. Cholera—Quarantine—Medical Education.

The Eye of the Adult Imbecile. By Charles A. Oliver, M.D., Ophthalmic Surgeon to St. Mary's Hospital and to the Maternity Hospital, Philadelphia. 1887.

Transactions of the American Dermatological Association at the Eleventh Annual Meeting held in Baltimore, August 31, and September 1, 1887. G. H. Tilden, M.D., Secretary.

Practical Lessons in Nursing; Fever Nursing. Designed for the use of Professional and other Nurses, and especially as a text-book for Nurses in Training. By J. C. Wilson, A.M., M.D. Philadelphia: J. B. Lippincott Company. 1888.

Handbook for Young and Old Opticians. A Concise and Comprehensive Treatise on the Theory of the Optical Trade and of relating to Mechanical Manipulations. By W. Bohne, optician. With illustrations. Published by the author (with A. B. Griswold & Co.). New Orleans, La. 1888.

Footprints of a Profession, or Ethics in Materials and Methods. Address delivered before the Maine Dental Society at their Twenty-second Annual Meeting, held in Waterville, Me., July 19 and 20, 1887. By Horatio C. Meriam, D.M.D., Harvard University Dental School. Reprint.

The Medical Register for New England. By Francis H. Brown, M.D. Containing Statistical and Practical Information concerning Medical, Dental, and Pharmaceutical Societies and Associations, Hospitals and Dispensaries; Charitable Asylums; Professional Institutions of Education; Laws and Ordinances relating to Medical Men; Lists of Medical Examiners (Coroners); Pension Surgeons; Medical Officers of the State Militia and of Public Institutions; Museums, Libraries, Prizes; Lists of Surgical Instrument Makers, Chemists, Microscope Dealers, etc., together with Descriptive and Local Lists of Members of the New England Medical Societies. Boston: Cupples & Hurd. 1888.

Original Articles.

FEVER AND THE USE OF ANTIPYRETICS.¹

BY J. ARTHUR GAGE, A.M., M.D., OF LOWELL, MASS.

It was my original intention to write upon the uses of antipyretics, and to compare some of the more recent drugs employed for the reduction of high temperature. I was, however, confronted at the outset with the question, what is fever?—a question that has been much discussed, and still awaits a decisive answer. But so much light has been thrown upon the subject in the last few years, that I shall venture to trespass upon your time in an attempt to answer this question as far as possible, reserving for the end of the paper a brief reference to the most important antipyretics, and an explanation of their rational use in the treatment of fever. I shall first consider the source of heat in the body, its loss from the economy, and the resultant we call temperature; next study the variations in temperature, and their mode of production; and finally, consider the phenomena of fever, and the theories as to its source.

If you expose the thigh-muscles of a dog, and, after plunging a thermometer into their substance, cause a contraction by electrical current, you get a rise of the mercury. This takes place even if the blood-supply is cut off.² If you make the contractions tetanic, the rise of temperature ceases to occur after a time, though the muscles are still capable of contracting.³ If you stimulate the chorda tympani, the temperature of the saliva is raised 2° F. above the temperature of the blood in the carotid artery.⁴ The temperature of the gland itself is also raised, though the blood-supply is cut off.⁵ Again, we find that the blood coming from a large gland, as the liver, is the warmest in the whole body.⁶ Here are evidently sources of heat, the formation of which is independent of the blood-supply, incited by nervous stimuli, and, in the case of muscles, independent of motion. Other tissues also form heat, and Foster says: "We may affirm that the heat of the body is generated by the oxidation of the tissues at large. . . . Wherever tissue metabolism is going on, there heat is being set free." But of all tissues, the muscles, both on account of their bulk and character, are, *par excellence*, the thermogenic tissues. This is true even during sleep when the muscles are quiet, the so-called condition of muscular tonicity. We may thus study the muscles in our investigations upon heat-formation.

This source of heat is variable, being increased after active exercise or exposure to cold; and, if there were not some means of getting rid of heat, the body-temperature would rise to a great height, reaching the boiling point in thirty-six hours, according to one experimenter. The loss of heat takes place through the skin, lungs, urine, and faeces by evaporation, conduction, and radiation. We lose 77% by the skin, a large share going off in evaporation of sweat. Twenty per cent. is lost by the lungs, 15% being used in evaporation, and the remaining 5% going to warm the expired air. Three per cent. goes to warm the faeces.⁷

The loss of heat will depend upon the activity of the sweat-glands, the circulation, and the respiration, as well as upon the temperature and moisture of the surrounding atmosphere—these are all variable factors. Thus we have seen that the sources of heat-formation in the body are variable, that the rate of heat-loss is variable; yet their resultant, the body-temperature, is a constant, or rather, a variable within such small and well-defined limits, that it is called a constant, and is placed at 37.4° C. or 98.6° F. If we examine the temperature more closely, we shall find, according to Jürgeisen,⁸ that it has a daily variation [as was shown by Dr. L. Huntress in his paper before the union meeting of Middlesex societies at Concord, July, 1887], being highest just after mid-day, and lowest just after midnight. The question at once suggests itself: what regulates the ratio between heat-formation and heat-loss with such wonderful accuracy and such rhythmical measurement? what is it that controls the body-temperature in health? what is this power that, in disease, is overthrown, giving rise to the phenomena of fever?

Let us consider now the methods of heat-formation and heat-loss, taking the latter first, because it is better understood. If a healthy person gets into a cold bed, he soon finds the temperature of the bed raised to a degree of comfort by heat that must have been given off from his own body. This process of heat-loss is going on continuously, and it is desirable to know how we can measure it. Liebermeister placed a man in a bath, and noted the rise of the temperature of the water. From this he computed the amount of heat that must have been given off from the body. But the loss to the surrounding air from the water, and the loss from the lungs, were sources of error too great to permit of accuracy. Professor Leyden, of Leipzig,⁹ performed the following experiment: He constructed a calorimeter in the shape of a copper cylinder surrounded by a water-chamber, and this surrounded by a non-conducting material. Splashes kept the water in motion, and thermometers registered its temperature. He estimated the amount of heat necessary to raise the temperature of the water 1° C. in one hour as 55 k-units (the k-unit being the amount of heat necessary to raise the temperature of one kilogram of water 1° C.). This was called the calorimetric value of the chamber. He placed the leg of a healthy man in the chamber, secured round the thigh by a double rubber collar. At the end of one hour the temperature was raised 0.12° C. Multiplying the number of heat-units (55) necessary to raise the temperature 1° C. in one hour by the number of degrees it was raised in a given case, would represent the heat given off by the leg. This gave 6.6 k-units for one hour, and, by estimating the ratio of leg to whole body, the result for the whole body in twenty-four hours equalled 2,376 k-units of heat given off. The same experimentation with cases of relapsing fever and rheumatism showed an increase of 70% to 75% in the heat given off. These experiments are still inaccurate because the lungs and loss by evaporation are not accounted for, but they are valuable because they demonstrate an increased heat-loss in fever, and necessarily, a greater heat-formation. One or two interesting conclusions were obtained. He found that the greatest loss took place during sweat-

¹ Read before the North Middlesex District Medical Society, October 26, 1887.

² Foster, *Physiology* (1880), p. 475, et seq.

³ O. MacAlister, *Lancet*, March 19, 1887, p. 558.

⁴ Foster, *Op. cit.*, 476.

⁵ C. Bernard, "*Chaleur Animale*."

⁶ Foster, *Loc. cit.*

⁷ Foster, *Op. cit.*, p. 479.

⁸ "Die Körperwärme des gesunden Menschen." (1873).

⁹ *Deutsches Archiv*, Bd. III, p. 282.

ing; also, that the loss was increased both when the temperature was rising and falling; and finally, that the surface temperature varied independently of the rectal temperature. We must conclude, then, that we have a greater heat-production in fever, and that the function of heat-loss is very variable being greatest during diaphoresis.

What was desired was a series of accurate calorimetric measurements for the whole body. These were furnished by Dr. H. C. Wood.¹⁰ The experiments were conducted for years, and, on account of their elaborateness and accuracy, are of great value. His calorimeter contained the whole body of an animal. The principle was similar to Leyden's and Senator's, but all sources of error were eliminated as far as possible. The inspired and expired air were carefully measured, analyzed, and the heat-value noted. The CO_2 and urea were carefully measured, and errors due to the influence of temperature and barometric pressure of surrounding atmosphere were calculated. He found, as Leyden had done, an undoubted increase of heat-dissipation in fever. How does this take place? If the heat is chiefly produced in the muscles, it must find some means of reaching the surface, and this must be largely accomplished by the circulation, the greatest cooling taking place while the blood is passing through the capillaries of the skin. The more dilated these are, the slower the blood-current flows, and the more rapidly cooling takes place. Now it is well known that the vascular system is under the control of that portion of the nervous system called the vaso-motor system [v. m. system]. This has been demonstrated by Dittmar, Owsjannikow, and Heidenhain,¹¹ and the v.-m. centre has been localized in the medulla oblongata. Stimulation of this centre will cause contraction of arterioles, and so less heat is given off; paralysis will cause dilatation and a greater heat-loss. Evidently, heat-loss must be under the control of the nervous system. To demonstrate this, Wood cut the spinal cord of an animal below the medulla, and placed him in the calorimeter. He found that there was increased heat-loss and a fall of temperature, and, at the same time, there was diminished heat-production in the tissues removed from their nerve control. The fact of greater heat-loss after section of the cord was noted as long ago as 1811 by Brodie,¹² who showed, in addition, that a rabbit with the cord cut cooled faster than a dead rabbit under like conditions. M. Henri Parinaud,¹³ in some careful experiments, showed that after section of the cord the temperature fell progressively 15° in thirty hours, the temperature of the room being 67°F . The fall was more rapid, the lower the external temperature, and was lower in the paralyzed than in the non-paralyzed parts. Care was taken not to affect the respiration in these experiments. We are thus led to the conclusion that the fall of temperature is due to paralysis of the v. m. nerves by the section of the cord, and the resulting dilatation of the vessels of the skin. *Per contra* irritation of the v. m. centre or its nerves would cause spasm and retention of heat, with a rise of temperature. Both of these conditions are exemplified in fever. In the rigor with a cold, pale skin, you have contraction of arterioles and retention of heat; this

rapidly gives way to the hot, flushed skin, with increased heat-loss. If we look briefly at the respiration, we shall see that here, too, we get a greater or less heat-loss dependent roughly on the rapidity of the process, and that this is under the control of a nervous mechanism comparable to the v. m. system. It is evident, then, that heat-loss in the body is almost completely under the control of the nervous system, chiefly the v. m. system.

Now let us look at heat-formation. The most common illustration is the process of combustion, the union of carbon and oxygen to form CO_2 in a common coal-fire. Naturally, a similar process suggested itself as taking place in the body. We breathe in O_2 , and take in C with our food, and we excrete CO_2 by the lungs; the ashes appear as urea in the urine. We must not forget, however, that the process is a complex one, and has to deal with complex organic compounds in going through constructive and retrograde metamorphosis. If we consider heat-formation from the standpoint of combustion, we get the following results: According to Professor Frankland's tables, we can estimate accurately the heat-producing capacity of different articles of food. One gramme of albumen yields 4.998 k-units of heat, and can produce $\frac{1}{3}$ gramme of urea. Now this latter, when given off from the body, still can produce .735 k-units heat; therefore, we must subtract the latter from 4.988 to get the amount of heat one gramme of albumen can furnish to the body. A healthy man on fever diet (inanition) excretes 17.5 grammes urea in twenty-four hours. To do this he requires 52.5 grammes albumen (estimated by the nitrogen in the two), and this can furnish 229 k-units of heat in complete combustion.¹⁴ Again, the same man will excrete 528 grammes CO_2 in twenty-four hours. His 52.5 grammes albumen, which he has taken to form his urea, will furnish 27 grammes of carbon, 3 of which go out as urea, while the remaining 24 are given off by the lungs. If we subtract this 24 grammes from the total amount of carbon given off by lungs in twenty-four hours (144 grammes), we have left $119\frac{1}{2}$ grammes carbon not accounted for by the albumen eaten. This surplus carbon must come from the fat of the body, and would require 156 grammes fat to produce it.

This amount of fat can yield 1,419 k-units of heat. Add to this the 229 k-units derived from the albumen eaten, and we get 1,648 k-units as the total heat produced by a healthy man on fever diet. By the same calculation, we can estimate the heat-production of a man on full diet (Health), and of a man with fever (Fever) for twenty-four hours. The results give:

Inanition equals	. . . . .	1648 k-units.
Health equals	. . . . .	2118 "
Fever equals	. . . . .	2373 "
Heat-loss (estimated) equals	. . . . .	2376 "

"Health" is not on a full diet, but on a "balance" diet; that is, enough food to preserve the weight equilibrium. On the average diet, the heat capacity would exceed 2,118 k-units, and would probably equal 2,373 k-units. Thus we see that a man with fever and on fever diet can produce more heat than a healthy man on the same diet, but no more than a healthy man on a full diet. These results are doubtless not conclusive, but are interesting, particularly in

¹⁰ "On the Nature of Fever," Smithsonian Publications, 1879.

¹¹ Quoted by Wood. Op. cit.

¹² Sir Benj. Brodie, Phil. Trans. (1811-1812).

¹³ Archives de Physiologie, 1877.

¹⁴ Senator, reported by Burdon Sanderson. Reports of Privy Council, 1875. Vide also Deutsch. Arch. für Klin. Med., Bd. 7, p. 536; and Virchow's Archiv, B. 76, p. 126.

comparison with Leyden's heat-loss for twenty-four hours.

In our calculation, a certain portion of the heat was shown to come from the tissues of the body; what are the tissues consumed in fever? The albumen of the body is in two forms, circulating and tissue albumen. The former is rich in sodium, the latter in potassium. Salkowski¹⁶ has shown that in fever the excretion of potassium is increased. Therefore this and the increased urea must come from the consumption of the organized tissues (including the blood corpuscles, but not the liquor sanguinis). The excretion of the sodium is diminished, but is greatly increased after the fever is ended. Wood¹⁷ says that in his experiments there was a marked increase of heat-production after the ingestion of food, and that it must have come from the circulating albumen. But as there is increased heat-production in starvation with fever, in the flowering of plants, and in muscular exercise, it must at times come from the tissue-albumen. There are thus two sources of heat in the body, and the fact that the food is one of these is of direct practical importance in connection with the question of feeding fever patients. "Graves fed fevers."

We have seen how we may get an increased heat-production in fever, and calorimetrical tests prove that this increase actually does occur. Dr. Wood¹⁷ has shown that by measure there is more heat formed in fever than in health under like conditions and sometimes even more than in health with a full diet. It is probable that there is a difference in heat-production in different patients and in different fevers. But he developed a most interesting fact. In his experiments on heat-loss after section of the spinal cord he found that he sometimes got a rise of temperature if the surrounding medium was warm (90° F.), or the animal specially vigorous. As his animal was losing more heat, he concluded that some agency must be at work to increase heat-formation sufficiently to overbalance the loss. If he could cut the cord high enough to leave the v. m. system intact, he could determine whether the nervous system had any control over heat production. With great care he made such a section at the junction of the medulla with the pons, and got a following rise of temperature. He proved the v. m. system to be still intact by irritating a sensitive nerve after section of the vagus, and getting a spasm of the vessels and a rise of blood-pressure. With the increased heat-production there was increased loss, but the former prevailed, and the temperature rose continuously for twenty-four hours while the animal lived. If there is a force removed by his section above the medulla, what and where is it? Enlenberg and Landois¹⁸ demonstrated that, by destroying a certain portion of the "first cerebral convulsion posterior to the sulcus cruciatus," they got a rise of temperature on the opposite side of the body, and on irritating this spot they got a fall. Hirtzig¹⁹ and Wood have confirmed this. Heidenhain²⁰ furnished additional evidence of the existence of a nerve-centre controlling heat by showing that strong irritation of a sensitive nerve was followed by a fall of temperature though the blood-supply was cut off: and we have already seen that

irritation of a motor nerve will cause a rise under like conditions. Mantigazza and Wood both confirmed Heidenhain's conclusion, and the latter showed in addition that there was often a preliminary rise due to muscular spasm and v. m. spasm, that gave way quickly to a permanent fall. If this result is due to the influence of your irritation on a heat-centre, and you can cut its nerve, irritation should no longer cause a fall of temperature. Experiment showed this to be true. It seems highly probable then that there is a nerve-centre above the medulla that controls heat-formation, and that it is inhibitory in character. Aronson and Sachs²¹ have been able to cause a rise of temperature and an increase of the secretion of CO₂ and urea by passing a needle into a rabbit's brain on the "medial side of the corpus striatum."

The rabbit ran about as usual and no portion of the brain was injured. By a mild current of electricity they could produce fever *at will* for short or long periods. If these experiments are verified they will undoubtedly show the existence of a nerve-centre that stimulates heat-formation, thus making the nervous control of heat-production a double mechanism similar to that controlling heat-loss.

Is there any clinical evidence for the existence of a heat-centre? I must refer you for a careful and suggestive paper on this subject to one by Hale White.²² He cites many cases, and concludes as follows: Many tumors of the brain, pons, medulla and cord cause a rise of temperature, and such tumors are situated in just such a position that they would impinge on the supposed inhibitory centre or the fibres running from it. *Per contra*, other tumors do not cause a rise of temperature, although you would expect them to do so if their action was due to anything but pressure on a definite portion of the nervous system. The same is true of hæmorrhages and embolism. Wood has reported a case of hæmorrhage into the pons (where the heat fibres are supposed to run) where the temperature of the paralyzed side was higher for months than the other side. Certain nervous hyperpyrexias can be explained on no other ground, and hysterical pyrexia adds weight to the hypothesis. Parinaud²³ reports a case of epilepsy where the temperature went on rising after the severe muscular spasms had ceased, and was highest (109° F.), fifteen minutes after death. Finally, many neuroses, locomotor ataxia, insular sclerosis, injuries to the brain and cord that do not give rise to inflammation, still cause high temperature, and go far in confirming the belief that the nervous system controls heat-formation.

Have we reason by analogy for the existence of a heat centre? The great advances made in cerebral localization throw light upon this question. We know where the nerve centres for sight, hearing, speech and taste; for mastication and deglutition; for respiration, the heart, and v.-m.-system, are all situated. Again we know that the nervous system controls nutritive processes, as bedsores, herpes zoster, secretion of milk and many others. Now, if the nervous systems control these processes (and the list is constantly growing), why should it not control a function so essential to the economy as heat-formation?

We are now in a position to consider some of the thermic phenomena of the organism. If a cold-blooded animal with a temperature but little above that of the

¹⁶ Quoted by Burdon Sanderson, op. cit.

¹⁷ Op. cit.

¹⁸ Op. cit.

¹⁹ Virchow's Archives. Bd. LXVIII, p. 245.

²⁰ Centralblatt für die Med. Wissensch., 1876, p. 323, quoted by Wood.

²¹ Quoted by Wood, op. cit.

²² Reported in Lancet, March 26, 1887, p. 613.

²³ Guy's Hospital Reports, No. XXVII, 1883-1884.

²⁴ Op. cit.

surrounding air is subjected to cold, he suffers a fall of temperature corresponding to the outside change, and the amount of CO_2 and urea excreted is diminished. This may go on till the freezing point is reached with snails and gold-fish, and yet recovery may take place on again warming them up, with an increase of CO_2 and urea. But expose a warm-blooded animal to cold and you get an increased heat-formation with more CO_2 and urea excreted. More heat is also given off, but there is no change of body temperature. Now suspend the action of the nervous system with urari poison in the latter class, and they behave just like cold-blooded animals. Evidently physical laws are not sufficient to explain these phenomena, and we must look to the nervous system for an explanation of these heat changes. How are they accomplished? It is now known that there is a temperature sense, that there are nerves terminating in the skin that are acted on by heat and cold. Pfüger²⁴ observed that a patient, who was paralyzed as to his tactile sensation, could still distinguish between heat and cold. By analogy, stimuli affecting these nerves should by the law of reflex action affect the heat centre, and produce corresponding changes in temperature to meet the requirements; but this is only possible supposing nerve centres to govern the heat processes. Again, the temperature of children is much more susceptible of variations, both in health and in disease, than that of an adult, and, what is equally true, they have less control over their reflex action, that is, the nervous system is less stable.

One of the most constant and significant of fever phenomena is high temperature. What is it, and what its meaning? I will first state what it is not by a seeming paradox. *Temperature, as indicated by the clinical thermometer, is not alone a correct guide of the fever process.* In one of Wood's experiments the respiration was stopped, and thus no oxygen supplied for combustion, but the temperature continued rising, owing to v. m. spasm and retention of heat; this is also seen in the post-mortem rise of temperature. Consequently, you may have a high temperature, though the fever process is not very active. The reverse is also true, and you may have a low temperature due to greater heat-loss by profuse sweating or paralysis of v. m. system, though the consumption of tissue is still going on with unabated energy. I do not wish you to understand me as saying that, in general, a high temperature does not coexist with rapid tissue-change—it probably does—but it is not an essential coexistence, and is subject to great variation. Therefore, we must not go to a patient, and, because we find a relatively low temperature, conclude that the processes that are undermining life are not very active; the contrary may be true. We must look to other evidences of tissue-metamorphosis in the amount of urea and CO_2 eliminated [the amount and specific gravity of the urine, and the rapidity of respiration, would serve as bedside-tests], and in the condition of the skin, and particularly the nervous system, in order to satisfy ourselves of the activity of the fever process, and not depend too implicitly on our thermometer. Otherwise we may lose our patients unexpectedly, and find others recovering who were apparently the sickest. This is illustrated in the case of many children's ailments, where a sudden high temperature evidently does not indicate extensive tissue-consumption, for we

see them recovering with comparatively little effect on nutrition. What, then, is temperature? It must evidently depend upon the play between heat-loss and heat-formation. Given increased heat-formation, you will get a rise of temperature whether the heat-loss is diminished or stationary, or increased—provided the increased loss is not enough to compensate for the increased formation. Again given a diminished heat-loss, and you will get a rise of temperature under any condition, save a great diminution in heat-production, and even then the high temperature may last for some time; for example, after death. If, during fever with heat-formation and heat-loss, one increases and the other decreases at the same time, you may get, in one case, a rapidly rising temperature; in the other, a corresponding fall.

In looking at the relation of the nervous system to the fever process, we have seen that heat-loss and heat-formation are probably each under the control of a double-acting mechanism, motor and inhibitory, and this is rendered the more probable when we consider the double control of the heart and respiration. But further than this, it seems evident that there must be somewhere among our nerve-centres a power that co-ordinates these two functions. When we consider our two variable factors (heat-formation and heat-loss) under such control that in health they give a constant temperature, whether a person lives in Iceland or in India; when we note that in fever, with all the disturbance caused by influences from without and within, the two factors are still under control, and seeking to find equilibrium, we must conclude that some force directs their separate fluctuations so as to bring them into harmony. What it is we do not know, any more than we know what power co-ordinates all the wonderful muscular movements of our body, but only that it must reside in the higher nerve-centres.

(To be continued.)

HYPERTROPHY OF THE GLANDULAR TISSUE AT THE BASE OF THE TONGUE, WITH REPORT OF CASES.¹

BY JOHN W. FARLOW, M.D.

THE existence and importance of the glandular tissue at the base of the tongue has received but little attention hitherto. Anatomists and microscopists have differed in regard to its character and extent, and clinically it has been almost overlooked. In the ordinary examination of the throat with the tongue-depressor, the base of the tongue is usually below the line of vision. When looking at the larynx with the laryngeal mirror, the epiglottis, arytenoids and vocal cords claim so much attention and are so often the seat of disease, that the back of the tongue is forgotten. In many people the tongue is so arched, thick and resisting that it is not easy to see its base. But, in view of the possibility of finding some morbid condition in this place, it is advisable, as a routine practice, to depress the base of the tongue so as to get as complete a view as possible of its entire length, even to its junction with the epiglottis. With the laryngeal mirror, a better view of the glossoepiglottic space can generally be obtained by holding the mirror not as in looking at the larynx but farther forward and higher in the

²⁴ Arch. für die Gesamte Phys. 1878.

¹ Read before the Suffolk District Medical Society, Section for Clinical Medicine, Pathology and Hygiene, December 14, 1887.

mouth. The anterior surface of the epiglottis and its relation to the base of the tongue should be carefully scrutinized.

Treatises on Diseases of the Throat have, thus far, had practically nothing to say on the subject, and so recent a writer as Butler, on 'Diseases of the Tongue,' makes no mention of the condition.

Glandular tissue, to a greater or less extent, is nominally present in most individuals after the age of puberty, but before that it is but slightly developed. But a degree of enlargement of this tissue sufficient to be considered pathological and give rise to symptoms calling for its removal, seems not to be as common as we should expect when we consider how common hypertrophic changes are in the throat, especially in our changeable New England climate. My attention was first called to this subject by an article by Dr. H. Holbrook Curtis in the *New York Medical Record* for 1884. Since then I have examined more carefully for the condition he described, and although a very large number of throat patients have been under my observation in the throat clinic of the Boston Dispensary, I have been surprised to find how few cases really called for treatment, not more than five or six, I should say.

According to Swain,² who has written the most extended account of this condition, the hypertrophy is a simple, chronic inflammation of the follicular glands with hyperplasia. I have also seen instances in which this tissue swelled more acutely, adding to the severity of an ordinary pharyngitis and exciting to violent expulsive efforts to cough it out.

These follicles are sometimes uniformly enlarged and arranged with fair symmetry, or they may take the form of one or more large masses on either side of the tongue, and in all my cases there had been a reddish, boggy, nearly oedematous look. Often the opening of the gland with a little secretion in its mouth can be seen.

Not only the amount and seat of the hypertrophy should be determined, but also its relation to the epiglottis and the peculiar character of the latter. If the glosso-epiglottic space is naturally small and the epiglottis very flexible, its tip is more likely to be caught in the glandular mass, or be pressed on by it, than where the epiglottis is firmer and more erect, and the glosso-epiglottic region larger, even if the hypertrophy is no more. So that it is important to determine whether the epiglottis in its various movements and positions is really pressed against or entangled in the glands.

My most marked case was in a young lady about thirty, seen in May, 1886. She had always had a sensitive throat, and been subject to a distressing cough, although, in other respects, she was in excellent health. She had a very good voice and took lessons and sang a great deal. About a year before I first saw her she began to complain of a tickling in the throat and to feel as if some foreign body were there. Her cough became more violent in her evident efforts to rid herself of the source of her discomfort, and this often caused vomiting. Her voice became thick, husky and easily fatigued, and she was obliged to give up her singing. I found the whole fauces, pharynx and larynx very red, but what attracted my attention most forcibly was the complete filling up of the glosso-epiglottic space by hypertrophied tissue. In the me-

dian line the follicles were considerably enlarged but of uniform size. On the sides the hypertrophy took the form of a large rounded mass which was in contact with the epiglottis, the mass on the left being larger. Cocaine applied directly to these growths removed the feeling of a foreign body and the coughing stopped. I applied glacial acetic acid to the masses on the sides and tincture of iodine to the smaller growths in the centre. After several applications the hypertrophy had very much diminished and all the symptoms disappeared. I directed astringent gargles to be used for some time.

The patient has since left Boston, but a letter recently received from her tells me that she has been well ever since. A throat specialist, who has lately examined her throat, reports no return of the hypertrophy.

As an example of the more uniform enlargement of the follicles I will simply refer to one other case, a young woman twenty-four years old, who had been supposed to have laryngitis. She had the feeling as of a foreign body in the throat and a violent, expulsive cough with weak voice. The follicles were numerous and large, but of a uniform size, (there being no large masses as in the first case), and pressed against the epiglottis. Application of tincture iodine and the use of astringent gargles were sufficient to cause all her symptoms to disappear.

My other cases have been quite similar to the one last cited, and have all been women not far from thirty years old, and in good health. This may be chance, but, from the difference in their nervous sensibilities, of course, a much smaller degree of hypertrophy of these follicles would be sufficient to cause symptoms demanding treatment in a woman than in a man. It has been suggested that many cases of globus hystericus might be due to pressure from these follicles. My own observations are not sufficient to warrant my forming a definite opinion, but the symptoms in my cases were not at all such as are usually called globus hystericus. I hope this will be particularly inquired into by those who have many hysterical women under their care.

As regards etiology my cases gave me no information. None of them presented other than the history of occasional or frequent colds and coughs. As all were in good health it would seem to have no connection, either as cause or effect, with serious disease. Unlike hypertrophy at the vault of the pharynx it cannot do any great amount of damage without causing cough or some symptom marked enough to impel the patient to seek medical advice.

The symptoms caused are irritation in the throat and the feeling of a foreign body, cough violent and expulsive, huskiness, fatigue in speaking and singing, and weakness of voice. Sometimes the epiglottis, being imprisoned in the glandular mass has caused more active feelings of distress, such as laryngeal spasm, relieved by freeing the epiglottis. Such instances have been recorded by Rice,³ Betz,⁴ and others.

The treatment seems to be very satisfactory and is like that employed for similar hypertrophies in other locations. Where the follicles are not in the form of large masses, applications of tincture of iodine cause a diminution in the size. Swain² used with good result

¹ New York Med. Rec., May, 1886.

² Monatsch. f. Ohrenh., 24, 1879.

³ Op. cit.

⁴ Deutsch. Arch. f. Klin. Med. 29, 1886. p. 504.

Lugol's solution, liquor iodinii compositus. Where large masses are present applications of caustic, glacial acetic or chromic acids, Vienna paste or the galvanocautery bring about a much speedier disappearance of the growths. A bent wire applicator can be used with the aid of the laryngeal mirror or, in some cases, where the tongue can be completely depressed, no mirror need be used. Later, astrigent gargles are of benefit. Cocaine is an aid in the diagnosis and also of service in the treatment.

NOTE ON AN ANOMALOUS ARRANGEMENT OF THE LARGE VEINS OF THE NECK.¹

BY J. G. PINKHAM, M.D., LYNN, MASS.

IN making an examination of the body of the young colored woman who was recently killed in Lynn, by a razor wound of the neck, an anomalous arrangement of the large veins of this region was discovered, which it seems to me worth the while to describe and place upon record. The cut began one inch in front of the angle of the jaw on the left side, and extended obliquely downwards and forwards a distance of two inches, to the top of the thyroid cartilage, thence parallel to the lower jaw on the right side, a distance of two-and-a-half inches. The structures divided were the skin, the subcutaneous cervical muscle, the superficial layer of the cervical fascia, and the sterno-hyoid muscles. The thyro-hyoid muscle of the right side and the thyroid cartilage were cut into. At the bottom of the wound on the right side, and far out, was seen a large vein partially severed and still bleeding. From its position, this was at first supposed to be the external jugular vein; but when followed upwards with a probe it was found to divide into two main branches, one of which passed upwards and inwards to the region of the jugular foramen, and the other upwards and outwards to the front of the ear. Below, the main vein was found to dip beneath the sterno-cleido-mastoid muscle, and to join the subclavian, forming with it the innominate of that side. Further dissection revealed the carotid in its sheath with the pneumogastric nerve, in their usual positions, but with no vein accompanying them. It was therefore concluded that the internal jugular vein, in descending from its point of origin, had abandoned its place by the side of the internal carotid, and turning outwards towards the surface, had joined the external jugular to form a common jugular, which from this point pursued a course downwards midway between the course of the external and that of the internal jugular, until it joined the subclavian. This common jugular, although loosely invested with fibres from the cervical fascia, was entirely outside and above the sheath of the carotid. In order to make sure of my conclusions, I followed the bloodvessels upwards from the *vena cava descendens*, and laying them open verified every point. The arrangement on the left side was found to be the same as on the right, except that the vessel was smaller. As the cut was higher in the neck at this point it struck the vein in its most superficial position, and completely severed it. Had it not been for this unusual arrangement of the large veins, it is possible that the cut, severing as it would have done, only the external jugulars, might not have

caused death, or at any rate might have proved less speedily fatal. As it was, death occurred from hemorrhage in about twenty minutes, as nearly as could be ascertained, after the infliction of the wound.

Clinical Memoranda.

AN EPIDEMIC OF MEASLES.¹

BY W. D. HODGES, M.D.

AN unusual opportunity to observe an epidemic of measles at a charitable institution, from its inception to its end, is my apology for bringing this subject before the Section.

On January 27th the institution contained sixty-five children, between the ages of one and sixteen years—fortunately, a much smaller number than usual. On that day, a child six years old was admitted, and, as it had a severe cold, was sent at once to the sick ward. Twenty-four hours later an eruption appeared, which proved to be measles; and it was subsequently learned that the child had been exposed to this disease. On the same day that this child developed measles, three children were discharged from the ward in which he was put. Nine days after the discharge of one, and eleven days after the discharge of the two others, they developed measles, and had also conveyed the contagion to 14 other children, who were admitted to the hospital on the following day. Sixteen more children were taken sick on the 22d and 23d days after the breaking out of the *first case*; that is, eleven and twelve days after the development of the *first set* of cases. During the next seven days, that is, between the 29th and 36th days, 12 more children developed the disease.

Of the remaining 20 children in the institution who escaped measles, 10 were sent away: 8 had already had measles before they were inmates. In two instances, no definite information could be obtained.

The epidemic was confined to 45 children, 39 of whom were between the ages of four and seven years; and its fatality was represented by five deaths—one of whom had capillary bronchitis, and the four others diphtheria.

Examination of the throat in 30 cases showed a varying amount of congestion of the pharynx, palate, and tonsils, with, sometimes, red papules. Three cases with very marked congestion were followed, in twenty-four hours, by diphtheria, two of which were fatal.

The eruption was at its height on the fifth and sixth days, and lasted from twelve to fourteen days. In eight cases it did not disappear for over three weeks, and this group included the four oldest children, aged, respectively, nine, ten, eleven and nineteen (a servant).

It is interesting to note that two of these cases of long duration of the eruption were complicated with capillary bronchitis, one with pneumonia, and one with diphtheria. One of the children with capillary bronchitis died.

Desquamation was noticed in a large number of cases—probably more than half—in a few of which large pieces of cuticle were thrown off.

The enlargement of the glands in the neck was

¹ Read before the Massachusetts Medico-Legal Society, February 2, 1887.

¹ Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Suffolk District Medical Society, December 14, 1887.

most marked in those cases that had considerable congestion of the fauces.

Aphthæ upon the lips and tongue were very severe in nine cases.

There were 25 cases of otitis, most of which were detected during the first week, the children crying without apparent cause, and raising their hands to their ears.

There was one case of convulsions, which came on three days before the eruption. This child made a rapid recovery.

Epistaxis and diarrhœa were of frequent occurrence, but never a cause for anxiety.

Conjunctivitis, with intolerance of the light, was present in most of the cases, and was treated with a solution of borax, glycerine, and water.

The highest temperature noted was 106°, in a case complicated with capillary bronchitis, which proved fatal. The temperature usually fell slowly after the eruption had reached its point of greatest development. It was generally subnormal during convalescence.

The treatment consisted chiefly in maintaining cleanliness and regulating the diet.

A SECOND ATTACK OF MEASLES AFTER A SHORT INTERVAL.

BY J. A. JEFFRIES, M.D., OF PHILADELPHIA.

The cases of measles described below seem to me worthy of note, owing to the perfect health enjoyed during a short interval between the two attacks. It hardly seems logical to call the second attack a relapse, yet, as a case of second attack, the interval is very short. Of the identity of the two attacks there can be no reasonable doubt.

J. C., four years, healthy child, began to sicken on the 4th of June "with cough and eyes." First seen on the 6th, when the patient had a rash on the face, chest, and back. The rash was red, of the color most common during the last epidemic of measles, slightly itching, elevated, distinct, the spots varying in size from a sixteenth to a quarter of an inch in diameter, and roughly circular in form. Legs free; rash not stippled or in the form of a blush. Fæuces slightly reddened, lungs resonant, full of large, moist râles, soft cough, no diarrhœa; pulse 80, morning temperature 98.4°, respiration 22. On the morning of the 7th the rash was more developed on the body: pulse 94, temperature 99°, respiration 34. The rash rapidly vanished, did not scale, and by the 13th of June the patient showed no sign of disease.

During the next four weeks, I saw the child frequently playing about the house.

On July 20th he suddenly sickened again with "cough and red eyes," and, on visiting him on the morning of the 22d, the following condition was found: Eyes, catarrhal conjunctivitis; face with a red, distinct, papular rash over malar bones, spots from a sixteenth to a quarter of an inch in diameter; light, soft cough, large, moist râles, slight congestion of fauces; temperature 99°, pulse 100. On the 23d the rash had spread over the body, was patchy, and the cough increased. The next day, saw a change for the better, and the child rapidly returned to health, though distressed by a crop of little blisters on the 26th, apparently due to too much iodide of potash.

Nine days later, May McC., one year, living in the same house, came down with a mild, but distinct attack of measles.

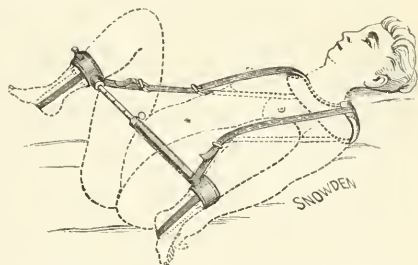
"German" measles I have seen in Europe, and feel competent to make a differential diagnosis.

New Instruments.

A MODIFICATION OF THE "PERINEUM DISTENDER" TO AVOID ITS INTERFERENCE WITH RESPIRATION.¹

BY W. W. KEEN, M.D., PHILADELPHIA.

In the frequent use of the "Perineal Distender" I have found the strap which passes under the nape of the neck very objectionable. This strap flexes the legs, and supports their weight. While doing so the weight of the legs pulls the head and neck strongly forward, and thus often seriously embarrasses the respiration.



To avoid this, I have had the wooden shoulder-piece of the old Day's apparatus for fractures of the clavicle slightly shortened, and find it answers admirably. Under its loops, over each shoulder, two straps are passed with a buckle turned wrong side foremost at one end. The other free end, after passing through this buckle in the armpit, then is buckled to the cross-piece between the legs. By this means the pressure is brought on the shoulders instead of the neck, and respiration is entirely unimpeded.

I have also had two straps attached at right angles to the straps for the legs. By this means the leg-straps can be secured above the calf as usual or at the ankle. In this last position the new straps, by passing under the foot-soles, more completely flex the legs and get the feet out of the way of the operator.

—The *Dietetic Gazette* points out that all the heavy work of the world is not done by men who eat meat. The Roman soldiers, who built such wonderful roads and carried a weight of armor and luggage that would crush the average farm-hand, lived on coarse brown bread and sour wine. They were temperate in diet and regular in exercise. The Spanish peasant works every day and dances half the night, yet eats only his black bread, onion and watermelon. The Smyrna porter eats only a little fruit and some olives yet he walks off with his load of a hundred pounds. The coolie, fed on rice, is more active, and can endure more than the negro fed on fat meat.

¹ Shown at the Philadelphia County Medical Society, stated meeting, December 28, 1887.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOL- OGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

DECEMBER 14, 1887.

The meeting was called to order at 8.00 P. M., by the chairman, Dr. A. L. MASON, who after a few introductory remarks, called for the

REPORT OF THE COMMITTEE ON MILK.

appointed June 7, 1887, to take into consideration what further action the section could properly undertake in regard to the milk-supply of Boston. The report as presented was published in full in the daily newspapers (December 19, 1887.)¹

Dr. JOHN W. FARLOW read a paper on

HYPERTROPHY OF THE BASE OF THE TONGUE, WITH REPORT OF CASES.²

Dr. S. W. LANGMAID said: My observation is a good deal like Dr. Farlow's. I remember one example of the disease where a young lady was perfectly unaware that there was anything out of the way, but her music teacher had looked into her throat, and seeing something wrong sent her to me. There was a growth half as large as a filbert, on the back of the tongue, the nature of which at first puzzled me. But I soon found out what it was when I punctured it. It was very vascular, and by successive examinations I made up my mind that it was adenoid tissue. I don't think that it gave the young lady any discomfort, but the teacher, because the tone of her voice did not please her, had the curiosity to look into her throat, and discovered the tumor. I must say that I have never known much trouble to be caused by it.

I don't recall a case of such extensive hypertrophy as Dr. Farlow speaks of. That seems to be an extreme one. It is not at all strange, it seems to me, that there should be hypertrophy there very frequently, because the condition is about the same as we get in the tonsils and the region would naturally participate in any inflammation of the pharynx or fauces. The wonder is rather that we see it so seldom. Perhaps it is that we don't look for it, as Dr. Farlow suggests. It seems to me that our attention would be called to it if the growths were very prominent, or gave rise to much disturbance.

I have sometimes thought in the lesser cases, where the hypertrophy was not very great, that the original cause was in the digestive organs, and that has especially, I think, been shown in the diminution of the growth by the treatment of some dyspeptic trouble that the patient might have. Local applications of iodine I suppose are always made if there is much enlargement. Then, as I said, if the attention is directed to the digestive organs, very frequently I think the trouble will be found there.

Only this afternoon I saw a case where there was much hypertrophy, and where there was on the sides of the tongue, nearly at the base on both sides, an irritated spot. The patient came to me on account of the irritation, and examining it, I found a kind of tes-

sellated looking surface, made up of small glands, not the circumvallate papillae, but other glands, and they were extremely sensitive. That has occurred in my practice a good many times.

It has given rise in the mind of the patient to the fear that a malignant growth was forming. The irritation is generally, I think, on both sides of the tongue. That is a fortunate thing as you can assure the patient that it is not a malignant growth.

And then if you examine into the case you will almost always find that there is some digestive disturbance. That taken care of, the irritation disappears, and the enlarged follicles diminish in size. I agree with what Dr. Farlow has said in regard to the few observations that have been made. Yet it has been well-known. The very oldest writers speak of these hypertrophies. The old anatomists speak of them, but draw no conclusions, and say nothing with respect to their clinical importance. I remember the remark that some of the cases of globus hystericus might be referable to them, but I have had no reason to think in my cases that there has been anything of the kind. It seems to me that Dr. Farlow's paper is a very timely one, to call attention to the subject, and perhaps we shall know more about it than we do now.

Dr. T. A. DEBLOIS said: I think we have all noticed the increase in the number of those cases since the death of General Grant. A great many women imagined that they had cancer, and in that connection I have been consulted a good many times. Last year there was a case at the City Hospital in one of the nurses, who had quite a large growth, and she was fully possessed of the idea that she was developing a cancer. She had a good deal of pain in the growth, too, more than you would be led to imagine from the appearance. I found that besides the ordinary iodine applications, the syrup of hydriodic acid seemed to have a very beneficial effect. The glands diminished in size, and the pain passed off in the course of a week or so. She had a good many applications. They have never returned so far as I know. Two months ago I had a case of a similar kind where the pain was considerable. Here, also, it seems as if the syrup of hydriodic acid had a good effect.

There was a case last week rather different from any described by Dr. Farlow, in which, upon the base of the tongue, and perfectly symmetrical, were two patches which appeared to be enlarged papillae. They were very much hypertrophied and were very hard, feeling to the probe almost like the calcareous degeneration which takes place in the tonsils sometimes. These papillae overlapped as the leaves of a flower. They were very tough. You could get very little on scraping them with a curette. I scraped until the tongue bled all around, but got very small particles of this off. I managed finally to wrench off some pieces with the forceps. They did not change at all under the applications of glacial acetic acid or constitutional treatment. The patient disappeared. It was the first of the kind that I have seen. Dr. Langmaid says he has seen two or three of the kind, but I never saw anything before like it.

Dr. W. D. HODGES then read a paper on

AN EPIDEMIC OF MEASLES.³

Dr. S. H. DURGIN said: I have been asked to say something on this paper. I did not know what the

¹ Boston Herald.

² See page 116 of the Journal.

³ See page 118 of the Journal.

points would be. I presumed it would be something about the nature of official interference in this disease, as in some of the other contagious diseases, and perhaps it will be worth speaking about. So far as the epidemic is concerned, I don't know that there is anything more than the complement we ought to pay Dr. Hodges for the wise care and the points brought out in the case. It gives additional evidence in regard to the time when the disease may convey itself to others. It is oftentimes a question with physicians as to just when the point of danger begins in most of our contagious or eruptive diseases. I am very frequently asked the question whether the other children ought to be taken away at one time or another, and particularly as to when exposure might be dangerous.

I think that in these cases reported, the evidence seems very clear that the point of danger reached by these first cases was very early. And I think, if I remember correctly, that it was very quick for the eruption to appear. In small-pox the question is very frequently asked whether there is danger of contracting the disease before the eruption is clearly defined. It has been my experience that the danger begins certainly as early as any kind of an appearance of an eruption is shown. I think the same may be said of scarlet fever; and it certainly seems to be true of measles.

In regard to the care of measles, it has always seemed to me, and particularly since my connection with the health office, that the same care in isolation and in disinfection should obtain as is called for in small-pox, in scarlet fever, and in diphtheria. It is to be regretted, I think, that among people in general, and I am even more sorry to say among physicians largely, the feeling is that this disease does not amount to much, and the children will have it anyway, and we might just as well cease to interfere. I cannot think so, particularly when we find so many deaths yearly from this disease. It is just as much loss to your family when the child dies of measles as when he dies from diphtheria or the small-pox, and yet in the community, if your child dies of measles, little is thought of it. If it dies from small-pox or diphtheria or even typhoid fever, there is a great deal said about it, and there is great fear lest some one else will die of the same disease. Now I cannot see why this feeling should not exist in regard to measles. I don't think that it is absolutely necessary that the child in childhood should have measles. Neither do I think so of scarlet fever.

I don't know that in measles the susceptibility diminishes after childhood, in the same way that it does evidently in scarlet fever, and yet it strikes me that we should keep our children from measles as well as from the other diseases.

And then in regard to official interference. It has been a question with me, or rather it has been a question with the Board of Health in our city, as to whether we should insist upon isolation and disinfection.

If we did so it would increase the work immensely, as there are a great many cases. I think there are a great many more cases than there would be if official interference obtained. It would add very greatly to the work, and the feeling is as a general thing that we had better not interfere with the measles. I would like very much to have an expression of the feeling of the section. I think it would govern me

largely. I think it would aid me very much in my conclusions.

I feel personally as if an interference ought to be made. This afternoon I took occasion to consult the records, thinking perhaps you might be interested to know how many deaths have occurred from measles in the last few years. I went back to 1865, and found 1,117 deaths in these twenty-three years lacking a month. This gives an average of forty-eight deaths per year. Supposing we had forty-eight deaths a year from small-pox, as we used to have. You would criticise me.

In 1883 the Board sent out an order that the cases should be reported; and sent a circular to the parents and the School Board, advising that the children coming from families where there was measles should be taken out of school. In these three and a half years there have been 5,354 cases of measles reported. This is an average of over 1,500 cases per year. I have looked over the per cents., and have found that the per cent. of deaths to the total number of cases was: In 1884, 5.1%; in 1885, 5%; in 1886, 4.5%; in 1887, 5.2%, for the eleven months just past. That is, allowing that we get a report of all the cases, as we do of all the deaths, then the rate of mortality is about five per cent. Of course that is not a heavy per cent. for a contagious disease, but it presents a mortality ranging in sixty-five years from the smallest number, two, to the highest number which is one hundred and fifty-two. I thought these facts might be of interest to the profession, simply to show the number of deaths that are occurring, and the percentage of deaths to the number of cases. And as I said before, I would be very glad to have an expression of the opinion of the profession in regard to the desirability of interfering with the measles officially.

DR. BARNES said: I would like to know if Dr. Durgin has had experience with the effect of disinfection; if any influence is produced?

DR. DURGIN: We have not insisted upon it, although we advise it. We don't follow them up. So far as scarlet fever is concerned, I have had a large experience, with the best results.

DR. H. I. BOWDITCH: Do I understand that any legal measures now are taken? May a person have measles and not do anything about it?

DR. DURGIN: Yes, they must report it. As soon as a case is reported we send a circular to the house, which gives general considerations as to the desirability of isolating the patient, and the general care to be used in preventing the spread of the disease and the consideration for disinfection when the case is over. And we offer to do the disinfecting if they desire it. We don't compel it, because the statute law does not include measles in the list of diseases where the persons are called upon to disinfect.

DR. JAMES AYER: Dr. Hodges' admirable paper shows that he had exceptional advantages, and used them well. He shows that there are dangers in measles, and it is proper to say at the outset to every family in which a case of measles occurs that there is great danger in underrating the importance of the disease. They might laugh at you, but you have done your duty if you say that the case should be isolated as far as possible. The danger lies not only in the disease itself, but the sequella. I think that every case should be reported, and that circulars should be sent to the homes in every case. In my

experience with the epidemics of measles, I have noticed that some other epidemic soon followed. I would like to ask about it.

Dr. HODGES: There was no sickness after the measles had disappeared. The children were all moved, about three weeks after the epidemic to the country, where they remained all summer. While they were still in the city before they were moved to the country, they were all taken away from the home, and the house thoroughly fumigated. Then they were brought back to it. In three weeks time they were all sent to the country, where they stayed until the autumn. Just before their return this autumn, the building was again thoroughly cleansed and fumigated. There has not been any sickness there to speak of since the epidemic. There have been one or two cases of a trifling nature, but no epidemic, or any other disease of a contagious nature.

Dr. E. G. CUTLER: I was greatly interested in hearing what Dr. Hodges had to say. I had an experience also in a public institution, taking in a class of patients quite like those that he speaks of. This happened several years ago. There were, I think, something like seventy-five or more persons in the house. They varied in age from about two and one-half and three up to fifteen or sixteen. Out of that number, first and last, there were forty-five who had the measles. The epidemic was a mild one; it was accompanied by very little fever, and there were none of the severe throat symptoms that the Dr. speaks of. Nor was there any patient who had trouble with the ear. The chief symptom was tremendous coughing, which was quite hard to control at first. The children were isolated. They lived in a house which was not connected with any other, and were kept in isolation for some time.

I could not make out whether all the people in the house who did not have the measles had had the disease before. But I took it for granted that all who did not have it before had it then. It certainly was the case that some of the individuals who were sick had had a disease which corresponds quite closely with measles, even if it was not that.

In these cases it was mild, and they were isolated merely as a precautionary measure. I forget how long the epidemic lasted, but it kept me trotting up there every day for a number of weeks. I thought then that if there had been a law like that which is enacted about scarlet-fever and small-pox, it would have been a good thing. I, for one, would be glad to see the Board of Health have the same power here as in other diseases.

Dr. BOWDITCH: I hope the meeting will not close without our doing something about it. I think we ought to put it in the same list as the scarlet fever. I move that the sense of the meeting is that it should be placed under the care of sanitary officers, as other cases of disease.

Dr. DURGIN: I would like to say for the information of the last two speakers, who perhaps think that the authority is not sufficient now, that the authority now is fully as great concerning measles as it is concerning small-pox. It is simply a question as to whether the Board of Health would be going beyond what would be regarded as prudent, in doing with these diseases as they do with the other contagious diseases; whether we would be going beyond the point of prudence in insisting upon disinfection. It

seems it kills five per cent. We ought to have the power of taking measures to prevent it.

Dr. CUTLER: I would like to ask whether the Board of Health has not the right to take a small-pox patient from anywhere in the city and carry him away to a particular place, and detain him there until he is cured, and whether that same power is extended to these other diseases. I had supposed that it was only small-pox.

Dr. DURGIN: We have the same right in all of these cases. Any one who we should decide has a disease dangerous to the public health we could carry to the hospital. The limitation on each of them is this: We can take them from any house except where, in private families, the attending physician and the Board of Health think that the patient is properly isolated there, or is so ill as to make it impracticable or dangerous to the health of the person to move him. In other cases the Board of Health has the legal right to take the patient away.

But here is the interesting part of the question. The Board of Health has a hospital for small-pox, and we can take all the patients who are likely to come in. But in no other disease have we any hospital under our charge or control in any way. The City Hospital has a little room for contagious diseases, wholly inadequate, and we advise patients to go occasionally, and occasionally get patients to go, but if we are to take hold of diseases like measles, and say that we will carry every one that needs care to a hospital, from defective houses and other places where the liability to spread is very great, we should get blocked in a very few days. But still there is much that we may do by insisting on isolation at home so far as it might be carried, and disinfection when the case is over.

Dr. CUTLER: Disinfection by the Board of Health?

Dr. DURGIN: Yes, sir.

Dr. CUTLER: I should think that would be a very wise proceeding.

Dr. AYER: I am perfectly aware that cases should be reported, but I don't think the sentiment of the profession is so strong in reporting them as in other cases. It is hard to carry out accurately without sentiment to back it. I would like to ask what proportion of cases Dr. Durgin thinks reaches him; if he supposes that he hears of one-half of them?

Dr. DURGIN: That is a very hard question to answer. I fancy there are a great many cases that we don't hear from. There are some cases where no physician is called. They are diagnosed at home. The mother takes charge of measles frequently without calling a physician. In these cases, although the householders are responsible, if the notice is not sent in, yet they don't do it. There are a great many cases that I don't hear from, and these are the cases that spread the disease, as a light case will spread the disease much faster than many of them. No care is taken. The greatest freedom is used in going out and in.

Dr. BARNES: I should feel like supporting Dr. Durgin, but I am not prepared to vote that in all cases where measles occur fumigation should be practised. I am not sufficiently informed to say that it will prevent an epidemic. I would like to know if Dr. Durgin's experience has been such as to prove that fumigation has stopped or prevented the spread of the disease. For myself, I have not the informa-

tion to warrant me in recommending the city to fumigate in every case.

DR. DURGIN: My point is this: I would like to hear the profession talk about this. I would like to know whether I am going too fast or too slow. Do you think that we are doing all that we ought to do? Do you think the public sentiment would bear us out in going farther than we now go?

DR. BOWDITCH: You don't go at all, as I understand it now.

DR. DURGIN: Yes, we call for the report of the cases, and we get them. Then we send these circulars.

DR. BARNES: Can you prevent children from going to the schools?

DR. DURGIN: We cannot, but we have advised the School Board, and they turn them out.

DR. BOWDITCH: My motion is, that it is proper that the sanitary officials of the city should take notice and care of these cases of measles, as well as of other diseases, such as scarlet fever and small-pox. It does not follow that they should pursue the same course of treatment, for they are very different. I see no reasons why measles should be carried off to the hospital. If we had a physician go to the house where there was a case of measles, he could make arrangements for perfect isolation in the house. That would be all that was necessary in that case.

The question is whether we ought to have any official interference in a case of measles. I think we ought to have some. If death sometimes follows, and there is likely to be an epidemic, we ought to have it. I hope the Society will vote this way. I would like to hear the gentleman who read the paper say from his own experience what he thinks the benefit would have been in his cases, if any, supposing there had been any official treatment.

DR. HODGES: I think in this particular case it would have been very hard to isolate the cases, because all the children went to school in the same building in which they lived, and the first set of children that carried the contagion down to the sick room, practically infected all the children that were there. The isolation in this case was complete so far as it went, because there was no necessity for communication with the outside world. The epidemic was confined to the building in which it originated, and did not spread outside.

Another speaker said: In looking over the records in one of the districts of the Boston Dispensary in 1885, there were sixty cases in April; in November, 1886, thirty-four; and in 1887, fifty-one cases to the present date. I think one great failure in figuring on the deaths is that there are so many cases that are not reported. And I think, as my experience of the matter has been, that I have heard of half as many cases as I have seen, where there was no physician, and where they were undoubted cases of measles, and where the physicians have seen the bronchitis following, when they were called in.

I think the disease must be spread largely at the present time in the public schools, through the inability of the teachers to know that there are cases in the families from which their pupils come. I don't think the public would uphold the Board in the matter. I mean the public in general. I think the public would regard it as being a step too far in advance.

DR. MASON: It is a very important and extensive

subject, and perhaps the Society will take it up again. There are no hospitals or places where children with scarlet fever, diphtheria or measles can be sent. Therefore the only possible way of limiting the epidemics must be through the measures of the Board of Health. I am satisfied that this motion is a very important one, and should be passed. As Dr. Bowditch has made it, it stands as follows: *Moved*: That it is proper, in the opinion of this Society, that the Board of Health should take notice of, and care for, cases of measles, as is done in small-pox and scarlet fever. Is that the wording of the motion, Dr. Bowditch?

DR. BOWDITCH: Yes sir. I would put it exactly upon the same ground as small-pox and scarlet fever. I see no reason why we should not pass it. It leaves it to the sanitary authorities to do just what they think proper. It enables them to go with authority to the house, and give their advice, at any rate, and see that the thing is done.

The motion was carried.

DR. MASON: In the opinion of the chairman it would be well to have this whole matter discussed again, not only in reference to measles, but also in respect to the other contagious diseases. The paper of Dr. Hodges is a very important and interesting one.

DR. J. B. GEROULD, of North Attleboro, Mass., presented a case of

OBJECTIVE TINNITUS AURICUM.

The patient, Mr. E., is thirty-two years old, dark complexion, medium height, a little below average weight. Temperament not especially nervous. Occupation, a farmer. Health good but not robust. Had scarlet fever and pneumonia years ago, fifteen to twenty. Had a severe fall twenty-eight years ago. Entirely recovered from all the above. About three years ago had dizziness after working in the hot sun, was troubled more or less for several months, but not lately.

Several years ago had on slight exertion, trembling spells; would last a half-hour or an hour, was only troubled a short time with them; has had some dyspepsia. Has never had any trouble with ears or hearing until about six months ago, July, 1887, at which time he experienced a *ticking* sound in his ear, which has lasted ever since, only relief during sleep, hearing nearly normal. Physical examination shows a normal ear, excepting the above-mentioned ticking, which is not only subjective but is also objective. It is about as loud as the ticking of a watch, and can be heard at a distance of several feet. I could hear it six feet in a room not especially free from outside sounds; it beats about 160 times a minute, it is nearly but not absolutely regular; distinctly heard in both ears.

DR. VICKERY asked for his theory as to the cause of the sound.

DR. GEROULD. I could find very little on the subject, and could find no theory. I would say that the ticking is about 160 times a minute, but varies somewhat. Once in a while it stops for a few minutes, but is generally continuous. The only thing that I could think of was a spasmodic contraction of the small muscles of the ear. In that case, I should think there would be some movement of the diaphragm which could be seen. In the right ear it is a little louder. I could hardly say whether it is synchronous, but should think it probably is.

DR. LANGMAID asked if there was any loss of hearing.

DR. GEROULD replied that there was not.

DR. J. ORNE GREEN said: I don't think the experience of any one has been very large in these cases. The only objective sounds that I know of that are heard in the ear are of two kinds: There are the murmurs which are vascular, which you get in the ear, and of which I have seen two cases—in 1878 and 1879. These are the only two cases that I have ever seen of that kind where there is a distinct murmur, and that is undoubtedly vascular. These two cases I made the subject of a paper read before the American Otological Society.

In the other class of cases, of which this is an instance, where you get a clicking in the ear, which is entirely different from the murmur. I think these are not so rare as the others. I have seen six or eight in all. They vary somewhat in sound, although in all there is a click distinct from the murmur which you get in the other class of cases, and of this click you have two kinds: You have voluntary and involuntary click. I have seen a number of instances of patients who were able to produce this voluntarily.

I have a professional friend in the country, some twenty miles out of Boston, who can do it in the most wonderful way. He could not describe how he did it when I saw him, but it was perfectly evident. He would produce, by the mere effort of the will, a sharper and more distinct click than this. Sometimes it would be most wonderfully rapid, and then he could make it once or twice in a minute. I have seen a number of others who could do it, but not so effectively.

In him I am satisfied that it was a contraction of the muscles, and I think, in all cases, it is a contraction of the muscles. It is a contraction, in the majority of cases, of the tensor palati muscle, or the spheno-staphyloideus, as it is called by the Germans, and sometimes of the tensor tympani, and sometimes of both. In some of the instances, I have been able to confirm this. When this gentleman that I spoke of does it, you can see a distinct twitching of the palate with every sound. In one case, in addition to the palate, there was a distinct moving in of the drum-membrane. There was evidently a contraction of both the tensor palati and the tensor tympani muscles.

There have been a number of involuntary cases, although this case differs a little in the character of the noise. This is a little more prolonged and less clearly defined click than in most cases that I have seen. This may suggest a little flutter in the tensor palati or tensor tympani, or both. In these involuntary cases, I have once or twice been able to confirm the motion of the palate. It is a very slight motion. You see a little drawing up of the palate that is synchronous with the sound that you get in the ear.

They are interesting cases, particularly from their combination, sometimes, of the two muscles; but I think it can be explained by the anatomy, which is a very curious one. The tensor tympani muscle is inserted along the anterior wall of the Eustachian tube, and also somewhat along the membranous wall. The tensor tympani muscle is in the canal in the upper part, and it is an anatomical fact that the fibres of the muscle often run over and unite with the fibres of the tensor palati muscle. It is very commonly the case, and it is also an interesting fact that both of

the muscles get their motor fibres from the otic ganglion.

I think that is an explanation of these cases. Sometimes you get a contraction of one muscle, sometimes of the other, and sometimes of both. The innervation comes from the same ganglion. With regard to what causes it, I don't think it has ever been established. It has been referred to some contraction of the muscles, but I don't see why we should hear the contraction of these muscles, and not of other muscles. I think, in a good many cases, it is due to the anterior wall of the tube, which is moist, being drawn away from the posterior wall of the tube, just as you can make it with the tongue.

That is the character of the noise in the majority of cases. Once in a while, when you get at the same time the contraction of the tensor tympani, every contraction of that muscle draws the membrane inward a little, and that is associated with a little noise. There you may get a little noise from the drawing inward of the drum-membrane, just as a little rattle of parchment. These are the only explanations that I know anything about.

APPOHAQUI MINERAL WATER.

DR. CUTLER stated that his attention had been called to a new mineral water, the Apohaqui, which has the power of making an emulsion with many of the oils, and seemed to be especially useful in the case of cod-liver oil, as it appeared to take away the taste to a great extent, and patients were enabled to take it more readily, and with less of the unpleasant after-taste.

MR. CORNWALL, agent of the company which is introducing the water spoke briefly of its peculiar qualities. It will emulsify most of the oils, but in no case is it a permanent emulsion. He had been assured by chemists that the quality was more than a saponification, and was due to some peculiar power whose nature the analyst could not detect. The water has been in pretty general use in some of the Montreal hospitals for some months, and is employed in most of their emulsions.

DR. H. L. SMITH did not think the emulsion better than might be made with any alkaline water of an equal strength. In his hands a one per cent. solution of sodium carbonate made a much more perfect and lasting emulsion than the water. A one-tenth per cent. solution produced very nearly the same result. Moreover, he had found by experiment that some of the ordinary waters, as the Apollinaris, Friedrichshall, and Hunyadi, had an equal or even better effect when used in the same way, and the slight bitter or saltish taste that some of them had seemed to be useful in covering the taste of the oil.

MR. CORNWALL was glad of a discussion. The water had had a thorough trial clinically, and good effects were reported. It was advertised to the medical public only, and he hoped for a fair trial.

The following emulsions, produced by the "Apohaqui mineral waters," were placed upon the table for the inspection of those present: Cod-liver oil, $\frac{1}{4}$ oil, $\frac{3}{4}$ water; $\frac{1}{2}$ oil, $\frac{1}{2}$ water; $\frac{3}{4}$ oil, $\frac{1}{4}$ water; $\frac{1}{8}$ oil, $\frac{7}{8}$ water. The following in varying proportions: creton, sandalwood, olive, castor, almond (sweet), neat's-foot, linseed and sperm oils; also balsam of copabia, fir.

It was claimed that the emulsions produced were mechanical and not chemical, that they stood in solu-

tion quite long enough for all practical purposes, that they were easily renewed by a slight shaking action, and that they will keep for a great length of time. In the case of cod-liver oil, it renders it both easily taken and retained by the most delicate stomach, and the water is of a character that renders it useful medicinally with the oil, not having any purgative qualities as is the case with other alkaline waters and also being without the disagreeable flavor, besides producing an emulsion much more readily. The water is pure and simple mineral water as taken from the spring.

The meeting adjourned at 10:15 o'clock.

THE NEW YORK ACADEMY OF MEDICINE.

STATED MEETING, January 19, 1888. DR. A. CAILLE read a paper on

A METHOD OF PROPHYLAXIS IN DIPHTHERIA.

He said that in some families one or more of the members, especially among children, had an attack of diphtheria every spring or autumn, and it had occurred to him that in all probability in such cases the microbes of the disease remained permanently in the system, continuing in a dormant condition until some hyperemia of the faucial or nasal mucous membrane afforded an opportunity for the diphtheria to break out afresh. The disease was thus propagated by a process of auto-infection.

In order to make a practical test of the correctness of this hypothesis he selected eight individuals, of different ages, all of whom had had diphtheria at least twice, and some of them a considerable number of times, prior to October 1, 1885. All belonged to families which he had known for a long time, and which had continued to occupy the same place of residence. The first thing that he did was to cause all carious teeth to be filled or extracted. He then directed the mouth to be thoroughly rinsed, the throat to be gargled, and the nose to be cleansed three times a day with either a three cent. solution of potassium permanganate, a weak solution of liquor sodæ chlorinatæ, or a saturated solution of boric acid; the different solutions to be alternated with each other from time to time. In very young children the antiseptic solutions were dropped into the nostrils with a pipette. This practice was maintained throughout the year with the exception of the summer months, during which none of the subjects had ever had diphtheria. In addition to these eight cases, he ordered that from ten to fifteen drops of saturated boric acid solution should be dropped into the nostrils of two infants a year old whenever any catarrhal symptoms manifested themselves.

The result of these precautions was that up to the present time not one of the individuals referred to had had an attack of diphtheria since the system of prophylaxis had been inaugurated; although some of them during the time mentioned had been exposed to the disease by other members of the family having it. While this result did not of course afford absolute proof of the prophylactic power of such a plan of procedure, it did go to show that if the nasal and oral cavities were kept clean by means of antiseptic washes, diphtheria was less liable to occur than if no such precautions were resorted to.

It was a fact that hitherto in diphtheria far less attention had been paid to prevention than to the treatment of the disease after it had made its appearance. One reason why it was difficult to employ an intelligent prophylaxis was because of our ignorance in regard to the nature and significance of so-called diphtheria. Since we could not in many instances distinguish between a contagious and a non-contagious sore throat, the problem presented was a very unsatisfactory one to deal with. There was no specific treatment for diphtheria, and in the present state of our knowledge prophylaxis was of more value to the public at large than treatment. Prophylactic measures could be divided into those relating to general sanitary conditions, and those confined within the family. It was an unfortunate fact that in a large city the great majority of the inhabitants were unable to live in perfectly healthy dwellings, and the great importance of individual prophylaxis was therefore obvious.

Dr. Caille then passed in review a large number of works on Practice and on the Diseases of Children, showing that most of the authors scarcely alluded at all to the subject of prophylaxis in connection with diphtheria, while many of the others dismissed it with a few lines. Among those mentioned as devoting proper attention to the matter were J. Lewis Smith and A. Jacobi, and special reference was made to the monograph by the latter on so-called follicular amygdalitis published in 1886. In speaking of the importance of keeping the upper air passages in good condition, with a view to preventing the occurrence of diphtheria, he quoted one writer as saying that a healthy throat bears the same relation to diphtheria that a healthy stomach does to cholera. In a city with densely populated districts, he went on to say, attention to the plumbing and ventilation of apartments and sanitary conditions in general must be supplemented by individual prophylaxis. The overheating of school-houses and dwellings was a constant source of danger, and isolation of those sick with diphtheria was not, as a rule, effected promptly enough. Enlarged tonsils increased the liability to diphtheria; and these should be removed with the knife, or, better, the galvanic cautery. Carious teeth should be extracted or filled, and he thought that provisions should be made by which the poor could have dental cavities filled with cement or amalgam free of charge or at a merely nominal price. He advised that parents should inspect their children's throats every morning before sending them to school, and that all children should be taught how to gargle at an early age. Children with sore throats, however slight the trouble, should not be allowed to go to school, and kissing children on the lips should be forbidden. Parents should be urged to keep the upper air passages of their children in a healthy condition especially if they were peculiarly susceptible to diphtheria. In young children antiseptic solutions could be dropped into the nostrils twice a day, and oftener if there was any nasal catarrh present.

DISCUSSION.

DR. GEORGE T. HARRISON said that he had had such painful experience in the treatment of diphtheria that he was especially glad to hear something in regard to the prophylaxis of the disease, and he believed that the adoption of such precautionary meas-

ures as had been outlined in the paper would be a step in the right direction. He was also glad, he said, to hear Dr. Caille emphasize the danger connected with the so-called follicular amygdalitis, to which the President of the Academy, Dr. Jacobi, had directed attention, as this was a matter in regard to which the profession, as well as the laity needed to be on their guard.

DR. FRUITNIGHT said that it was a common experience to find that the first case of diphtheria in a family had advanced to a very dangerous degree before the medical attendant was called in, and, consequently, was very likely to prove fatal. It was also noticeable that afterwards in such families the parents themselves often instituted a system of prophylactic measures, making it a daily practice to examine the children's throats, etc.

DR. S. BARUCH said that he should think that the daily washing out of the nose by the insufflation of antiseptic solutions or otherwise was a very dangerous practice, on account of the liability to excite serious ear-trouble, especially if the fluid used was cold.

DR. T. R. POOLEY said that if the nasal douche were avoided, and warm fluids were used in the form of spray, or by dropping into the nostrils, he did not think there was much risk of causing disease of the middle ear. The safest and best method of washing out the nose was by means of the post-nasal syringe, which could be used with great facility after a little practice.

DR. CAILLE explained that he did not recommend the employment of cold liquids.

DR. SEIBERT said that he should like to add a word on the subject of prophylaxis by way of supplement to the excellent suggestions of Dr. Caille, and that was in regard to the importance of keeping children's stomachs in good order, so that the mouth and tongue would be clean. In his experience a furred tongue was always a hot-bed for the development of diphtheritic trouble, and he thought that the candy-shops in the vicinity of the public schools were responsible for a good deal of the diphtheria now so prevalent. These remarks, he said, were prompted to a considerable extent by his experience in the case of his own children.

THE PRESIDENT, DR. JACOBI, said that if he understood the reader of the paper rightly, he held that when a patient has once had diphtheria the germs of the disease are likely to remain secreted in the mucous membrane and lymphatic glands, and he quite agreed with Dr. Caille in this opinion. Many of the cases of diphtheria of the greatest severity are those in which there was immense glandular swelling, with œdema. Such cases were very likely to prove fatal, but if the patient recovered the improvement dated from the time when these symptoms first began to diminish. He felt sure, therefore, that diphtheritic germs were liable to remain in the lymphatics.

If, as had been remarked, the mouth and nose were in a healthy condition, diphtheria was always less liable to occur; while if an epidemic of the disease appeared in a neighborhood the children living there who had a catarrh were especially liable to be attacked. Diphtheria was like erysipelas in this respect. When there was an epidemic of the latter disease in any locality, the slightest scratch was likely to induce an attack of it, while those who were free from any sore or abrasion of the surface escaped.

There was another way in which diphtheria occurred, and in connection with this there was a point of great practical value in its prevention, to which he desired to call attention. It had often been noticed that cases in which it was thought that the attack was about over had a relapse, and in some instances there would be three or four attacks in rapid succession. The reason for this was simply because the room, the bed, the curtains, the carpets had become infected; and he had therefore, made it a rule, wherever this was practicable, to change the room of the patient every two or three days, even if the room to which the removal was made was not as desirable as the one first occupied. In some cases he had found it necessary to have the patient taken out of the house altogether.

DR. L. EMMETT HOLT said that he should like to ask, for information, whether there were any sufficient data to show that children with enlarged tonsils were more subject to diphtheria than others.

DR. CAILLE said that his own experience went to show that such children were more liable than others to be attacked, but he believed that as a rule in such cases the disease was of a comparatively mild form.

THE PRESIDENT said that the reason why the tonsils were so frequently the primary seat of diphtheria was because they stood so much in the way of the air-current; so that deposits were extremely liable to take place on them. Again, whenever the tonsils were enlarged there was a liability of mucus accumulating behind them. Enlarged tonsils were usually combined with a sub-acute or chronic nasal catarrh or pharyngitis, and the sooner, therefore, the tonsils are reduced and the pharyngitis removed, the better would be the prospect of the child's escaping diphtheria.

DR. JOSEPH W. WINTERS said that when diphtheria appeared in a family, in addition to enforcing strict isolation, and attending to disinfection and the general sanitary condition of the premises, he inspected the throat of every member of the household daily, and, if there were children, ordered them to take full doses of tincture of chloride of iron (say twenty or more drops, three times a day), and tonic doses of quinine. At the same time, he directed that they should be kept in the open air as much as possible, should sleep in rooms free from pipes connecting with sewers, and be given simple diet, while their digestive organs were maintained in good condition. To this end he usually ordered small doses of mercury as a purgative, two or three times a week. When adopting these precautions, he rarely saw two cases of diphtheria occurring in the same family.

DR. T. R. POOLEY then read a paper on

THE INDUCTION OF PREMATURE LABOR IN AMAUROSIS AND AMBLYOPIA FROM ALBUMINURIA OF PREGNANCY.

He said that disorders of vision associated with pregnancy had not received the attention which, from their importance, they deserved. Such disorders were more apt to occur in the later months of utero-gestation, and the sight was sometimes permanently lost. Vision might be affected in two ways: *first*, a sudden amaurosis; and, *second*, a gradual impairment, but not complete loss of sight. Like kidney disease, these disorders of vision in pregnancy had been long

known, but not until recently had it been proposed to induce premature delivery for sight alone. As to the propriety of this procedure, and the indications for its adoption, these could best be settled by the coöperation of both obstetricians and ophthalmologists.

The honor of first proposing the induction of premature labor in these cases belonged to Dr. E. G. Loring, of New York, who, in 1883, published the history of a case in which premature labor was brought on for atrophy of the optic nerve depending, apparently, on rapidly recurring pregnancies. The patient was thirty-five years of age at the time, and she was already blind in one eye. Fearing the loss of the other eye also, he proposed the operation. In this case, the usual symptoms of disease of the kidney were entirely wanting; but Dr. Pooley thought it possible that the eye trouble was really dependent on nremia, as there was no reason why optic neuritis should not occur from obscure renal disease.

Having referred to cases reported by Lee and Eastlake, of England, Holmes, of Chicago, O. W. Moore, Arango, and Callan, of New York, and himself, he went on to say that if the patient were allowed to go to full term, permanent blindness or serious impairment of vision might result; while, if premature labor were induced, or took place spontaneously, improvement always followed, and in some instances the sight was entirely restored. In many cases of the neuro-retinitis of Bright's disease, it seemed as though nature attempted to relieve the patient by bringing on premature labor; but when this did not take place spontaneously, the artificial induction was justifiable, and even demanded.

Having quoted Dr. Loring on the medico-legal aspects of the operation, Dr. Pooley gave his conclusions as follows:

First. In all cases of pregnancy, not only should examinations of the urine be systematically made, but the eyes should be examined with the ophthalmoscope, since in a large proportion of cases where eye troubles exist the patients make no complaint of disorders of vision. Frequently, such troubles can be detected with the ophthalmoscope long before any disease of the kidney is shown in the urine.

Second. In uræmic amaurosis without changes in the eye visible to the ophthalmoscope, even should the usual accompanying symptoms, such as dizziness, nausea, and threatened convulsions, be absent, their supervention is soon to be anticipated; and the immediate induction of premature labor is indicated, without waiting until the life, as well as the sight, of the patient is in danger.

Third. In neuro-retinitis the induction of premature labor is not only justifiable, but urgently demanded. In some instances it is called for even in the earlier months of pregnancy.

Fourth. It is required in cases of eye trouble recurring in successive pregnancies, like Loring's.

Fifth. A woman having once suffered in this way during pregnancy, the relationship of cause and effect should be fully explained both to herself and her husband.

DISCUSSION.

DR. E. G. LORING spoke of the necessity of early ophthalmoscopic examination in all cases of pregnancy, and said that it was a very simple thing, which every practitioner could readily become familiar with, to

detect the retinitis of Bright's disease. Statistics showed the very great frequency with which the retina was affected in pregnancy, and it was important that the trouble should be promptly recognized. This inflammation might begin very early in gestation, while disease of the nerve might not occur until months after labor at term. He then spoke of a very peculiar condition, not associated with *retinitis albuminurica*, which originated not from pregnancy, but from uterine disturbances. Thus, a girl of eighteen was found to be losing the sight of one eye, and an examination revealed the presence of atrophy of the optic nerve on that side. As she was suffering from amenorrhœa, every effort was made to restore the menses, and the measures adopted proved successful. One year later the other eye became affected, and an examination now showed nearly complete atrophy of the optic nerve on one side, with retino-neuritis on the other. Menstruation, which had again ceased, was once more restored, and afterwards she was married and had a child. After she had been nursing the infant for about three months, she began to have trouble again in the sound eye. She was advised to wean the child at once, and when she had done so the menses returned. This patient was now pregnant again.

DR. BARUCH said that he was in accord with Drs. Pooley and Loring, in regard to the propriety of inducing premature labor in the class of cases referred to. Life was as much in danger as the sight, and therefore he thought the necessity for it was perfectly evident. The disorder of vision was a danger-signal which warned the practitioner not to neglect even small symptoms. If amaurosis or amblyopia were present, the condition depended on nephritis, and there were, therefore, many reasons why the pregnancy should be prematurely terminated.

DR. MURRAY thought that all the deductions of the paper were hardly justified by the facts of the case, so far as known; since a very small proportion of even those who suffered from eclampsia, became blind. It seemed to him unnecessary to subject all pregnant women, whether they complained of any disorder of vision or not, to the inconvenience of an ophthalmoscopic examination.

DR. HARRISON said that the paper served to illustrate the close relationship existing between widely different specialties, and that he had been convinced by it that obstetricians should pay more attention to the vision in pregnant women than had hitherto been the case. In practice it was important to make a distinction between *nephritis gravidarum* and *nephritis in gravitate*; the first being a form of disease in which the anatomical and functional disturbances of the kidneys are evolved by the state of pregnancy, while the latter is an interstitial or parenchymatous nephritis, which either existed previous to conception, or has been produced by causes other than pregnancy during the course of the gestation, and in which abortion or premature labor is apt to occur spontaneously. It was evident from what had been said this evening that the ophthalmologist was able to throw considerable light on this subject.

In closing the discussion, Dr. Pooley said he had already written a paper on the subject of eye-disease dependent on uterine disturbances, alluded to by Dr. Loring, in which he had reported some cases observed by himself, and that he had therefore not referred to that subject in his present paper.

Recent Literature.

L'Iodisme. Par ELISABETH N. BRADLEY, Docteur en Médecine de la Faculté de Paris, Membre de la Société Zoologique de Paris. Paris, 1887. pp. 168.

In the preparation of this thesis Dr. Bradley has been an indefatigable collector of the observations of others, a sketch in brief or in detail of one hundred and twenty-six cases being given by her illustrative of disturbances, supposed to be produced upon human tissues by the external or internal use of iodine, iodides, or iodoform.

References are also made in the bibliographical index to articles bearing upon the subject, by three hundred and forty observers. The abundant material thus collected has been systematically arranged under the following divisions. The absorption of iodine by the various tissues of the body; its toxic effects; its action upon the blood, the circulatory, respiratory, digestive, and nervous systems; its effect upon the urine, the skin, and the eyes; and the subjective symptoms caused by it. Dr. Bradley makes no claim to personal experience with her subject, and it may be fairly stated that she has not sufficiently weighed the relative value of the vast bulk of evidence presented in support of some of the conclusions she presents. In many instances cited it might be held that symptoms adduced by observers as caused by iodine, were incident to the disease for which the drug was administered. Her conclusions are as follows:

(1) Iodine is absorbed by the skin, the mucous and serous membranes. It is transported throughout the body by the circulation, and is eliminated by all the glands.

(2) The various preparations of iodine are not absorbed by the skin, the mucous and serous membranes while intact, before undergoing a decomposition by which the iodine is set free.

(3) In certain conditions of loss of vitality, and particularly in case of cardiac and renal affections, where there is morbid nervous irritability, there may be an increase of the physiological phenomena produced by the iodine, with symptoms of poisoning.

(4) Symptoms of poisoning by iodine indicate a disturbance of all the functions of the organism, with a predominance in its most feeble points. They may follow its long-continued use, or show themselves at the beginning of treatment. In either case they may disclose themselves suddenly, or develop gradually.

(5) Among the most constant symptoms of poisoning is an excessive quickening of the pulse, which likewise becomes feeble, dwindling beneath the finger and even disappearing in grave cases.

(6) This state of the pulse is not accompanied by a parallel elevation of temperature, which may remain normal, or even fall below the normal.

(7) This lack of parallelism between the pulse and the temperature may be explained by the disordered state of the nerve centres.

(8) The disturbances of circulation are also shown by œdema, which may be confined to the eyelids in mild cases, or extend over the whole body in grave cases, as well as to the glottis, lungs and brain.

(9) The blood is altered in character, and hæmatis does not take place in natural ways.

(10) The disturbances of circulation are followed by changes in the quantity and quality of the urine.

There are often albuminuria, nephritis, and even hæmaturia. These symptoms are preceded by a diminution in the amount of urine, or anuria even.

(11) The nervous symptoms are those which belong in common to anæmia and to cerebral congestion, and assume sometimes the form of uræmic convulsions and coma, and sometimes that of hypochondria and general paralysis.

(12) The lungs share in the general disturbance, and in addition to symptoms resulting more or less directly from the derangements of circulation, such as bronchitis, œdema, hæmoptysis, etc., dyspnoea, irregular respiration, and apnoea often occur.

(13) The disturbances of the nervous system are manifested by anorexia, morbid appetite, nausea, vomiting, gastric and intestinal pains, diarrhoea or constipation.

(14) The nutrition of the skin is impaired. Capillary spasm is followed by passive dilatation. It becomes the seat of various forms of eruption, erythema, urticaria, papular-bullous efflorescences, and hæmorrhagic lesions.

(15) The joints may be affected, becoming painful and swollen.

The work may be regarded as a valuable repository of observations in relation to one of the most important and most greatly abused drugs of the materia medica.

Photographic Illustrations of the Anatomy of the Human Ear together with Pathological Conditions of the Drum-Membrane. By B. ALEXANDER RANDALL, A.M., M.D., and HENRY LEE MORSE, B.A., M.D. Philadelphia: P. Blakiston, Son & Co. 1887.

This atlas, which may be said to be a continuation and extension of a method of illustration introduced by Rüdinger, in his famous "Atlas of the Human Ear," published in Munich in 1866, consists of thirty-nine photographs of the osseous anatomy, twenty-three of preparations of the drum-membrane, and twelve of microscopic sections, together with a descriptive text. The subjects, both of normal and pathological anatomy are well chosen, and the photographs themselves are beautiful reproductions of objects which are by no means well adapted to photography, but which have, by a careful illumination, been, in most cases, brought out most distinctly. The absence of all retouching assures absolute accuracy and the anatomical names directly upon the plates, make ready reference easy. Some of the photographs of pathological conditions of the drum-membrane show very finely a very successful treatment of a difficult subject.

The text is succinct but very accurate, and all sufficient for description.

With Hinton's atlas of water-colors done by hand, of the drum-membrane in health and disease, Rüdinger's atlas of the normal anatomy, and this new work, each supplementing the other, the teacher is supplied with a series of illustrations invaluable in his work of demonstrating; and the student or practitioner is afforded a collection of pictures, clear and very useful for reference, such as are not surpassed by illustrations of any region of anatomy.

— The University of Bologna has issued invitations to her sister, or perhaps we should rather say, daughter universities, to attend the celebration on the 12th of June next, of her *eighth century*.

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94 BOYLSTON STREET, BOSTON, MASS.

THE COLD-BATH TREATMENT OF FEVERS.

THE modern use of cold applications in exanthematous and continued fevers may almost be said to date from Currie, who made a specialty of this treatment toward the close of the last century. Currie preferred cold affusions to cold baths. Then came Giannini, of Milan, about the beginning of this century, who employed cold baths, defended his practice on scientific grounds, and was the real founder of Brand's method. In 1812, Récamier, in the Hôtel Dieu, Paris, treated typhoid fever by cold baths; patients were kept fifteen minutes at a time in a bath of 68° to 70° F., and were given two or three baths a day. In 1822, Fröhlich, in Germany, published a prize treatise on the treatment of acute febrile affections by cold water. He reported a number of successful cases, and claimed superior efficacy for this mode of treatment. About the year 1843, we find Scontteten and the physicians of the Faculty of Strasbourg employing the hydrotherapeutic procedures of Priessnitz in typhoid fever; and, a few years later, Jacquez, of Lure, and Leroy, of Bethune, published valuable monographs on the refrigerant treatment of fevers.

The first work of Brand, who is distinguished by the precision and rigorosity with which he has conducted the hydrotherapeutic management of fevers, and whose name is now everywhere connected with this mode of treatment, was published in 1861; and since that date, a succession of treatises from the same hand, from 1861 to 1877, have appeared on this subject. This method soon became generally adopted throughout Germany, where it was advocated by Liebermeister and other of the leading medical authorities of that empire. It was introduced into France by Glénard about the year 1871, and has been the dominant therapeutic system at the hospitals of Lyons, although not adopted to any extent in the other French hospitals. It need hardly be said that the cold-water treatment of fevers has never become popular in this country or in England.

At the onset of his clinical experimentation, Brand made use of affusions and of the partial half-bath of

Priessnitz; in his later publications he abandons all these hydrotherapeutic procedures, and replaces them by the cold bath. The temperature of the patient is taken every three hours, night and day, and, whenever it is found to be above 103° F., the patient is plunged into a cold bath. Brand has claimed for this method, when carried out in all its rigorosity, and from the very inception of the fever, extraordinary results.

At the close of a series of "conférences" on "hydrotherapy" in recent numbers of the *Bulletin Général de Thérapeutique*, and *Therapeutic Gazette*, Du Jardin-Beaumetz, to whom we are indebted for the above concise summary of facts, takes up the cold water treatment of fevers. The fact of a physiological depression of temperature, amounting to several degrees, under the influence of cold baths is unquestionable; the main question, however, according to Beaumetz, is whether this artificial bringing down of the fever heat does any good or not. This inquiry must be answered in the negative if it shall be found, on careful experimentation, that the production of heat in the organism is increased, rather than diminished, by the cold baths. It seems to have been sufficiently demonstrated that the danger from hyperthermia results not so much from the elevation of the temperature itself, as from the exaggerated activity of the phenomena of organic combustion which produce this hyperthermia, and that the real indication is to combat this excessive thermogenesis. Whether cold baths fulfil this indication or not, must be determined by experimentation.

Within the past few years, careful series of experiments have been made by Frédéricq, of Liège, and by Quinquand, of Paris, which seem definitely to have settled the dispute. Frédéricq made use of the well-known apparatus of Regnault and Reiset, devised for the study of the gases of respiration. He modified the apparatus so as to make it applicable to man, in order to show that cold, "when acting on the cutaneous surface of the human subject, markedly augments the absorption of oxygen and the production of carbonic acid, and, consequently, the production of heat." Frédéricq concludes that, far from slowing the interstitial combustions, cold powerfully excites them.

Quinquand, by very careful experiments made on animals, confirms the conclusions at which Frédéricq had arrived by his experiments on man. He also states that, under the influence of cold baths, both the absorption of oxygen and the elimination of carbonic acid are markedly increased. Then, taking up the study of the influence of cold baths on the elementary nutrition by the aid of the simultaneous analysis of the gases of the arterial and venous blood of the peripheral circulation and of the right heart, Quinquand finds that cold baths augment the activity of the interstitial combustions. Completing his researches by calorimetric studies, he has, lastly, shown that the heat-units emitted in a given time increase under the influence of cold baths.

"These accurate experiments," says Beaumetz,

"ought henceforth to settle this question; and we are now warranted in affirming, as a physiological truth, that under the influence of cold baths the organic combustions are enhanced, on condition, always, that the refrigeration shall not exceed certain limits, and shall not reduce the rectal temperature of the subject under experimentation below 86° F."

It would seem, then, that apart from the tonic effects of the baths (which are doubtless considerable) but a sorry benefit can be derived from a mode of treatment which increases the combustions of the economy. This it is which explains the superior efficacy of antithermic medicines, such as acetanilide and antipyrine, which in some yet unknown way restrain thermogenesis. A ten-grain dose of antipyrine or half the quantity of antifebrine, given to an adult patient, and repeated every hour till the usual physiological effects are obtained, will bring down the pyrexical temperature quite as certainly as a cold bath, and with greater safety, comfort and benefit to the patient.

TARIFF REFORM AND THE DOCTOR.

THE subject of taxes on imports has gained such political significance of late, that doubtless most of those who read the above title will feel some mild impatience that a journal devoted to professional subjects should dare mention anything connected with "politics." But the Georgia Medical Society has boldly taken the matter in hand, and, through its corresponding secretary, makes an appeal to the medical journals of the country to use their influence in support of the movement to remove the import duties from all medical and surgical instruments and appliances, and the circular contains the following "statement of facts":

(1) Physicians are at the mercy of instrument makers in regard to price, make and quality of finish, because of the lack of sufficient competition.

(2) The price of instruments made in this country, is out of proportion to that paid for similar instruments on the Continent of Europe.

(3) Surgical instruments and appliances are so costly that but few doctors entering the profession can provide themselves with an outfit adequate to carry on a general practice. At present prices it is impossible for a country physician's income to sustain his investing in costly instruments and as a result many simple cases, such as retention of urine, foreign bodies in nose or throat, deep-seated abscesses, etc., all of which could be relieved at once with the proper instruments, must either die from the immediate cause or from the effects of time lost in seeking skillful manipulation, or else they are frequently crippled and disfigured, because the most intelligent help though patiently given is itself crippled for want of proper instruments.

(4) The cheaper grades of instruments are either antiquated or so poorly made that they may prove a cause of failure in operations, sapping as it were, the natural inclinations to surgery in its inception.

(5) European instruments are from twenty-five to seventy-five per cent. cheaper than ours and their introduction into the market will enable the mass of doctors to buy those of prime necessity, will bring down the price of home-made appliances and oblige the makers to use good material and put a better finish to the work.

(6) The removal of import duties on surgical and other instruments used by the profession and on medicines in general, will produce the same results as we all know it did on the article of quinine.

It certainly seems a little curious that a profession, which maintains as emphatically as does ours, that no invention intended for use by the profession shall be patented by any member of it—thus making the humanitarian side of the profession paramount to the commercial—should be deliberately hampered by the Government in procuring, wherever it may, the instruments valuable in treating the sick.

At the present moment, the young physician who desires to send home to one of his seniors the latest English book on a subject in which he is interested, obliges the receiver to visit the Custom House and contribute to the public revenue before he can give his patients the advantage of the wisdom which the book is supposed to contain. And the public-spirited individual who imports certain instruments impossible to be obtained in this country—instruments for which the demand is so small that the unrestricted patronage of the world can scarcely prove remunerative to the manufacturer—is mulcted by Uncle Sam of a sum which nearly doubles the original cost.

The results of any change in the tariff we do not pretend to definitely predict. If, as the Georgia Society's circular intimates, the abolition of the impost on surgical instruments would do away with untrustworthy instruments, the change would be a welcome one indeed, but the Georgia Society might be supposed from its manifesto, to hold the idea that all foreign surgical instruments are good. It is to be feared that one effect would be to flood the country with still more unreliable instruments of cheap foreign manufacture. Such a reform in the tariff would undoubtedly cause some changes in the details of the business of instrument makers and dealers. Our faith in the skill of our surgical instrument-makers is sufficient to make us feel that they would, on the whole, suffer no detriment. It might prove cheaper to import certain articles than to manufacture, exactly as certain instruments like scissors are largely imported now, but the general demand will be for instruments differing in some little particular from the European models—a demand which only home manufacturers can supply.

No one can estimate the good to be gained by such freedom from hampering restrictions as the Georgia Society advocates. Anything that benefits the profession ought to benefit the public, and we trust we shall soon see not only surgical instruments, but medical books, and, perhaps, certain utensils used in chemical manipulations and not manufactured in this country, admitted free of all duty. The tariff is undoubtedly in many ways a very great nuisance, and in some a great injury to the country.

THE BENEFITS OF HYPNOTISM IN HYSTERIA.

FROM the article of Gilles de la Tourette in the February *North American Review*, an article which "has been read and approved by Professor Charcot," we learn that hypnotism is turned to great account at

the Salpêtrière, in the treatment of hysteria. "For ten years and more," says this writer, "it has been found at this Infirmary that the hypnotizing séances, oft repeated and methodically conducted, have in hysterical patients much diminished the frequency of the attacks." To prevent a threatened attack of hysteria the physicians of the Salpêtrière, it seems, often put women into the lethargic state and allow them to remain in this state upwards of twelve hours, it being better to put an hysterical patient asleep than to allow a paroxysm to come on with all its unpleasant consequences. When the hysterical patient is awakened after a certain time, she will have escaped the convulsions.

"Again," continues this writer, "it is known that an hysterical seizure sometimes leaves behind, after it has passed away, certain complications that may become permanent affections, of the nature of contractures or paralysis. Even when these complications exist, nay, especially where they exist, hypnotization may have the happiest effects. By calling into action the neuro-muscular-super-excitability, the lethargic patient is relieved of the contractures through excitation of the antagonist muscles. Finally, suggestion is of great avail in the special type of paralysis studied by Dr. Russel Reynolds. Suggestion may be effective even where the paralysis has continued for some time, and we have successfully treated cases of more than one year's standing."

This writer affirms hypnotism to be an agent which may do much harm, that it is not to be trifled with, that in persons predisposed to hysteria it may develop that disorder, and that it "properly belongs to the domain" of medicine, out of which it should never be taken. He has nothing but condemnation for those mountebanks "who knowing nothing of medical science, go about magnetizing persons either so regardless of their own health, or so ignorant of the danger, as to submit to such practices." It is by such exhibitions, which are largely fraud and humbug, that the general public, and even the medical profession in this country, have been chiefly indoctrinated into the mysteries of hypnotism, concerning which the average physician manifests much scepticism and little interest, while, at the same time, wondering at the therapeutic results claimed for hypnotism by his confrères the other side of the water.

MEDICAL NOTES.

—Don Raphaël Alcáde y Buril has been appointed dentist to his august Majesty the king of Spain. Salary, per annum, \$500; duties, to inspect weekly the royal teeth, to clean and fill when necessary. The royal teeth are not at present *in esse*, but *in futuro*. Their owner, however, must now be nearing the period of his first dentition.

—*A propos* of mental automatism it is related of the late Mr. Chippendale that, when in his eightieth year, he played the part of old Hardcastle in "She Stoops to Conquer" at Edinburgh, and in the very

best manner, while his mind was so affected that, as was subsequently learned, he was not even conscious of where he was playing. His hundreds of performances of the part had rendered him a perfect automaton in its representation.

—The Maharajah of Darbhanga, in Bengal, has established a hospital and dispensary for female patients near his ancestral seat in the district of Darbhanga, Behar, and is erecting new quarters for its accommodation, at a cost of 55,000 rupees, in connection with Lady Dufferin's Medical Aid for Women fund.

BOSTON AND NEW ENGLAND.

—A correspondent (whose sex may be conjectured as possibly female) writes to the daily press in criticism of the fact that the trustees and the visiting and house staff of the Boston Lying-in Hospital are all males. She concludes with the following suggestion, whose carrying out would involve not only important architectural alterations in the lying-in room, but some modifications in the natural course of labor, in order that "all competent women physicians" should either simultaneously or consecutively attend the patients. "The trustees of the Lying-in Hospital should see to it," says the correspondent, "that all competent women physicians are admitted to the care and treatment of the unfortunate women whom stress of circumstances drives to this temporary shelter."

—Mrs. Ellen Spellman, probably the oldest person in New Hampshire, died in Concord, Saturday night, aged 104 years. She was a native of Ireland, and came to this country twenty-five years ago, since which time she has lived in Concord. Mrs. Spellman always enjoyed excellent health, never having any serious illness until about a month since. When 102 years of age, she walked a distance of four miles.

NEW YORK.

—The building of the new Croton Aqueduct was attended, during the year 1887, with 64 serious accidents to workmen along the line, 27 of which resulted in death, and 37 in serious injury. From the beginning of the work to January 1st of this year, 86 men have been killed, and 144 seriously injured, making a total to the date mentioned of 230 serious accidents.

—January 27th, the reported receipts of the Hospital Saturday and Sunday Collection amounted to \$46,868.

—Mr. Elbridge T. Gerry, who attended the hanging of Daniel Driscoll, a murderer, at the Tombs Prison, January 23d, as a member of the Commission appointed by the Legislature to report on the most humane and practical method of executing criminals, is said to have remarked concerning it, that if all public executions were conducted as skillfully, decently, and quickly as this one, there would undoubtedly be less objection to the present system than now exists. In this instance death was instantaneous, the man's

neck being broken, and only ten minutes elapsed from the time he entered the prison-yard where the gallows was situated until his body was lowered for the attending physicians to make their examination.

—The Sanitary Aid Society held its annual meeting January 23d, when it was reported that since the establishment of its lodging-house in Dover Street, two and a half years ago, over seventy thousand lodgings, at ten cents each, had been given. The place is self-sustaining, and is not adequate to accommodate half the applicants who come to it, so that the Society decided to establish another lodging-house, probably in the Bowery.

—During the past two months there have been a considerable number of cases of small-pox in Brooklyn, and the health authorities have been thought by some to be negligent of their duty under the circumstances, especially as regards cases in lodging-houses. The Department claims, however, that it has employed all the agencies at its command for the suppression of the disease, and that the outbreak is diminishing.

—At Utica, there has recently died, on the second anniversary of the death of a maiden sister, at the age of ninety-nine, Mrs. Anna Parmlee, who is said to have been born in Vermont, April 29, 1784.

—Mayor Hewitt has just transmitted his annual message to the Board of Aldermen, and, in referring in it to the Department of Charities and Correction, he states that while the investigation of the State Board of Charities served to show that the alleged abuses in it had been greatly exaggerated, it was made equally clear that abuses did exist which needed prompt relief. The over-crowding of insane patients was to some extent relieved by the immediate leasing from the Commissioners of Emigration of some unoccupied buildings on Ward's Island. An appropriation was also made for the beginning of operations on the farm of 1,000 acres which had been purchased at Islip, Long Island, for the accommodation of the milder cases of insanity. Having mentioned that the Board of Estimate and Apportionment have increased the usual appropriation, in order to meet the requirements specified by the State Board of Charities, he goes on to say that benevolent and intelligent persons have urged that there ought to be made a complete separation between the criminals, the paupers, the sick, the insane, and the children; and that instead of one management for all of these classes, there should be, at least, four boards of administration, each charged with the care of a single class, while the various classes should be located in different places, so that there might be no possibility of intercourse between them. At present, Mr. Hewitt does not think that the city authorities are prepared for the radical changes thus recommended, but, the advice and criticism of consulting boards of visitors being always advantageous and most desirable, he suggests that advisory committees of benevolent men and women be secured to cooperate with the present Com-

missioners in framing suitable rules, and in keeping institutions in the best possible condition. As matters now stand, therefore, he thinks it will be best for the Mayor to appoint such voluntary advisory committees, one for each of the several classes specified, to inspect the institutions at stated intervals, and to give to the Commissioners the benefit of their observations and counsel. After the effect of the increased expenditures now authorized has been felt, and the experience of the advisory committees for the coming year ascertained, he thinks it will be possible to mature measures looking to the best arrangements for the general good, and he does not doubt that very great improvements will result from the careful study of the problem by the competent citizens whose services he hopes to enlist in this benevolent work.

Miscellany.

STATIC EQUILIBRIUM.

As the result of experiments on 150 healthy adult males between the ages of 20 and 40, Drs. William N. Bullard and E. G. Brackett find the amount of motion of the head during the space of one minute, while the subject is standing erect and unsupported, to be as follows:

Antero-posterior motion, with the eyes open: Average, 3.826 cm.; greatest in any case, 9.2 cm.; least, 0.8 cm.

Antero-posterior motion, with the eyes shut: Average, 3.475 cm.; greatest in any case, 8.9 cm.; least, 1.2 cm.

Lateral motion, with eyes open: Average, 1.951 cm.; greatest in any case, 5.4 cm.; least, 0.6 cm.

Lateral motion, with eyes closed: Average, 1.963 cm.; greatest, 6.8 cm.; least, 0.4 cm.

A paper giving a full account of these important experiments will, we understand, be published shortly.

DEATH RATES IN PROVIDENCE, R. I.

ACCORDING to the report for December issued from the City Registrar's office of Providence, R. I., the number of deaths in that city in each of the last three months of each of the last five years, and the total mortality for each year, was as follows:

	1887	1886	1885	1884	1883
October . . .	244	217	156	205	195
November . . .	191	156	162	203	165
December . . .	237	167	161	195	184
—	—	—	—	—	—
Last three months . . .	672	560	479	603	544
Whole Year . . .	2,610	2,335	2,164	2,333	2,328

The number of deaths in 1887 was greater than in 1886 in every month of the year except in August. In 1887 the number of deaths exceeded 200 in every month except February, June and November. The number of deaths in 1887 was 255 greater than in 1886, and 446 greater than in 1885.

The following table shows the number of deaths, and the annual rate of mortality in Providence, in each month of each of the last two years, calling the population 120,000 in 1886, and 121,500 in 1887.

	1887		1886	
	Deaths.	Rate.	Deaths.	Rate.
January	216	21.33	183	18.50
February	189	19.65	171	17.40
March	216	21.33	215	21.50
First three months	631	20.77	574	19.12
April	215	21.23	190	19.00
May	208	20.54	168	16.80
June	170	16.79	163	16.50
Second three months	693	19.52	623	17.43
First six months	1,224	20.15	1,007	18.28
July	232	22.91	222	22.20
August	226	22.28	268	26.80
September	226	22.32	208	20.80
Third three months	714	23.60	608	23.27
First nine months	1,938	21.37	1,795	19.94
October	241	24.10	217	21.70
November	191	18.86	156	15.60
December	237	23.31	187	18.70
Fourth three months	672	22.12	560	22.12
Whole year	2,610	21.48	2,355	19.62

ECHINOCOCCUS OF THE UTERUS.

At a recent meeting of the Royal Society of Physicians of Budapesth, as we learn from the Vienna correspondent of the *Medical Press and Circular*, Primarius Dr. Elischer demonstrated an interesting case of echinococcus of the uterus. The woman, aged twenty-five, had twice aborted during the last three months; she menstruated very irregularly, which she was disposed to ascribe to an abdominal tumor, from which she had been suffering for the past two years. On admission into the Elizabeth Hospital, on June 1, 1887, metrorrhagia and the above-mentioned tumor were found, and an enlargement of the uterus was noticed to so unusual an extent that the possibility of pregnancy could not be excluded. The patient, indeed, aborted, after five days, with an embryo three weeks old. The course of the whole process was quite favorable, and the patient returned to her home.

On the 21st of August she came again, as the tumor had grown, and caused her great pain. A nodular tumor of the size of the head of a fœtus, which derived its origin from the posterior surface of the uterus, was diagnosed (fibro-myoma), and laparotomy was performed on the 25th of August. After opening the abdominal cavity, a solid tumor of the size of the head of a fœtus, with two knobs, which adhered by means of false membranes to the uterus, was detected. Moreover, several adhesions of the tumor with the bladder, the intestines, and the ligaments of the oviducts were present. After a piece of the epiploon which covered the tumor was removed, Dr. Elischer tried to detach the swelling; this was not, however, possible, owing to the numerous adhesions. To diminish the size of the tumor, puncture was tried, and a clear fluid containing 320 echinococcus-cysts discharged. The operator had to desist from the detachment of the mother-cyst, as the attempts which had been made gave rise to considerable hæmorrhage of the parenchyma of the uterus. Owing to this condition, the cyst was attached to the abdominal walls, and the cavity was drained. The abdominal wound was closed in the same way, as in case of myotomy. The course of the patient after the operation was excellent. By means of daily washings, several daughter-cysts, and at last, also the mother-cyst, could be removed. Fever did not occur until the suturing-canals of the silk threads began to suppurate. The cystic

cavity was closed, except for a small space, through which only the smallest-sized drainage-tube might be introduced.

Dr. Elischer remarked, with reference to this case, that the occurrence of echinococcus cysts in the genital organs was very rare; so far as he was acquainted with the literature of the subject, no case of echinococcus of the uterus was hitherto on record. The cases of Spencer Wells, Geissel, Scheerenberg, Witzel, and Slavyansky, as well as those of Freund, related to echinococcus in the abdominal cavity. Only the cases of Thornton and Olhausen were to be looked upon as echinococci of the genitals. In the case of Olhausen, the echinococcus adhered to the uterus by means of a membrane. In the case of Dr. Elischer, the cyst filled the whole cavity of Douglas, and was attached by means of adhesions to the bladder, the ligaments, the epiploon, and the intestines. The seat of the echinococcus, however, was subperitoneal, which became evident by the strong hæmorrhage of the uterine parenchyma when attempts at detecting the mother-cysts were made.

A SINGULAR CASE OF YAWNING AND SNEEZING.

We notice in the *Medical Press and Circular*, January 11, 1888, the report of a remarkable case of the above affections occurring under the care of Dr. Robert J. Lee, at the London Temperance Hospital.

The patient was a girl of fifteen years of age, well-developed, and of prepossessing looks, and of cheerful and healthy appearance. She stated that five weeks before she came under notice, she had had one of her double teeth removed, without any particular difficulty and without anæsthetic. Half an hour after the operation she began to yawn, and up to the time when first seen the yawning had been constant and uncontrollable; that is to say, for a period of five weeks she was constantly yawning, except in her sleep, which was naturally quiet, and not unusually prolonged.

She complained of no pain and no feeling of illness, and was apparently rather inclined to be amused at her condition than otherwise. This might partly have been due to the effect which she produced upon those near her, for that singular provocation to yawning which is induced in others by the influence of sympathy, was very distinctly seen among the nurses and patients in the same ward with this girl. The tooth which had been removed was the premolar in the lower jaw on the right side. The gum was carefully examined by Dr. Lee and Dr. Gould, but no evidence of any irritation could be found. There was no derangement of the normal functions to be noted, no menstrual disturbance or other sexual derangement. Various observations were made of the temperature, of the condition of the kidneys, and other organs with negative results. The circulation was regular and quiet, and there was no account obtainable in any form of hysteric paroxysm. She was treated with full doses of bromide of potassium and belladonna, without any decided effect for a few days, when the attacks of yawning changed to attacks of sneezing rather suddenly. One paroxysm followed the other much in the same way as we observe in those ordinary attacks, to the number of two, or generally three, which are very familiar to us; that is to say, there

was about the same interval of time between them, and there was hardly sufficient rest for more than a few words to be spoken, before speech was interrupted by the succeeding paroxysm. This condition persisted like the yawning, the whole day, and the effect of the sneezing seemed to be more distressing and exhausting than the former. The patient was chloroformed once, with the result that during insensibility the sneezing ceased, but on recovering sensibility the first thing she did was to sneeze with unusual violence and frequency. A communication was addressed to Professor Charcot, to obtain the advantage of his experience, so as to direct the future treatment of the case. While awaiting his reply the patient was kept in bed and treated with half-drachm doses of bromine of ammonium, and in the course of a week or so the sneezing ceased. M. Charcot, in reply, referred to an interesting lecture he had given on Neuropathic Sneezings, which he had delivered between two and three years before on a case similar to this, and gave several other references.

Shortly after, in consequence of severe pain in a decayed molar tooth on the opposite side to that from which the former tooth was removed, she underwent a similar operation. In the course of two days the yawning began again, and she was again treated with bromide of ammonium and kept in bed. On this occasion the yawning continued for a week, and then entirely ceased, and she had no other trouble of any kind up to the time she left the hospital.

OBITUARY. JOHN DEAN, M.D., M.M.S.S.

BORN 1831, DIED 1888.

IF Dr. Dean had died some twenty or more years ago, the announcement of his death would have occasioned a sensation in scientific circles both at home and abroad. But ill health had so completely overcome him that he has long since passed out of the sight and out of the mind of the scientific world, and it is only to his personal friends that his death gives any pang. Those interested in the history of scientific work in America will be thankful to us for collecting some of the facts of the life of one who not only was the pioneer in American microscopic studies of the structure of the central nervous system, but who stood among the first workers in the world in that, as yet, little trodden path.

John Dean, the son of William and Lydia Dean, was born at Salem, Mass., December 21, 1831. He was educated in private schools and did not go to college, but went abroad for a year or so in 1850. He studied chemistry with Professor Horsford at the Harvard Scientific School in 1852-53, and soon after went to Germany to pursue his studies in that branch. He took the degree of Ph. D., at the University at Göttingen. He entered the Harvard Medical School in 1856, and graduated in 1860. There is still in the Museum a beautiful dissection of nerves bearing his name and that of Charles F. Crehore. During his medical studies he must have found time for original research, for his first important work on the "Lumbar Enlargement of the Spinal Cord," was presented before the Academy of Arts and Sciences, by Prof. Jeffries Wyman, on November 14, 1860. A still larger work illustrated by photographs of his sections as well as by plates, was that on the "Gray Substance of the Medulla Oblongata and Trapezium," published by the Smithsonian Institution in 1864. His reputation was now made, and in a field which in America, at least, was an absolutely new one. Unfortunately his health now failed him. He suffered from nervous exhaustion, and from chronic bronchitis and asthma, from which since that time he was rarely free, and which

repeatedly brought him into a critical condition. For many years he has been a complete invalid.

He married in 1859, Miss Eliza Philbrick Southwick, whose care of him was tender and constant till his death. He went abroad for several years, and made repeated fruitless attempts to resume his work. At last, feeling that it was hopeless, some twelve years ago, being at the time in America, he gave his entire scientific library which contained files of uncommon scientific periodicals and many rare and costly works on the nervous system, to the Physiological Department of the Harvard Medical School and at the same time his instruments and a choice collection of microscopic specimens. He went abroad for the last time in the spring or summer of 1882, and since then his home has been in Florence, where he died January 13, 1888, apparently from an acute attack of bronchitis.

It was a severe blow to him to have to recognize that he must give up his scientific labors; but he bore it with the patience that was characteristic of him and took pleasure in thinking that he had so disposed of his books and preparations that they would be of use to others. Dr. Dean was of a most amiable character; affectionate, modest and very patient. Many years ago, both Dr. and Mrs. Dean became converts to the Roman Catholic Church, of which he died a zealous and devout member.

OBITUARY. ASA GRAY, M.D., LL.D., ETC.

DR. ASA GRAY, Fisher Professor of Natural History and Director of the Herbarium of Harvard University, died at Cambridge, January 30th, in the seventy-eighth year of his age. Dr. Gray was born in Paris, Oneida County, N. Y., November 18, 1810. He took his medical degree in 1831, but only practised the profession a short time. He soon entered ardently upon the study of botany with Dr. John Torrey. He was appointed in 1834, botanist to the United States exploring expedition which was preparing to be sent out under command of Capt. Wilkes, but resigned in 1837, before the expedition, which encountered many delays, actually started. He went to Cambridge as Fisher Professor of Natural History in 1842.

He was one of the original members of the National Academy of Sciences, and had been at different times regent of the Smithsonian Institution, president of the American Academy of Arts and Sciences, and of the Association for the Advancement of Sciences, and an editor of the *American Journal of Science*. He was a member of almost all the principal scientific societies in this country, in Great Britain and on the Continent of Europe.

Dr. Gray has left a name which will be permanently associated with American botany, a field in which he had no rival. He was almost equally well known on both sides of the Atlantic, not merely in connection with those subjects, to which he had especially devoted himself, but in a still larger measure, as a sound reasoner, a shrewd thinker, a kind friend and a charming companion.

OBITUARY. GEORGE A. CROSBY, M.D.

DR. GEORGE A. CROSBY died at Manchester, N. H., January 30th, at the age of fifty-six years. He was born in Lowell, Mass., in 1831, graduated from Dartmouth College in 1852, and took his medical degree in 1855. He spent some years at the Isthmus of Panama and in Peru, but, at the outbreak of the War of the Rebellion, offered his professional services to the United States Government, and they were accepted. Since the War, he has practised his profession with ample success in Manchester, N. H. He had been President of the New Hampshire Medical Society, and was a member of the Manchester Board of Health. Dr. Crosby's family name is well known in the medical history of New Hampshire and New England.

A NEW ASPIRATING APPARATUS.

A PARIS correspondent of the American *Lancet* gives a description of a new appliance for thoracentesis invented by Dr. Ruault, and designed to avoid too sudden or too great lowering of the intra-pleural pressure. The description of the instrument is to be found in the *Comptes Rendus* of the Société de Biologie, July 30th.

To an ordinary wide-mouthed flask, filled two-thirds with water, is adapted an India-rubber cork pierced with two holes. Through these holes are passed two glass tubes, one reaching nearly to the bottom of the flask, and the other extending only a little below the bottom of the cork. To the upper end of this latter is fixed an india-rubber tube, about two feet long, having a stop-cock near to its extremity, which is destined to be adapted to a trocar of Professor Potain's apparatus for the operation of thoracentesis. To the other and longer glass tube is fixed an india-rubber tube of about four feet long, reaching down into a vessel on the floor destined to receive the liquid evacuated from the pleura. The apparatus is now complete, and being placed upon a table near the bed of the patient about to be operated upon, is ready for use. On blowing through the tube which carries the stop-cock, siphon formed by the other two tubes is primed. A small quantity of water is allowed to run out until there is sufficient in the lower vessel to cover the end of the longer india-rubber tube. The stop-cock is then closed. The water will continue to flow for a short

time until the pressure within the flask is inferior to that of the atmosphere by about six centimetres of mercury. The trocar can now be adjusted and the puncture made in the usual manner. On opening the stop-cock the liquid from the pleura will flow into the bottle and mix with the water. But as fast as the quantity of liquid in the bottle augments, the pressure above increases, and the siphon is again primed. The liquid, after passing through the bottle, continues to flow into the lower vessel until the operation is terminated. If the vessel is wide enough for the differences of level to be only slightly sensible, the pressure in the aspirating flask will remain about the same. But as this pressure is in proportion to the length of the longer branch of the siphon, it is easy to augment or diminish it by raising or lowering the receiving vessel more or less below the level of the liquid in the aspirating flask. The flow of the liquid from the pleura can also be regulated by means of the stop-cock so as to avoid too sudden diminution of pressure in the pleura. This apparatus enables the surgeon to operate without aids, without interruption, no matter what the quantity of liquid to be evacuated, and with perfect security to the patient. It can also be used for washing out the pleura in cases of purulent pleurisy, by adapting a Y-tube to the trocar extremity, each branch furnished with a stop-cock, to one of which the trocar is adapted, while the other communicates with Potain's washing siphon.

Dr. Ruault has recently employed the above apparatus on two occasions with the best results.

REPORTED MORTALITY FOR THE WEEK ENDING JANUARY 21, 1888.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diph. & Croup.	Typhoid Fever.	Scarlet Fever.
New York	1,481,920	749	284	19.24	22.75	11.44	.13	3.38
Philadelphia	993,801	435	129	9.20	12.88	2.99	2.53	2.07
Brooklyn	743,108	326	104	20.10	16.20	11.70	—	3.60
Chicago	725,000	—	—	—	—	—	—	—
St. Louis	420,000	—	—	—	—	—	—	—
Baltimore	417,000	163	63	10.37	17.08	4.88	1.22	1.22
Boston	400,000	267	78	10.73	28.49	6.09	1.11	1.85
New Orleans	242,750	116	27	20.64	16.34	5.16	2.58	—
Buffalo	225,000	—	—	—	—	—	—	—
District of Columbia	210,000	83	31	9.06	21.60	—	2.40	—
Pittsburgh	210,000	77	28	9.03	25.80	6.45	1.29	—
Montreal	186,287	—	—	—	—	—	—	—
Milwaukee	179,000	—	—	—	—	—	—	—
Providence	121,000	—	—	—	—	—	—	—
Richmond	100,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,000	17	5	11.76	23.52	5.88	—	—
Charleston	60,145	31	25	12.92	9.69	12.92	—	—
Portland	40,000	8	2	—	12.50	—	—	—
Worcester	68,383	20	8	10.00	35.00	20.00	—	—
Lowell	64,051	—	—	—	—	—	—	—
Cambridge	59,660	29	6	13.80	10.35	3.45	—	6.90
Rail River	56,863	36	13	13.80	11.12	5.56	2.78	—
Lynn	45,861	19	6	—	10.52	—	—	—
Lawrence	38,825	20	8	10.00	10.00	5.00	—	5.00
Springfield	37,577	8	2	25.00	12.50	12.50	12.50	—
New Bedford	33,393	14	3	14.28	21.42	14.28	—	—
Somerville	29,992	12	0	25.00	25.00	—	8.33	—
Salem	28,084	10	2	—	10.00	—	—	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	23,709	13	6	23.07	—	—	—	23.07
Taunton	23,674	6	—	—	—	—	—	—
Haverhill	21,795	12	2	16.66	16.66	16.66	—	—
Gloucester	21,713	14	1	7.14	21.42	—	—	7.14
Brocton	20,783	4	1	—	—	—	—	—
Newton	19,759	8	2	12.50	—	—	—	—
Malden	16,407	12	2	—	33.33	—	—	—
Fitchburg	15,375	9	3	—	33.33	—	—	—
Waltham	14,609	4	2	—	25.00	—	—	—
Newburyport	13,716	8	1	—	12.50	—	—	—
Northampton	12,896	6	1	16.66	16.66	—	—	—

Deaths reported 2,426: under five years of age 844; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 375, acute lung diseases 490, consumption 348, diphtheria and croup 190, scarlet fever 61, diarrheal diseases 54, typhoid fever 27, malarial fever 15, whooping-cough 13, cerebro-spinal meningitis 12, erysipelas 12, measles seven, puerperal fever four. From diarrheal diseases, New York and Brooklyn seven each, New Orleans 11, Philadelphia five, Boston, Baltimore, District of Columbia and Fall River one each. From malarial fever, Brooklyn six, New York five, New Orleans two, Baltimore and Nashville one each. From whooping-cough, New York 432, Baltimore three, Philadelphia, Boston, Pittsburgh and Newton one each. From cerebro-spinal meningitis, New York four, New Orleans and Somerville two each, Worcester, Cambridge and Fall River one each. From erysipelas, New York five, Brooklyn three, District of Columbia two, Boston and Worcester one each. From measles New York four, District of Columbia two, Philadelphia one. From puerperal fever, New York two, Boston and Somerville one each.

In the 20 cities and greater towns of Massachusetts, with an estimated population of 955,619, the total death-rate for the week was 27.53 against 23.87 and 24.91 for the previous two weeks.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending January 7th, the death-rate was 23.8. Deaths reported 4,279: infants under one year of age 885; acute diseases of the respiratory organs (London) — whooping-cough 183, scarlet fever 90, measles 67, fevers 53, diphtheria 42, small-pox (Sheffield 27, Leeds two, Bristol one) 30, diarrhoea 25.

The death-rates ranged from 14.5 in Brighton to 40.7 in Plymouth; Birmingham 19.5; Blackburn 28.5; Bradford 17.3; Hull 19.9; Leeds 23.9; Leicester 24.2; Liverpool 25.1; London 22.8; Manchester 35.6; Nottingham 21.2; Sheffield 26.4; Sunderland 20.6.

In Edinburgh 30.4; Glasgow 27.1; Dublin 38.6.

The meteorological record for the week ending January 21, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole, of the United States Signal Corps: —

Week ending Saturday, Jan. 21, 1888.	Barom- eter.	Thermometer.			Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.		
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration Hrs. & Min.	Amount in Inches.
Sunday, ... 15	30.17	35.0	42.0	27.0	84.0	100.0	73.0	86.0	S.W.	W.	W.	5	8	20	O.	O.	O.	6	.08
Monday, ... 16	30.75	36.0	43.0	29.0	68.0	53.0	59.0	60.0	N.W.	N.W.	N.W.	20	24	10	F.	C.	C.	6	.01
Tuesday, ... 17	30.48	19.0	29.0	3.0	78.0	86.0	100.0	88.0	N.W.	N.W.	E.	6	4	24	O.	F.	F.	6	.30
Wednesday, ... 18	29.71	23.0	32.0	17.0	86.0	89.0	78.0	84.0	N.W.	N.W.	N.W.	18	24	18	O.	O.	F.	8	.20
Thursday, ... 19	29.87	14.0	19.0	11.0	63.0	55.0	63.0	69.0	N.W.	N.W.	W.	16	36	12	O.	C.	C.	6	.21
Friday, ... 20	30.00	13.0	20.0	10.0	69.0	45.0	60.0	58.0	W.	W.	W.	10	30	12	O.	C.	C.	6	.21
Saturday, ... 21	30.23	7.0	13.0	0.0	62.0	48.0	59.0	53.0	W.	W.	W.	15	30	12	O.	C.	C.	6	.21
Mean, the Week.	30.403	17.6	27.0	11.0				15.6										20	.59

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 21, 1888, TO JANUARY 27, 1888.

BURTON, H. G., captain and assistant surgeon. Granted leave of absence for one year on S. C. D., to take effect when able to travel. S. O. 19, A. G. O., January 24, 1888.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE WEEK ENDING JANUARY 28, 1888.

WHEELER, W. A., passed assistant surgeon. Granted leave of absence for thirty days. January 24, 1888.

WHITE, J. H., passed assistant surgeon. Granted leave of absence for two days. January 26, 1888.

WATKINS, R. B., assistant surgeon. Granted leave of absence for thirty days. January 28, 1888. Resignation accepted to take effect March 15, 1888. January 28, 1888.

VAUGHAN, G. T., assistant surgeon. Appointed an assistant surgeon January 25, 1888, vice A. D. Bevan, resigned. Assigned to temporary duty at Marine Hospital, Boston, Mass. January 26, 1888.

SOCIETY NOTICES.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — THE SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE will meet at 19 Boylston Place, on Wednesday, February 8th, at 7.45 o'clock. Papers: Dr. Henry Jackson, "Fifty Cases of Scarlet Fever." Dr. S. H. Putnam will open the discussion. Dr. Morton Prince, "A Case of Ophthalmoplegia Externa." Drs. O. F. Wadsworth, J. J. Putnam, and P. C. Knapp, will open the discussion.

A. L. MASON, M.D., Chairman.

ALBERT N. BLODGETT, M.D., Secretary.

GYNÆCOLOGICAL SOCIETY OF BOSTON. — The next meeting of the Society will be held at No. 19 Boylston Place, on Thursday, February 9, 1888, at 4 o'clock, P. M. Paper: "Puerperal Septicæmia, with Report of Case," by Dr. C. W. Stevens.

H. J. HARRIMAN, M.D., Secretary.

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — There will be a regular meeting of the Society at the Medical Library, 19 Boylston Place, on Monday evening, February 6, 1888, at 8

o'clock. Readers: Dr. Franklin H. Hooper, "Adenoid Vegetations in Children, with Diagnosis and Treatment." Dr. Clarence J. Blake will speak upon "The Relations of these Growths to Deafness." Dr. E. M. Buckingham, "The Incontinence of Urine."

CHARLES P. STRONG, M.D., Secretary.

BOOKS AND PAMPHLETS RECEIVED.

Cooper Medical College, San Francisco. Annual Announcement. Session of 1888.

Annual Report of Morse Dispensary of Cooper Medical College for 1887. San Francisco.

Dystocia from Short or Coiled Funis, and its Treatment. By A. F. A. King, M.D., of Washington, D. C. Reprint. 1887.

Transactions of the American Gynaecological Society. Volume 12. For the year 1887. New York: D. Appleton & Co. 1888.

Synopsis of the Second Hundred Cases of Urethral Structure Treated by Electrolysis, with Cases. By Robert J. Newman, of New York. (Reprint.)

The Climatic Treatment of Phthisis in the State of Colorado. By M. Charteris, M.D., Professor of Therapeutics and Materia Medica, Glasgow University.

Doctor and Patient. By S. Weir Mitchell, M.D., LL.D., President of the College of Physicians of Philadelphia, etc. Philadelphia: J. B. Lippincott Company. 1888.

Operations for Mastoid Disease. By Seth S. Bishop, M.D., Chicago. Surgeon to the Illinois Charitable Eye and Ear Infirmary, to the Illinois Masonic Orphans' Home, etc. Reprint. 1887.

Statistical Report of 5,700 Cases of Ear Diseases, Classified by Age, Sex, Occupation and Disease; Causation. By S. S. Bishop, M.D., Surgeon to the Illinois Charitable Eye and Ear Infirmary, Chicago. Reprint. 1887.

The Galvano Caustery Sound and its Application, Especially in Hyphertrophy of the Prostate with Reports of Cases. By Robert Newman, M.D., of New York. Read before the Section of General Surgery of the Ninth International Congress. (Reprint.)

Second Series, Complete in Twelve Parts. Photographic Illustrations of Skin Diseases. An Atlas and Text-Book Combined. Hand-Colored Plates; Ninety Illustrations from Life. By George Henry Fox, M.D., etc. New York: E. B. Treat & Co. 1888.

Original Articles.

FEVER AND THE USE OF ANTIPYRETICS.¹

BY J. ARTHUR GAGE, A.M., M.D., OF LOWELL, MASS.

How, then, shall we formulate our *theory of fever*? It would be interesting and profitable to consider the different theories that have been advanced, and to show the gradual development of our present belief, but my short time will only permit a brief reference to the most important. The retention theory advanced by Traube, 1863, was long the accepted one, and even now enters into the more perfect theory of to-day in a certain degree. It was as follows: The cause of fever set up a spasm of the v-m-system, with resulting retention of heat and a rise of temperature; the accumulated heat then gave rise to the concurrent symptoms of fever. This was inadequate, and was disproved by the fact that the heat-loss is *greater* in fever, and that there is not a lasting spasm of the vessels; also by the fact that there is a greater heat-formation in fever. In reality, during fever there are great variations in the condition of the vessels of the skin — at one time flushed, at another pale. These irregularities in the rate of heat-discharge in fever may go far to determine the type of the febrile temperature — that is, the configuration of the curve on the temperature-chart, but are incapable of explaining the constantly increased temperature. The proof of increased tissue-metamorphosis led, naturally, to the combustion theory of fever, which may be stated as follows: The increased secretion of CO₂, urea, and the increased heat in fever indicate increased tissue-change, and gives rise to a higher temperature; this, in turn, produces the attendant symptoms. Finding heat-loss inadequate to explain fever, these theorists had grasped the other horn of the dilemma.

The combustion theory was widely accepted, and, to-day, remains as the basis of our conception of the source of fever-heat — but not the mechanism. This theory failed to explain many clinical facts, such as fever following injury to the nervous system, fever attending dentition, and urethral fever. Again, according to some, the amount of urea excreted is not always proportionate to the amount of fever, or rather, temperature, and does not fluctuate with the temperature. The cause of fever is often insignificant (excitement, a cold draught, etc.), and out of all proportion to the resulting fever. Many observers had felt the inadequacy of the theory to explain all cases of fever, and Dr. Ord²⁵ gave voice to this dissatisfaction in a paper in 1885. He offered a new theory, substantially as follows: If you keep a steady heat under a kettle of boiling water, the temperature of the water always remains at 212° F. as long as evaporation goes on. Pour oil on the water, and the heat accumulates; that is, a certain amount of heat disappeared in evaporation. If you let the water boil away, the empty kettle becomes heated to a high point. The amount of heat furnished is always the same; the direction of its energy is alone changed. Now heat may be used up in various ways in the body, as in motion, chemical action, or other energy; and, if any one of these ways is stopped, the heat that went off in the form of energy would be stored up to heat the body itself.

There are in the body two processes, building up

of tissue and disintegration of the same. The latter sets free heat; the former consumes heat or makes it latent. His conclusions are as follows: Combustion starts the fever process, but it is not sufficient to explain all cases. After the process is started the building up of tissue is greatly diminished or stopped, and the heat that would have been rendered latent in this process is set free to run wild and heat the body, represented by the kettle in his experiment. All this, he says, may be under the control of the nervous system. Though this is ingenious and comes from a man of Dr. Ord's preëminent ability, I think it is untenable for the following reasons. Even if the building-up process is arrested the heat-producing power of the food is the only source of the heat he supposes to be made latent in health. This source under fever diet is greatly diminished, and it probably does not go far on the upward course of constructive metabolism, but is burned up early and would then furnish the same amount of heat as albumen anywhere else in the body. The whole source is inadequate to explain the great production of heat, and is less sure than the well-known sources of heat. Secondly, it seems to me a *non-sequiter* to say that, because heat is made latent in a process, the *cessation* of that process should set heat free. It may never have been formed at all. One other observer deserves notice: Dr. Henri Parinaud²⁶ more than ten years ago advanced a theory of fever that is essentially in accord with our present belief. This occurred before the classical experiments of Wood were published, and due credit should be given the author. I shall incorporate his views in the summary. Dr. Wood as late as June, 1887,²⁷ before the association of American Physicians, after recapitulating what we know about heat-loss and heat-formation, sums up as follows: "Fever itself is a disturbance of calorification in which through the influence of the nervous system heat-loss and heat-production are both affected. If there be a fever which is produced independently of the nervous system we have at present no proof of its existence." The cause may be generated outside or inside of the body, but acts either directly or indirectly on the nervous system to give rise to the symptoms classed as fever. Hirtz²⁸ says: "The sudden origin and rapid development and as rapid decline of fever, its sudden disappearance after using antipyretics, its fierce duration in spite of diet, cool baths and spoliations is against a primitive chemical origin, and points to an active agent which lights up and keeps burning the combustion. This agent must be the nervous system." Dr. Broadbent²⁹ concludes that: "If a theory of the febrile process is to be formed it must be based upon a theory of the relation between the nervous system and the processes of nutrition and oxidation, and especially the latter." The consensus of opinion thus points to the nervous system as the controlling agent in fever, and our treatment must be in a measure directed to this system. I must here allude to Dr. Austin Flint's theory advanced in his paper³⁰ before the International Medical Congress. He says that in health we excrete more water than we ingest, and this is formed *de novo* by the union of oxygen and hydrogen with a resulting production of heat.

²⁵ Op. cit., conclusion.²⁶ Boston Med. and Surg. Journal, June 16, 1887, p. 683.²⁷ Diet. de Med. et de Chir., article "Chaleur."²⁸ Quain's Dict. of Medicine.²⁹ Medical News, Sept. 10, 1887, p. 281.¹ Concluded from page 116.²⁵ Brit. Med. Jour., October 24, 1885, p. 782.

In fever this formation of water is diminished, and its elimination by the skin also decreased; in its place the tissues are burned up to supply heat. I cannot see that he adds anything to our knowledge of the source of heat-formation in fever; possibly the lessened transpiration may explain why there is less heat lost by the skin. At any rate his claim to have established a new theory of fever seems hardly proven, and I find that Dr. Davis, President of the Congress, in a recent editorial takes exception to his views. I must also mention two very interesting papers by Macalister³¹ and McClagan³². The former calls attention to the important part heat-retention plays in fever, and the latter applies the theory to disease. They are very suggestive papers, though somewhat problematical, and are worthy of study.

What then is the picture of fever that we must form for ourselves from the data we have? A man is taken with a chill followed by high temperature, increase of the CO_2 and urea excreted, and disturbance of the various functions of the body with wasting of the tissues. These symptoms may be due to traumatism, to inflammation, to entrance into the body of chemical or living poisons, or to some disease or injury of the nervous system. What has happened to set up these changes? If we take such an injury to the nervous system as a hæmorrhage, it is evident that the only way in which such a condition can give rise to an increase of heat-formation and tissue-metamorphosis is through its action on the blood or nerves, for these alone pervade and influence all tissues. In the absence of inflammation it is inconceivable how any influence could be exerted through the blood, and we are left to explain the action by means of the nervous system. The following explanation is possible in the light of our present knowledge. The hæmorrhage acts by paralyzing the inhibitory centre or its efferent nerves, thus giving free rein to the process of combustion, just as you would increase the heart beat by cutting the vagus. At the same time the γ -system is relaxed, and more heat is given off; but the relations between the two functions is not maintained as in health, and the temperature rises.

If we consider the irritative fevers, as urethral fever, fever following dentition, or a nail in the foot, or a slight burn on the body, we are again compelled to explain the sequence of symptoms by the agency of the nervous system (I am aware that urethral fever is attributed to the entrance of germs, but the history is certainly inconsistent with what we know of the action of micro-organisms in other fevers). In this class of fevers, the cause must act not directly on the nerve-centres, but first on their afferent nerves, and, through them, the centres controlling heat. This has an analogy in health, where the effect of cold or heat on the temperature-nerves of the skin increases or diminishes heat-formation. The paroxysms of intermittent fever are best explained on the ground that the poison affects the nervous system primarily, since it is not easily conceivable how a poison acting merely in a chemical manner on the tissues could be periodic in its phenomena. Sunstroke is also best explained by supposing the heat to *unnerve* the heat-centres. It cannot be explained merely on the physical ground of exposure to great heat, for men endure much greater heat without a similar result. The hyperpyrexia occurring

in cases of rheumatism, when the temperature reaches 110°F , with alarming nervous symptoms, is capable, in accordance with our theory, of an explanation that is highly suggestive as regards the rôle the nervous system plays in fever. This condition does not occur in all cases of rheumatism, and, therefore, can hardly be due to the usual cause. It is explained as follows: In this disease there is great heat-formation and great heat-loss (shown by the profuse sweating), while the temperature does not reach an uncommon height because the nerve-centres control it. The unusual strain on the heat-centres in doing this may, however, exhaust them, and the control is lost. Heat-formation and heat-loss are no longer correlated, and the temperature rises to a dangerous height with the advent of prominent nervous symptoms. If we look at the zymotic diseases, where the agent is now thought to be a living micro-organism, the explanation of their action is not so easy. They may act locally on the tissues (as McClagan claims) through the blood, and, no doubt, they do so in the destruction of red blood-corpuscles, and in the effects on the skin in the exanthemata, *et cetera*. Whether this local action increases heat-formation without the intervention of the nervous system, we cannot yet say. It is known that these germs produce chemical products in the body, known as ptomaines, and Dr. Wood believes that these act on the nervous system to produce fever. If the germs act in purely a local manner, we certainly should not expect the long period of incubation before the fever appears. On the other hand, many purely local lesions cause general fever, and it seems most probable that they accomplish this by some channel of communication common to themselves and the tissues generally. These are a few examples of the application of our theory to disease, and many more might be adduced. But, however we explain the cause, we must not forget the essential fact that, once started, the fever process is under the control of the nervous system, and, if we can act upon this nervous mechanism, we can influence the tissue processes, though we do not affect the poison that causes them. This may explain the reason why certain drugs do not shorten the duration of a disease, though they modify its essential phenomena.

What, then, is the *rationale* of the use of antipyretics in fever? They may act in two ways: (1) By simply reducing high temperature. (2) By removing or counteracting the cause. They may reduce the body-heat either by increasing heat-dissipation or by diminishing heat-formation; but, in order that their employment for this purpose may be justified, we must first show that high temperature in itself is injurious. Dr. Wood³³ has done this for the nervous system in a series of experiments, and I think his conclusions are sound, in spite of Dr. McClagan's criticisms. T. Lauder Brunton³⁴ has also shown that heat acts disastrously on the heart. It is possible, also, that many parenchymatous changes of organs which follow fever, and make recovery so slow, are due to the effects of excessive heat. We are justified, then, in giving drugs for the reduction of temperature alone if they have no injurious counter-effects, for we thereby save the nervous system and the tissues generally from destruction, though we may not modify the course of disease.

³¹ Lancet, March 12, 1887, p. 507 et seq.

³² Lancet, Feb. 26, 1887, p. 114, Nos. IX-XIV.

³³ Op. cit., Chap. I.

³⁴ Reported by Wood.

The most common agents for the reduction of temperature are baths, veratrum, aconite, quinia, and antipyrine and its congeners. It is a well-recognized clinical fact that these agents reduce temperature by acting on the v.m. system to relax the cutaneous vessels and to cause sweating, and a discussion of their action upon heat-loss need not detain us. Do they affect heat-formation? It was one of my early impressions as a hospital student that the effect of sponge-baths in reducing temperature could not be satisfactorily explained on the ground that they acted merely by conduction and evaporation; nor did the sweating they sometimes induced solve the difficulty, for cause and effect were often out of proportion. I was thus left with the rather indefinite impression that they might modify the fever process. Now we all know the tonic effect of a cold shower-bath upon a healthy man — why should not the bath in fever act upon the temperature-nerves of the skin to stimulate the inhibitory heat-centre, and to diminish heat-formation? Why should not quinine and antipyrine act by stimulating this centre directly, and so strike at the very root of fever? Dr. Arduin³⁵ claims that this is true, at least, for antipyrine, and recent experiments at the Pennsylvania Hospital corroborate this opinion. If these conclusions shall be substantiated, we shall have a sure foundation upon which to base our use of antipyretics. Can these drugs affect the cause of disease? Our answer must be only provisional. In nervous pyrexias, where the fever originates in a disturbance of the nerve-centres, antipyretics may act directly upon these centres to quell the disturbance.

In diseases where the cause is a poison, they may have some action as antiseptics, and Dr. Williams³⁶ calls attention to the fact that aniline, closely allied to antifebrine, is a good germicide, particularly for the tubercle-bacillus. But, whatever the theory of their action, the clinical fact remains that they reduce high temperature, and will thus save the patient from many bad symptoms. Even though they may not shorten the course of the disease (and there is some little testimony that they do this), they will put the patient in the best possible condition to rally after the disease has run its course. This opinion is concurred in by careful observers who have watched the effect of antipyretics in an extensive hospital practice. Drs. Shattuck³⁷ and Mason,³⁸ of the Boston City Hospital, Dr. Wood,³⁹ of the Massachusetts General Hospital, Dr. Minot, of Philadelphia, and many others at the meeting of the Association of American Physicians, report good results from the use of antipyretics. If we compare the different drugs to decide which is the better, we shall see that there is a choice. Veratrum and aconite are ruled out, on account of their depressing action upon the heart. Quinine, although efficient, has many disagreeable effects. Of the more recently-discovered antipyretics, antifebrine stands at present at the head. It is efficient in small doses, 3-5 gr., and is not followed by the depression that accompanied many of the earlier drugs. It is also cheap. It has the one disadvantage of being insoluble in water, but can be given in alcohol or syrup. I should like to discuss its use in different diseases, and speak of some

of the results, but I have already over-stepped the limits of my paper. I could also wish to offer you some practical suggestions as to the employment of antipyretics; but if I have given you some food for thought, some theory on which we can safely and rationally base our practice, I shall feel repaid for my labor.

CASES OF NERVE STRETCHING, NERVE SECTION AND NERVE SUTURE, AND OPERATIONS TO RELIEVE PRESSURE ON NERVE TRUNKS.

BY M. H. RICHARDSON, M.D.
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IN October, 1886, I presented a paper upon this subject to this Society¹ with report of several cases. I have been able to follow up several of these cases, and it may be of interest to give the present condition of those I have been able to see recently.

CASE I. George Donahoe. Case of suture of the musculo-spiral. This man met with a severe injury to the right upper extremity from the caving in of a sand bank. He sustained a fracture of the right clavicle with a good deal of displacement. He has been a good deal disabled in the arm from pain and stiffness in the acromial region. Up to the time of the accident, the usefulness of the upper and forearm and hand had constantly improved, and he considered himself as good as ever.

CASE II. Mary Quinn. This case of secondary suture of the ulnar nerve was seen by me often during 1887. The hand was useful and the muscles supplied the ulnar were under control to a certain extent, as shown by the voluntary action of the interossei. The interesting point in this case was the long-continued pain in the cicatrix extending into the finger. This suture had been made with fine silk. One at least of these sutures had been discharged from the wound, and during this process there was considerable local inflammation. This experience led me to use fine catgut instead of silk in all subsequent sutures, as in the musculo-spiral case.

CASE III. Infra-orbital neuralgia of epileptiform character. One year later there was a slight return. Dr. Putnam relieved this by the use of rhigolene, and no second operation was done.

CASE IV. Bixby. Case of inferior dental neuralgia. This returned at the end of a year and was very violent and paroxysmal in character.

CASE V. Stretching of the spinal accessory for spasmodic wry-neck. No operation has been done subsequently.

I have been informed by Dr. W. N. Bullard, who had the charge of this man after my term of service had expired, that he was considerably benefited by the operation, and that the twitching was very materially permanently lessened. There was not, however, a complete cessation of the spasmodic movements of the head. He was able to be of considerable service about the hospital and became night nurse in the male ward.

The following cases have come under my observation since my last report. The operation of nerve suture has been substantially the same as in previous cases with the substitution of cat-gut for silk. It is

¹ Read before the Boston Society for Medical Improvement, January 9, 1888.

² See Boston Med. and Surg. Jour. for October 21, 1886.

³⁵ Bulletin Jour. de Therapeutique, March 30, 1885. Reported by Dr. F. H. Williams.

³⁶ B. M. and S. J., October 13, 1887, p. 359.

³⁷ B. M. and S. J., July 23, 1885, p. 75.

³⁸ B. M. and S. J., December 3, 1885.

³⁹ B. M. and S. J., June 22, 1887, p. 600.

unfortunate that the final result in these cases is so uncertain. They were all under observation long enough for me to determine whether any of the accidents sometimes seen in this operation were present or not, and to see slight return of both motor and sensory function. It is possible that a complete restoration has followed, but I have not been able to see or hear from the cases since.

CASES OF NERVE STRETCHING.

CASE I. November 11, 1886. P. J. O., aged forty-eight.⁵ Four years ago this woman had severe neuralgic pains in the right side. These lasted for about one year, and then got better. Two years ago the trouble came back on the other side. The marked peculiarity in this case was the severe and uncontrollable contractions of the abdominal muscles on the left side. Every few moments the muscles on that side would contract violently and painfully, producing *plenrosthotos*. These attacks were much more pronounced when attention was called to them. Electricity and plaster jackets had been tried without success. Patient couldn't walk. She was very much bent towards the affected side, and had an almost constant twitching of the affected muscle with severe pain. After consultation with Dr. Putnam it was thought best to stretch the lower intercostal nerves.

November 23d. An incision five or six inches in length was made parallel to and an inch below the lower border of the ribs on the left side. All the nerves in this incision were divided or stretched. Bichloride irrigation, silk sutures and antiseptic dressings. The wound was healed two weeks after the operation. There was no marked change for the better although the frequency of the attacks seemed diminished.

December 26th, a plaster jacket was applied. She has not been seen or heard from since. This operation was not a success. From whatever cause this spasmodic contraction of the muscles proceeded, it is clear to my mind that stretching of the motor nerves is not sure enough of producing any lasting benefit to warrant so severe an operation. It is necessary to make a very long and deep incision to find the nerves, and if any number of them are to be found the cut will have to be a very long one. To accomplish any decided results I am sure that these nerves must be divided, and a sufficient number to produce a very decided paralyzing effect. There is no danger of a permanent paralysis because the nerve supply to the abdominal muscles is so extensive. It is questionable whether in a similar case I should advise nerve-section. It was very probable that the trouble in this case was of central origin, and not in the nerve trunks themselves. In such a condition of things I do not see that anything short of complete and permanent paralysis can be effectual. By the incision along the lower border of the ribs a larger number of intercostal nerves can be reached than by any other one cut of the same length.

To paralyze the whole of the muscles it is necessary of course to reach the ileo-inguinal and ileo-hypogastric nerves as well as the intercostals. To divide them all makes the operation very extensive, and, in my opinion, it is to be recommended only in extreme cases, like the above. In such a case I should now cut the intercostals first, and later the ileo-inguinal and hypogastric branches.

CASE II. Peter Tierney,⁴ aged thirty-six, coal heaver. Entered the Massachusetts General Hospital, August 26, 1887. General health good. No history of rheumatism or syphilis. Eight months before admission, after unusual exposure to cold and wet in loading vessels at the wharves, patient began to suffer pain in back of thigh. Pain increased, and in a week he was obliged to give up work. Since that time he has suffered constantly with pain in the course of the sciatic nerve. Had been under treatment by Dr. Putnam in the nervous room of Out-patient Department with massage, cautery, etc., without much benefit. Complaints of severe and constant pain in the back of the left thigh along the course of the sciatic and in back of knee and calf. Pain especially intense opposite the great trochanter and at middle of thigh. Great tenderness to pressure along whole course of nerve. Muscles of left thigh and calf flabby, and an inch less in circumference than in right. Has frequent tingling sensations in left foot.

August 27th. Considerable pain. Lies in bed with leg flexed and everted. Seen by Dr. Putnam who advised deep injections of chloroform. In the afternoon needle of hypodermic syringe inserted deeply between trochanter and ischial tuberosity and seven minims of chloroform injected.

August 28th. Pain in leg unrelieved. Anxious for anything to give relief, and willingly consents to have nerve stretched.

August 30th. Operation under ether. An incision two and a half inches in length was made in the long axis of the thigh commencing at the lower edge of the gluteus maximus muscle half-way between the tuberosity of the ischium and the great trochanter. The fascia was divided and the nerve readily exposed and hooked out of the wound by the finger. It was then forcibly drawn upon two or three times to the extent of raising the limb. A soluble drainage tube was inserted, and the wound closed with a continuous cat-gut suture. There was nothing abnormal in the appearance of the nerve. The next day there was relief from the pain in the leg, although there was some pain in the cut. No anesthesia or motor paralysis. Two days after operation complained of pain in the same locality as before operation, but not so intense.

September 6th. A week after operation the wound was dressed for the first time. The tube and the stitches had disappeared. First intention. Pain the same as before.

October 1st. The pain being still severe and unrelieved he was etherized, and extension on the nerve made by strong flexion of the thigh on the abdomen with the leg and foot extended. Recovered from ether well, but there was no less pain in the leg.

Discharged from the hospital on the 5th, to return in three weeks. Has not been seen since.

This case was not benefited in the last by either operation, and it must be considered a complete failure.

CASE III. August 21, 1887. James Brady,⁶ laborer, aged fifty. Fifteen years ago patient received a blow over left buttock with a pick. Three months after began to suffer pain in the back of thigh and front of the leg. This pain has continued but with little severity and frequent intermissions ever since. Within six months pain has been more severe and constant. Under treatment in the out-patient room

⁵ Vol. CCXXIV, p. 212, Mass. Gen. Hosp. Records.

⁴ Vol. CCXXXII, p. 122, Mass. Gen. Hosp. Records.

⁶ Vol. CCXXXII, p. 181, Mass. Gen. Hosp. Records.

for some time without benefit, and referred to the house to have the nerve stretched.

August 23d. Under ether the limb was forcibly extended so as to put the nerve on the stretch.

August 24th. Pain somewhat relieved. Patient examined by Dr. Putnam who advised against operation. Discharged. Slightly benefited.

CASES OF NERVE SECTION FOR NEURALGIA.

CASE IV. October 14, 1887. S. P. B.⁶ The case of this patient was reported by me in a paper read before this society October 11, 1886, and published in the JOURNAL October 21, 1886. Has had complete relief for one year. A few weeks ago the pain returned worse than ever. No assignable cause. He was put upon salicylate of soda in twenty-grain doses, three times a day. Dr. Putnam also applied rhigolene. There was some benefit from this treatment. The pain recurred every morning about six o'clock with a less severe paroxysm towards night. Quinine taken at 4 A.M. relieved the pain for three or four days, and he was at his request discharged to continue the treatment at home.

November 4, 1887. Re-enters for operation, with pain as severe as ever.

November 7th. Operation. An incision was made over the ascending ramus of the jaw about two inches in length parallel and between the fibres of the masseter. The branches of the facial nerves were carefully avoided. On scraping back the periosteum at the same place where the jaw had been trephined the year before the surface of the bone was found to be perfectly smooth, and without the slightest sign of the previous operation. The chisel was applied along the course of the inferior dental canal. But neither canal nor nerve could be found. The whole region of the canal was gouged out as before. The mental foramen was next found after thrusting a pin into it. The nerve was found emerging from the foramen enormously enlarged. Its branches were collected together, and pulled out of the canal, and also from the tissues to which it was distributed. The foramen was chiselled out and the nerve destroyed a considerable distance. Wounds closed with silk and drained in the usual manner. The next day there was very severe pain. Wound was found sealed, and the tube was removed. Pain continued very severe, and paroxysmal in character. Ten days after operation the pain began to be less. Wounds healed by first intention. Pain gradually disappeared, and he was discharged the 19th.

This case is interesting from its continued recurrence, and from the evident fact that the pain was due to collateral trunks. The size of the branches emerging from the mental foramen was very evidently much greater than is ever seen in the normal nerve. Another interesting fact was the entire obliteration of the canal at the seat of the former operation, showing, of course, that there had been no regeneration of the trunk of the nerve in the way usually supposed.

January 6th, I saw the following case in consultation with Dr. Walton. P. S., from Connecticut, foreman of a machine shop. Six weeks ago while working on a lathe the bar of steel on which he was at work flew from the lathe and struck him over the right eye. After recovery from the immediate effects of the injury, he continued to experience pecu-

liar sensations on the right side of his head with more or less dull pain extending from the right supra-orbital region to the top of the head, and sometimes in the occipital region of that side. He found difficulty in draughting on account of sensations in his head which he described as not exactly a pain, but as a confused sensation sometimes accompanied by pricking and numbness. While sitting perfectly quiet there was no special pain anywhere. There is a broad linear scar extending obliquely upwards and forwards from the outer angle of the orbit about three-quarters of an inch in length. Slight loss of substance. Not adherent to the underlying parts. The lightest touch behind this scar outwards over the temporal region caused tingling sensations to run upwards over the entire region supplied by the supra-orbital nerve. Deep pressure over the nerve or its branches caused no sensitiveness or pain. A light touch inside the scar produced no symptoms whatever. There was no tenderness over the supra-orbital notch. The patient complained of a numb sensation in the region supplied by the supra-orbital nerve, but the physical examination showed no definite loss of sensation. Dr. Walton was of the opinion that the lateral branches of the supra-orbital nerve were involved in the cicatrix and advised excision of the scar.

January 7th, I excised the scar, and found a large branch of the supra-orbital running directly into it. I caught it with strong forceps, and twisted it out of the tissues. Wound closed with silk. January 8th, first intention. Complete cessation of sensitiveness and sensations of discomfort.

NERVE SECTION FOR SPASMODIC WRY-NECK.

CASE I. October 17, 1887. Mrs. M. A. R.⁷ aged forty-eight. A very nervous and spare woman who for four years had suffered from contraction of the right sterno-mastoid and trapezius muscles. This was not constant at first but very painful. For a long time the spasm was tonic and clonic with more or less constant pain. The head was drawn to the right and rotated slightly. She had been under the care of Dr. Putnam with whom I had seen her in consultation. She had tried many remedies without effect. Electricity and various apparatus had also been used without success. As a last measure division of the right spinal accessory nerve was advised by Dr. Putnam and myself, and she was sent to the hospital for that purpose.

At the time of entrance it was found that the right sterno-mastoid was rigid, and permanently contracted. When fully relaxed the head could be brought to an erect position, but no farther than that. She could hold the head erect herself, but on relaxing her efforts it would be drawn toward the right shoulder and rotated towards the left.

October 28th. Under ether an incision *one inch* long was made over the nerve along the anterior border of the right sterno-mastoid muscle. The dissection was carried directly backwards towards the vertebrae. The nerve was found very easily, and an inch of it removed. The diagnosis was confirmed by the electric current before the nerve was divided. The wound was closed with silk and iodoform gauze applied. Bichloride solution irrigation during the operation.

Two days later the stitches were removed. The

⁶ Vol. CCXXXIV. p. 13, Mass. Gen. Hosp. Records.

⁷ Vol. CCXXX, p. 229, Mass. Gen. Hosp. Records.

right sterno-mastoid was soft and flexible. The head was erect and there was no pain. The head was carried towards the right shoulder at times from force of habit.

A few weeks later she re-entered for the purpose of having the right trapezius divided. It had been found since the operation that the anterior fibres of this muscle were somewhat contracted, and that it was impossible to bring the head to more than the erect position on account of this shortening, and the previous long-continued contraction. After the division of the spinal-accessory nerve the trapezius together with the sterno-mastoid had become much relaxed, and had ceased their spasmodic contraction. The sterno-mastoid was easily stretched to allow free movement of the head, but the trapezius would not allow this motion. The other muscles on that side seemed also to be contracted, especially the *scalenus medius*. After careful examination it was thought impracticable to relieve the contraction by division of the trapezius alone, and a general division of the muscles on that side too severe an operation to be thought of, considering the slight discomfort then present. At the present time she is very comfortable, and will have an apparatus to stretch the affected muscles. An interesting point in this case is the question of collateral nerve supply to the sterno-mastoid. The main supply is from the spinal accessory, but it also has some filaments from the cervical plexus. The immediate effect of division of the spinal accessory is to relax the muscle, to weaken it but not to paralyse it completely. It is a very much more satisfactory operation than stretching, and I believe it to be even safer. The case of stretching reported last year was not permanently benefited. The fear of causing complete paralysis of the muscle is groundless, and the effect on the muscle is just what is desired. As to the matter of incision, it seems to me that the cut I have described along the anterior border of the sterno-mastoid is much better than any other. The nerve proceeds outwards from the jugular foramen, and enters the muscle obliquely about an inch and a half below the mastoid process. It can be found at the bottom of an incision an inch long made at this point. An aid to finding it is to scratch with a director the tissues at the bottom of the wound as you go along, by which the nerve is irritated into causing a contraction of the muscle. It is also large enough to be left in a thin person. If the mastoid alone is to be affected it might be better to seek the mastoid portion by an incision through the centre of the muscle parallel to the fibres. The part of the trapezius supplied by this nerve is so small, however, that I think it is just as well to divide the main trunk.

NERVE SECTION AND SUTURE.

CASE I. August 25, 1887. Patrick Treeny,^{*} aged thirty-two, laborer. For six or seven years has had a tumor near the elbow which has been very tender to the touch, and the seat of severe pain. Also another on the back near the left scapula. A small bunch is seen just behind and above the internal condyle of right humerus, the size of a cherry. The pain runs down into the hand.

August 26th. Operation. An incision was made along the course of the ulnar nerve just over tumor. A tumor was found encapsulated in the nerve trunk

itself, the fibres of which could be seen spreading over and through it. The capsule of nerve and tumor was found to be the same and continuous. As it was impossible to dissect the tumor from the nerve, the nerve itself was cut both above and below. By extending the arm and relaxing the nerve, and by stretching it, the ends were readily approximated and the sheaths stitched with cat-gut, making a very perfect joint. The wound was closed with a continuous cat-gut stitch. Antiseptic dressings. The arm was placed extended upon a splint which reached almost to the axilla. For a few days after the operation there was a good deal of pain in the wound, and numbness in the arm and hand. Paralysis of sensation along the course of the ulnar nerve.

September 5th, the splint was removed from the arm, and the wound found to be solid. The same day the tumor over the scapula was dissected out and found not to be connected with any nerve large enough to be seen. Five days later the stitches were removed. There seemed to be at this time a certain amount of separation of the fingers possible, especially in the abduction of the index finger. Hand still decidedly weaker than the opposite.

September 14th. Discharged to the Out-patient Department. Examined by Dr. Walton, some weeks later. The muscles supplied by the ulnar nerve were atrophied showing re-action of degeneration.

In this case the principal trouble was excessive and disabling pain, especially in the tumor of the arm. This was completely relieved by the operation. The man has been lost sight of, and it is a question how much restoration of the motor function of the nerve has taken place. It may be said, however, that none of the accidents or complications of nerve suture were present in this case, for he was perfectly free from symptoms of neuritis, and from that disturbance of the nervous system sometimes seen after nerve section and suture.

Dr. Putnam's report of the microscopic examination of the tumor: "Tumor attached to the ulnar nerve. Size of a small walnut. The ulnar nerve in passing over it is spread out so as to cover a space one and a half centimetres wide. Examination of the nerve fibres shows some of them to be healthy, others in a state of commencing degeneration. On examination the tumor proves to be a sarcoma. It is made up of a mass of fibres, small cells with elongated processes and round cells. Here and there a small mass of fat cells is to be seen. The cells are readily stained with hæmatoxylin and on treatment with acetic acid are seen to contain a distinct nucleus. The intervening fibrous substance is not arranged in any characteristic manner."

CASE II. July 6, 1887. William Cline,[†] brake man, aged twenty-two. Caught his wrist between the bunters while switching cars. Had a cut over the inner and posterior surface of the wrist just above the styloid process of the ulna. The edges were ragged and the muscles torn and bruised. Ulnar nerve divided as well as the tendon of the flexor carpi ulnaris. Under ether the ends of the nerve were found and sutured with fine cat-gut. The tendon ends were also sewed together with the same. Wound united with silk, and iodoform gauze dressings applied. The arm was laid in a tin splint so as to keep wrist flexed. Internal angular splint.

The next day had severe pain in hand and arm.

^{*} Vol. CCXXXII, p. 189, Mass. Gen. Hosp. Records.

[†] Vol. CCXXXII, p. 98, Mass. Gen. Hosp. Records.

The pain was along the course of the ulnar nerve, and in the little finger. Temperature was elevated the second day after the operation. Wrist was found to be swollen and very tender. All stitches were removed. A few drops of pus were squeezed out. Dry dressings.

July 9th. Phenyle poultice. Wound suppurating.

July 15. Wound granulating, and in good condition. Discharged to the out-patient department.

I have not been able to see this man since he left the hospital. He has been at his work as freight brakeman on the Fitchburg Railroad ever since, and I understand that he is able to attend to all the duties of that position.

OPERATIONS TO RELIEVE PAIN FROM PRESSURE.

CASE I. April 13, 1887. J. L.,¹⁰ mill operative, aged twenty-three. Father had sciatic rheumatism. One sister had cerebro-spinal meningitis. Always strong and well. Four years ago turned her left ankle. Five months later began to have constant pain limited to a small area on the outer side of the left leg about the middle of the calf. A sharp lancinating pain extending along the course of the musculo-cutaneous nerve. This spot was also very sensitive to pressure. Pain was increased by exercise. Left leg occasionally swollen. Had been treated with rubber bandage, blistered eleven times, actual cautery two years ago, and electricity. No relief. Had been wearing a rubber stocking for some time. Had a scar on the outer side of the calf at about the junction of middle and upper third of the leg about the size of a vaccination mark, caused by the cautery. This is the seat of the pain and is very tender. Very slight tenderness over a small area about it. Was given salicylate of soda, ten grains three times a day.

April 20th. No relief. Operation by Dr. Beach under ether. The scar left by the cautery dissected out. Dissection carried down to the fascia. No nerve fibres discovered. Closed by silk sutures and antiseptic dressings.

April 22d. Some tenderness over the incision. None of the lancinating pain. Stitches removed.

April 26th. Healed by first intention. No pain, and scarcely any tenderness. Discharged.

July 28th. Re-entered. Was free from pain for about three weeks after discharge. Pain and tenderness returned in former situation and of greater severity than before.

July 30th. Operation. An incision was made in the line of the scar of the former operation extending an inch above and below it. The cicatrix of the former operation was removed by an elliptical cut. Aponeurosis covering the muscles was exposed and nerves carefully sought. No nerve filaments could be found whatever. There was no evidence that the cicatrix had involved any considerable nerve branch. The fascia was then divided by a crucial incision, and the musculo-cutaneous nerve sought in the space between the extensor communis digitorum and the peroneus longus. After quite prolonged search among the fibres of these muscles which had a peculiar fatty-infiltrated appearance at this point, a tumor was found into which the nerve apparently went. The tumor was removed without difficulty. It was encapsulated. What appeared to be the nerve was a fibrous band from the intermuscular septum which expanded and

lost itself in the tumor. The musculo-cutaneous nerve was found in such a position that it was evidently compressed between the fibula and the tumor. The gross appearance of the tumor was that of a melanotic sarcoma. Unfortunately it was lost and no microscopic examination was made.

August 5th. Stitches out. No pain.

August 10th. Discharged well. No pain.

November, 1887. She wrote that there was a return of pain or rather discomfort. Was advised to return for examination.

This case illustrates the importance of seeking a cause for a persistent local pain. There was not the slightest evidence of the existence of a tumor by physical examination. Yet there is no doubt that she had been suffering not only from long-continued pain, but from repeated therapeutic measures. I think it may be said as a rule that persistent pain localized in the course of a nerve which has not yielded to a long-continued course of counter-irritation and internal remedies, makes it the duty of the surgeon to cut down and see if there is not some cause that can be removed as easily as this was. Moreover, if there is a tumor pressing on the nerve the sooner it is removed the better, especially if it proves to be, what this probably was, malignant. The recurrence of pain in this case leads me to think that there is a return of the growth, and I have advised her to come immediately for examination and operation.

CASE II. Mary A. P.,¹¹ aged twenty-three. Fourteen years before entrance she fell and injured the right elbow. Then arm was put on a splint and kept there six weeks. Never had any trouble in it till recently though the elbow-joint was a little stiff. Four or five years ago the elbow began to pain her. She first noticed pain in bending the arm to a right angle. That has steadily increased till at the time of the operation the arm was almost entirely disabled, and she wore it in a sling. On examination of the arm a small bony growth was perceived at the elbow joint, situated just to the outside of the tendon of the biceps. The pain as described followed the course of the external cutaneous nerve. There was very little tenderness in the bunch itself, but at a certain point in flexion and extension there was a sharp twinging pain like that of the crazy bone. A diagnosis of pressure on the external cutaneous nerve was made. On cutting down to the bony projection the nerve was found between it and the biceps tendon in so close relation that every time the biceps was flexed or extended the nerve was sharply compressed between the two. The growth was chiselled off smooth from the lower part of the humerus to which it was attached and the wound closed as usual. Corrosive sublimate irrigation and iodoform dressings. Healing was by first intention. The pain was relieved entirely and has never returned.

— Our esteemed contemporary, the *Medical Record*, reports in one and the same issue two cases which appeal pretty strongly to the wonder element — the one of a man who has just died in Constantinople at the age of 115 years, "a personal friend of Marat, Dantou and Robespierre"; the other a young lady of Japan, aged twelve years, five months, whose height is eight feet, and her weight 270 pounds.

¹⁰ Vol. CCXXX, p. 263, Mass. Gen. Hosp. Records.

¹¹ St. Margaret's.

CASES OF FEBRILE DELIRIUM TREMENS.¹

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clinic.

THE existence of certain specially dangerous and hyperacute forms of delirium tremens has been known and recognized by many writers since the days of Magnus Huss, but the first distinct description of this class of cases in which an attempt at their differentiation from the ordinary type was made, seems to have been that of Delasiauve, of his so-called superacute form (*forme suraigue*) in 1852. In his cases, however, the distinctive symptom of fever was absent, and it was left for Magnan, in 1873 and 1874, to describe as a distinct variety, his cases of febrile delirium tremens.

Although the cases which I am about to report do not agree in all respects with those related by him, I have ventured to make use of the title of febrile delirium tremens for them also. One of the predominant symptoms, perhaps we may even say their most striking characteristic, was the presence of fever, and in many points they closely resemble the cases of Magnan. Moreover, there can be little doubt that the different varieties of delirium tremens shade imperceptibly into each other and that they are all acute manifestations of chronic alcoholism modified in their symptoms by the constitution of the patient, his condition at the time, the existing complications and various other attending circumstances.

The presence, however, of so important a symptom as fever, affords, in our opinion, a sufficient ground for placing those cases in which it exists to any marked degree, in a separate category from the ordinary simple febrile cases. Since, after as thorough an examination as possible of the voluminous literature of delirium tremens, we have found no carefully reported cases of this character, since those of Magnan, we feel justified in bringing these to the notice of the Society, more especially as we believe that there are certain considerations connected with them of considerable importance both to the specialist and perhaps even more to the general practitioner.

The first case which I shall present, is as follows:

On the 24th of September, 188-, the patient, a professional man, aged thirty-two, entered the Hospital under my charge. The following history was obtained from his relatives and friends, partly at the time and in part later.

Family history entirely negative. When about fifteen or sixteen years old, patient had some mental trouble and was sent to the McLean Asylum for a time. He recovered from this perfectly, was afterwards healthy and an exceptionally bright and intelligent student. For several years previous to entrance he had been addicted to the use of alcohol in excess and about four years previously was sent as a patient to the City Hospital, suffering from delirium tremens. Since then he had been under the influence of alcohol much of the time, but his family state that for the four weeks preceding admission to the Hospital, he has had only one bottle of ale per diem, and nothing else. For some time he has been thought to have been a little "queer," but this was first noticed by the family four weeks ago, when he came to live

with them. It was then perceived that at times he did not seem to realize where he was, and he would frequently make remarks which had no apparent connection with the conversation or with his surroundings at the time. He had distinct hallucinations of sight and hearing and spoke, for example, of hearing his mother sing, she having died some time previously. He appears at this time to have used some morphine, but not any large amount. These symptoms gradually increased in severity, and he was brought to the Hospital on their account.

When first seen by me on the day after entrance, he was sitting up, recognized the people whom he had previously known and talked rationally during the visit, though he did not know where he was and was easily confused. He was markedly weak and languid, complained of no pain, but of discomfort in his head. Face flushed; lips dry and cracked. Pulse 120, weak.

R. Ammon. Carbon. grs. v. t. i. d.

On the day following (September 26th), the patient was decidedly worse. He was almost unable to recognize friends or to answer questions, and was confined to bed, being too weak to stand. The bowels were somewhat constipated; there was no headache or vomiting.

September 27th. In bed. Pulse stronger, 110. Has distinct delusions of sight and hearing. Talks steadily to imaginary persons. Talks to physician as though he were some one else. Physical examination gives negative results.

September 28th. Was to-day ordered whiskey $\frac{3}{4}$ ss. on account of weakness of pulse. Otherwise has had no alcoholic stimulant since entrance.

September 29th. Patient is now in a distinctly typhoidal condition, face much flushed, tongue, which when first seen, had a thick white coat, has now a dry yellow coating and is cracked and parched. Lips covered with sordes. Pupils alike, normal, react fairly. Temperature has been 99° in the mornings and rose in the evenings to about 102°. Pulse 120, a little stronger. Bowels moved freely yesterday. Nothing abnormal detected in the urine.

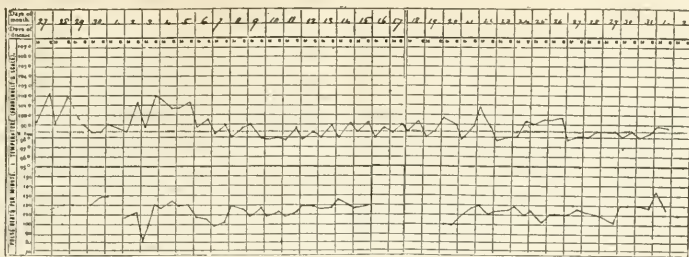
He is now in a state of muttering delirium, plucks constantly at the bed-clothes, yet he recognizes people, at least partially, when asked who they are. Has been so restless at night that he had to be held in bed. Takes his food (milk) well.

Patient was seen to-day by Dr. Jelly in consultation, and a provisional diagnosis of subacute cerebral meningitis was suggested. An ice-bag was ordered to the head, and iodide of potassium (gr. xv, t. i. d.), and bromide of potassium (gr. xx, t. i. d.), prescribed. The carbonate of ammonium was omitted, but renewed the next day.

September 30th. Found patient this morning in a semi-comatose condition, after a somewhat restless night. He could be roused only with considerable difficulty and then recognized physician. The power of recognition varies according to his condition at the moment; on the 27th he did not recognize his brother. Pulse more feeble, 120. Temperature morning and evening normal. Pupils both dilated, right smaller than left; both react to light. Later in the day the pulse became more rapid, 128, scarcely perceptible at the wrist, and ammonia was given subcutaneously. Retention of urine, so that catheter was required.

After this, through change of service, the patient

¹ This paper was read in substance at a meeting of the Medical Psychological Society on the 19th of May, 1887, but the title, according to a proviso made at the time, has been changed, and certain additions and modifications have been made.



passed under the care of Dr. G. M. Garland, to whose courtesy I am indebted for permission to make use of the Hospital records relating to this patient while under his charge.

October 1st. Temperature this morning 99°; pulse regular, 128, soft and feeble. Complains a little of acute lancinating pain in the head. Imagines that people are pursuing him, and tries to run away from them. Mutters a good deal and talks thickly. Knew the physician and called him by name, then became confused. Fumbling of the bed-clothes. Urine passed involuntarily. Tongue very red, dry in the centre, secretions of mouth thick and adherent to gums. Conjunctivæ pale, pupils equally dilated, no photophobia, convergence good, hearing perfect, no sensitiveness to sounds. Cheeks and superciliary regions congested. Tache cérébrale slightly marked.

Was ordered carbonate of ammonia, digitalis, and gelseminum. The iodide and bromide were omitted. Beef-tea.

October 3d. Slept four or five hours last two nights. Dejections following enemata each day. Urine passed voluntarily for first time to-day, patient demanding urinal. Quiet, not anxious to get out of bed, but very emotional, talking and crying a great deal; wanders constantly in mind. Tongue, yesterday, moist, soft, slightly coated. Evening temperature (yesterday), however, rose to 101.3°. Temperature to-day, A. M., 98.8°; P. M., 102°. Pupils react equally to light. Borborygmus on pressure.

October 4th. Three large, soft dejections last night; one in bed. Temperature this morning, 101.8°, pulse 120. Urine high-colored; is passed involuntarily. Evening temperature, 100.8°.

October 9th. Is still very stupid and almost unconscious, although he protrudes tongue when asked. Has had diarrhœa for two or three days; defecation and micturition involuntary. Nourishment consists chiefly of milk; takes whiskey.

October 11th. Much more conscious of surroundings. Pulse and temperature more nearly normal. Tongue moist; very slight coat.

October 14th. Yesterday, was wildly delirious, constantly talking to imaginary persons, but not in a frightened way, as previously. Slept poorly last night. To-day, is more sensitive to external influences and talks easily, though wandering in mind.

October 21st. Appears much better to-day. Tongue still red, dry, and fissured in the centre, moist on the edges. Fans himself, and talks of the "mugginess" of the atmosphere.

November 7th. Is much better. Has been able to sit up for the last few days.

November 10th. Well enough to go out-of-doors.

November 12th. Discharged on request.

The patient was transferred to the City Hospital, service of Dr. C. F. Folsom, to whose kindness I am indebted for the following notes:

On entrance, was so delirious that no history could be obtained. Very restless, constantly getting out of bed. Does not recognize those about him but supposes them to be other persons.

Tremor of tongue and limbs. Right pupil slightly larger than left; reactions of both to light sluggish. Well-marked atrophy of both optic discs. Is unable to stand with eyes closed. Marked loss of power of hands. P. R. exaggerated. Speech thick, indistinct. Pulse 100, respiration 24.

Was discharged two days later on request, not relieved.

He is believed to have been sent later to Danvers for a time, but he ultimately recovered — at least, to a considerable extent — and within a year had resumed, in part, the practice of his profession.

In this case we have a man of thirty-two, with a distinct predisposition to mental disease, and addicted to a considerable period to the excessive use of alcohol. Having continued the abuse of the stimulant after, at least, two attacks of delirium tremens, he finally, four weeks before entering the Hospital, and probably much earlier, is perceived to act in a strange manner, to have temporary lapses of memory, and hallucinations of sight and hearing. On entrance, he is found to be much in the condition of a patient recovering from a severe attack of delirium tremens — weak, with decided tremor of face and hands, and mentally affected, unable to realize his surroundings. Very shortly, fever was detected, and, instead of improving, he grew rapidly worse. The general weakness increased, and was accompanied by very marked and constant subultus tendinum, and by continual plucking at the bed-clothes. The tongue was cracked, dry, and parched, and the general condition suggested that of typhoid fever. Mentally, he likewise became worse, having constant, rapidly-changing hallucinations, many of them terrifying and horrible, but many also, and the proportion of these increased as the disease progressed, of a not unpleasant character. He constantly imagined that he saw friends and acquaintances, who spoke and chatted with him. He talked aloud much of the time, often starting up suddenly and answering some subjective question. This condition of things continued for a month, being varied by periods of semi-coma, when he could with difficulty be roused to answer questions. The fever ceased at one time, to recur later. At the end of a month his

strength had improved, and there were no acute symptoms remaining. From this time his mental condition improved until he left the Hospital, only to grow worse afterwards, and to necessitate a still longer treatment before final recovery. (See temperature chart).

In this case, there is little doubt that there existed in the beginning that condition of chronic alcoholic poisoning so carefully described by Lentz, under the title of chronic hallucinatory alcoholism. This, possibly due to the withdrawal of stimulants, passed soon into an acute febrile condition, recurrent, and lasting about a month, to be followed in its turn by the ordinary hallucinatory alcoholic insanity (Magan's third form of alcoholic insanity).

The second case I have to relate is that of a liquor-dealer, thirty-two years of age, a native and resident of Boston. He entered the Carney Hospital, June 5, 1886, in the service of Dr. Ferguson, to whose kindness I am indebted for permission to make use of the records.

Previous history, obtained from friends: One of the patient's uncles was insane for a time, and at the Worcester Asylum for six months. No record of any other mental or nervous affection in the family obtained.

Patient had been healthy, except as follows: He has been a constant drinker for two or three years, and at times has drunk very heavily. Last autumn, he had several epileptic fits, and he has fallen down stairs several times. Two weeks before entrance, he stopped the use of alcohol entirely for five days, but then resumed. He was at this time placed under the care of a physician, as he had begun to have hallucinations of sight, and was rapidly growing worse. Finally, being inclined to be violent, he was brought to the Hospital.

Present condition: On entrance, he appeared rational, but very nervous. There was tremor of the hands, and the patient was very weak, unable to remain standing. When put to bed, he plucked constantly at the bed-clothes — a prominent symptom all through his illness. A few hours after arrival he became quite delirious, having hallucinations of sight, and talking aloud in a disconnected manner.

Was ordered capsicum and a mixture of bromide and chloral.

June 7th. Quite delirious; slept about half an hour last night.

June 12th. Has been in a constant state of delirium, with hallucinations. Much plucking at the bed-clothes. Sleep poor; none last night. Bowels free. Takes nourishment well (beef-tea, milk, egg-nogg).

June 17th. The daily record shows but little change. He seems to understand something at times. When asked where he was, he replied, "in bed"; and, on being requested to repeat the answer, spelt "in b-e-d."

June 20th. Asked where he was last night, and, on being told, seemed greatly troubled, but soon forgot.

June 23d. Condition unimproved.

July 1st. Service of Dr. Bullard. When I first saw this patient, a few days previous to the beginning of my term of service, he was lying in bed, muttering or talking to himself, with evident hallucinations of sight and hearing. He was very restless, plucking constantly at the bed-clothes. The physical examination revealed nothing abnormal anywhere. The temperature was about 100° most of the time (most unfortu-

nately the temperature-charts have been lost). Pulse rapid, feeble. Examination of the urine gave negative results.

The weakness, temperature, and general typhoidal condition of the patient made us suspicious of some complication, as typhoid fever or pneumonia, but repeated and careful examinations gave no evidence in favor of either. There were no symptoms referable to the chest, and no abnormal physical signs in the lungs. There was no tympanites or abdominal tenderness; no rose spots. The bowels were regular.

July 4th. Temperature 100°, pulse 120. Condition unchanged.

July 6th. Temperature 99°, pulse 108. First sound over the aorta loud and clicking; second sound not heard there. Other cardiac sounds normal; no souffle.

R Tr. Digitalis m vii, i. d.

July 7th. Intelligence somewhat better. On the 5th, he used the stool for the first time: he had previously passed everything in bed. He now seems to understand questions a little better.

About this time, the patient was seen in consultation by Dr. Jelly, in order to determine the question of appointing a trustee for his property. Decision negative.

July 8th. Temperature 99° yesterday, 98.8° to-day; pulse 120 each day.

July 12th. No change. Patella-reflex doubtful; no ankle clonus. Fibrillary tremor of tongue.

July 15th. Is always worse in the afternoons, and during the last two has been so restless that he had to be kept in bed by force. He thinks that everything is on fire, and that he is being robbed, poisoned, etc.

July 17th. Constant attempts to get out of bed. Cannot be left alone for a moment.

July 25th. Intelligence much improved. Much more quiet.

July 28th. Knows physicians; calls them by name, and seems to realize that he is recovering from a severe illness.

August 4th. Seems to have his senses in full. Can talk intelligently, and knows all about his business affairs.

August 9th. Has improved steadily, and was, to-day, discharged.

In both the preceding cases we have to deal with patients in whom, we may presume, a certain tendency to mental disease exists. One had already himself been in an asylum; the other had had a near relative in one. In both, the existing affection was undoubtedly induced by addition to the excessive use of alcohol. The more prominent and noteworthy symptoms in these cases may be resumed as follows: (1) The duration of the disease, followed in both cases by recovery, in connection with (2) the peculiar temperature, rising at times to 102° or more; (3) the great weakness of the patient, especially in the earlier stages; (4) the typhoidal appearance; (5) the constant subsultus tendinum, and the plucking at the bed-clothes; and (6), which is less uncommon, the long duration of the peculiar form of delirium, which, in the beginning, precisely resembled that of delirium tremens, but continued for weeks, with a gradual change to less terrifying hallucinations.

I will not enter here into the question of the differentiation of these cases from typhoid fever and other

diseases, but will merely say that in the cases related there did not exist any of the more diagnostic symptoms generally seen in typhoid fever, except the general typhoid-like condition of the patient, and that in both cases the course of the temperature was unlike that usual in typhoid.

The medico-legal importance of such cases as these seems to me considerable. In both the preceding Dr. Jelly kindly consented to see the patients with me, in order to confirm my diagnosis, and to decide whether the patients were actually insane, and likely to remain so for a considerable period of time or whether the condition was a more or less temporary one, and the patient had a fair chance of recovery. In the first case, the actual question to be decided was whether the patient should at once be committed to an asylum, or whether it were advisable to wait; in the second, whether the patient was likely to remain in his actual condition so long that it was right and advisable that his property should be put in trust. In both cases the decision was in the negative, and rightly so.

I cannot help feeling, for these reasons, that it is very important that this class of cases should be early recognized, not only by specialists, many of whom have, undoubtedly, opportunities for observing them more or less often, but also by the general practitioner, into whose hands they, in the beginning, almost always fall. All the cases of this character that I have seen, or have been able to find accounts of up to the present time, have either been fatal within a few days, or have ended in recovery. At any rate, if death does not occur within ten days, the prognosis is more favorable than one would be led to suppose by simple consideration of the duration and character of the symptoms.

In regard to the pathology of these cases, although data sufficient to justify a decided opinion are wanting, certain facts bearing on this subject may be mentioned. Without entering into detail in regard to the pathological changes of the nervous centres, and their envelopes in alcoholism, we may refer to a few general results. Fournier states that autopsies after *acute alcoholism* in man show most commonly the following lesions: "cerebral congestion, more or less intense; meninges injected, veins and vessels of the pia mater gorged with blood, cerebral substance dotted with points, roughened (*sablé*), and, on section, permitting the escape of fine drops of blood; sometimes, also effusion of serum into the meninges."

In chronic alcoholism we find two classes of lesions in these organs: the one, which may fairly be classed as acute, though the result of chronic changes, comprising, for example, hæmorrhages, and perhaps some effusions; the other class, the subacute and chronic. Audouin, writing in 1868, says: "There is no need, I think, of insisting on the form that the nutritive trouble affects in the nervous centres, thickening of the meninges, the production of false membranes on the cranial dura mater, adherence of the pia mater to the cerebral cortex, hypergenesis of the neuroglia, fatty degeneration of the nerve-cells, of the capillaries, etc.; all this is perfectly well known." We will only mention the names of Mann, Thompson, Potain, Barrell, among the many who have written on this subject.

Vulpian, in his "Clinique Médicale de l'Hôpital de la Charité," speaks as follows: "The pathological lesions (of chronic alcoholism) are, to-day, well

known: they affect at the same time the meninges and the nervous centres. The lesions of the meninges are shown by thickenings, opacities, adhesions, etc.; those of the nervous centres by increase of the interstitial tissue, by destruction of the parenchyma, etc."

For a thorough and detailed description of the pathological anatomy of the nervous system in chronic alcoholism, we would, however, refer the reader to Lentz's book, "De l'Alcoolisme." In this the whole subject is carefully considered, and everything known at that time (1884) is stated. All pathological changes in chronic alcoholism may be referred to one of three distinct processes—circulatory troubles (congestion and inflammation), interstitial modifications (sclerosis), and fatty degenerations (steatosis).

In regard to the superacute form of delirium tremens we may mention two varieties, the "forme suraigüe" of Delasiauve, and the delirium tremens fébrile of Magnan. The dynamic form mentioned by Kraft-Ebing is probably only the secondary stage of the more violent forms. Kraft-Ebing refers Magnan's variety to delirium acutum.

Delasiauve's form is described by Lentz as follows: "The forme suraigüe of Delasiauve is remarkable particularly for its violence, its agitation, the intensity of the delirium and the gravity of the general condition. The nervous activity is prodigious: the patient has neither respite nor repose, no part of his body is free from movement; his face bloated, red, even violet, is contorted through the quivering of the muscles; his eyes roll in their orbits; his skin is hot and burning, is moist with a profuse and sticky sweat, which sometimes emits an alcoholic odor. The tongue may preserve its natural moistness; more often it is dry along the edges, and its surface as well as the edges are covered with fuliginous crusts. Usually the thirst is excessive, unquenchable; the respiration more or less labored; the alteration of the features indicates a profound prostration. As to the pulse, sometimes rapid and feeble, at other times it contrasts by its almost normal rhythm with the other symptoms. The mind is assailed by hallucinations whose rapid succession causes an incessant change. The words crowd each other so in the patient's mouth, that several demand utterance simultaneously and escape with difficulty in jerky, interrupted, often unintelligible sentences. In constant agitation (jactitation), the head and hands are moved abruptly in all directions whence the imaginary impressions seem to arise."

Magnan's form differs but little. Its principal distinctive feature is the rise of temperature which is apt to run high and reach 40°C., (104° F.), or even 42°C., (107.6° F.). This lasts without remission for two or three days or perhaps longer, and if not followed, as is usual, by a fatal result, gradually descends to the normal limit. This form also, is marked by the constant presence of muscular movements, subultus tendinum, jerking and contractions of the muscles all over the body and by the extreme muscular weakness which eventually results from this incessant activity. Lentz considers that the only symptom by which this form can be differentiated from that of Delasiauve is the possibility of prolonged remissions in which the consciousness may for a time become quite clear.

The presence of a high and continued fever during an attack of delirium tremens, is always a symptom of most serious import. It denotes either the presence of some severe and dangerous complication, as pneu-

monia or meningitis, or it implies, as is thought to be the case at times, by certain authorities, an affection of the cerebral heat-centres, and thereby a wide-spread and dangerous condition of the cerebrum. In ordinary cases of delirium tremens, there is no rise of temperature whatsoever.

Nücke says: "In a series of examinations of a small number of cases (eleven), a slight feverishness could be determined in one-third of them. The maximum was 38.8°C, 101° F. Any temperature above this, pointed to some internal inflammation, more especially pneumonia. In our cases a slight fever appeared in the evening only, as a slight rise of the physiological evening exacerbation of the temperature, never in the prodromal stage, commonly only on the first, rarely on the second day of the true delirium. Pulse and respiration were commonly only slightly increased in rate."

The cause of the fever in febrile delirium tremens is still doubtful. Magnan gives the results of five autopsies in which little definite was found beyond the injection and oedema of the cerebral meninges and a similar condition of the meninges of the spinal cord with injection of the gray substance of the latter. He himself, says that besides the hyperæmia, which sometimes ends in hæmorrhage and thus attests the very violent irritation of the nervous centres, we scarcely find at the autopsy anything except the more or less advanced alterations of chronic alcoholism.

That delirium tremens may be complicated by meningitis, is, of course, well-known, and many instances have been published, of which, however, I will only refer to the cases of Bonnemaison.

Whether such complication exists in any special case, can, of course, only be decided after a careful consideration of all the symptoms.

Whether in the febrile cases ending in recovery, the fever is due to complications meningitic or otherwise, or whether it is simply due to the violence of the cerebral irritation and the affection of the cerebral heat-centres has not yet been proved. The evidence in favor of the latter condition is up to the present time wholly negative. Considering the existence of heat-centres, as shown by Dr. Ott and others, proved, since no other cause of the high temperature is apparent, and since cerebral irritation evidently exists, it is assumed that the fever is due to the irritation of these centres. It must be remembered, however, that this is only a theory with some plausibility in its favor.

Nücke is in favor of this view. As in Magnan's cases the temperature cannot be simply dependent on increased muscular action "since now at the autopsy of such patients, beyond the more or less marked hyperæmia of the central nervous apparatus, and the changes produced in the system by chronic alcoholism, nothing was found which could explain the violent fever, we must in these cases regard the fever as directly dependent on the action of the lately introduced masses of alcohol upon the heat regulators."

We, however, do not believe that this question can yet be decided without further evidence.

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Clinical Memorandum.

AN ANOMALOUS CASE OF HÆMATURIA.

BY FRANK DUDLEY BEANE, A.M., M.D., NEW YORK.

Miss —, aged twenty-eight years, U. S., brunette, bilio-nervo-sanguine temperament, teacher, came under my care February 8, 1886. Mother died of phthisis following pneumonia; father, sister, and brother living, in good health. No hereditary tendencies. Six years ago the patient had pneumonia, with rapid and complete recovery. About three years ago, she suffered from chills and fever for a time, but has had no return, even in a modified form, for over two and a half years; namely, since she changed her place of abode. Habits of life good. Around the New Year of 1886, Miss — contracted a severe cold, treated it with simple remedies, and expected her distress to quickly disappear. But head- and backache and general *malaise* persisted; she also noticed that her urine was very reddish, and left considerable deposit in the vessel. This state of affairs continuing for about a month, she consulted me. Her headache was mild, of the character of "fulness." The backache, across the loins, also mild, but, like the headache, constant; a slight general *malaise* present, but not incapacitating her for attending to her daily duties; no nausea at any time. Digestive organs, heart and lungs, organically and functionally normal; menses regular and normal; no vaginal or uterine disease; urination normal as to amount, frequency, absence of distress. Injury, emotional or medicinal cause, hæmophilia, purpura, and malingering were out of the question. Careful examination of the urine resulted: acid, 1030, free from sugar, pus, renal epithelium, casts, etc., but large numbers of blood-corpuscles present, and account for the albumen found.

Diagnosis: *Hæmaturia ab causâ ignotâ.*

On the theory of a possible passive renal congestion from vaso-motor disturbance, I ordered infusion of digitalis and sweet spirits of nitre. Two weeks' regular and continuous use only resulted in somewhat modifying the head- and backache. In view of the possibility of a malarial cause, she was treated for two weeks with quinia (0.35), tannate of iron (0.10), t. i. d., with no effect upon the bloody urine. Five days under tannate of iron and caffeia, with sweet spirits of nitre and fluid extract of tritium repens, gave no result, except an increase in the amount and

lighter color of the urine. Quinia (0.20), hydrastia alba (0.10), and auro-sodic chloride (0.005), thrice daily for ten days produced no diminution in the hæmaturia. For the following eighteen days the patient took three pills of ergotin (5a gr. iii, Schieffelin) two hours after meals (that is, thrice daily), with no permanent improvement. For a day, now and then, a slight change for the better would be noticeable, then the amount of blood in the urine would be as great as ever. The headache, however, had disappeared; a slight backache remained. Mild physiological effects of the drug, such as slight dizziness and drowsiness, were present most of the time. On this account, I considered it prudent to make a change; therefore, for two weeks thereafter, she took a pill of ferri tannas, acid. gallic. et fol. digitalis, with the same effect as that produced by the ergotin. For the next ten days the ergotin treatment was resumed, with little or no benefit. From May 11th until June 12th, she faithfully took 0.10 of a 1% solut. glonoin thrice daily, but the picture became no brighter. On May 25th, I detected for the first time what appeared to be epithelia from the kidney pelvis (?); only two scales out of four specimens examined.

June 22d. She has been taking one gramme tr. iodine co. thrice daily for ten days. After five days' use, the urine "was lighter and showed less deposit, but the very next day there was a heavy deposit of what looked like congealed blood, and two days ago the same thing occurred" (patient's report). To-day, for the first time, I detected *one large hyaline cast* in six slides examined. Despite this continuous loss of blood, the patient has gained three pounds of flesh!

Concluding that this might be a unique, undescribed form of incipient chronic nephritis, a consultation with a prominent genito-urinary specialist followed. The opinion of incipient nephritis was endorsed, my view of a sojourn at a mountainous region, with strict attention to the skin and diet, approved, and a resumption of the ergotin recommended. On July 1st, I advised a Turkish bath every fifth day, in addition to the daily sponging and brisk rubbing with a flesh-brush. On July 9th, I urged her to journey to and remain in the Adirondack region for, at least, two months. There had been no improvement whatever in the hæmaturia, the only remaining sign of physical derangement. In September following, on my return from my vacation, I notified Miss —, but she did not report. In the early part of February last, I learned the following from a perfectly reliable source:

Instead of following the plan advised in July, the patient shortly afterwards began taking a nostrum said to be composed of hepatica and potassic nitrate as active ingredients, some claim the presence of a small amount of digitalis, and, in the meantime, continuing (as before) the daily examination of the urine (deposit method). By the time one-half the contents of the first bottle had been consumed, the urine became lighter in color, and the deposit less copious. Progressive disappearance of the blood followed, and had wholly (as far as objective examination could decide) when two bottles of the remedy had been taken. No further treatment was followed, and not the slightest relapse occurred. Skeptical as to the completeness of the cure (*sic*), I was enabled to make five most searching chemical and microscopical examinations of urine, passed before breakfast, and promptly delivered to me on February 15th, 17th, 22d, 23d, and

24th. Each specimen was normal in every respect. The lady has remained perfectly well and free from all urinary abnormalities to the present time (November 1st).

The consultation of a large number of authorities brought to light no similar case, and afforded me no further satisfaction than the following words of Roberts,¹ the italics being mine: "Cases also occur which are not referable to any of these categories, of which the origin is extremely obscure." Shall we accept the *post hoc* result as a legitimate *propter hoc* effect of the nostrum, or rather, attribute the coincident disappearance of the disease to the *vis medicatrix nature*, which, up to that time, had refused, or been unable to act because of the operation of certain unknown intimate systemic hindrances?

Reports of Societies.

BOSTON MEDICO-PSYCHOLOGICAL SOCIETY.

E. B. LANE, M. D., SECRETARY, *pro tem*.

MAY 19, 1887, DR. GEORGE F. JELLY in the chair.
DR. W. N. BULLARD read a paper entitled

CASES OF FEBRILE DELIRIUM TREMENS.¹

DR. BOLAND saw a similar case of meningeal trouble in a drinking man. Hebetude was the most marked mental symptom. The temperature was similar to that in Dr. Bullard's cases. It was called a case of typhoid. The man died, and, at the autopsy, one and a half to two ounces of pus were found beneath the dura, and none of the lesions peculiar to typhoid were found. The highest temperature was 103°.

DR. FOLSOM had treated the first case reported by Dr. Bullard at the City Hospital. The case resembled one of general paralysis from the ataxia, although the mental condition was quite different. For certain economic reasons, he was removed to the Danvers Lunatic Hospital. The ataxia in this case was due to the usual lesion in such cases; that is, peripheral neuritis. This is shown by sensitiveness to pressure over the nerve-trunks and atrophy. This case had been in an asylum at the age of fifteen. He was then active; had numerous hallucinations of sight and hearing, with delusions.

He spoke of another case who was never seen drunk, but inquiry among the servants revealed the fact that he was in the habit of getting drunk every night. As in the former case, there were delirium and peripheral neuritis, shown by emaciation of the legs and tenderness. This was thought by one surgeon to be a case of general paralysis. The mental state of these cases is that of dementia. They are extremely filthy in their habits and language. They look discouraging, but they usually recover.

DR. BULLARD called attention to a similar class of cases, described by Magnan as *febrile delirium tremens*.

DR. FOLSOM questioned whether Magnan did not describe a different class of cases.

DR. CHANNING questioned the propriety of the name selected by the reader for the group of symptoms described. The temperature in these cases was not unlike that seen in cases of mild, acute mania.

¹ See page 144 of this number of the Journal.

¹ "Urinary and Renal Diseases," Philadelphia, 1885, p. 150.

DR. BULLARD said that neither of his cases was malarial. The condition was rather a typhoidal one. He was not sure that there was a meningitis in these cases. While it is true that in some of Magnan's cases of febrile delirium tremens the temperature rose, as a rule, it fell off.

DR. COWLES saw several similar cases at the Boston City Hospital. Often, the delirium continued for some time. Examination was usually made with reference to a commitment to an asylum, but usually the commitment was postponed. These cases are of interest from their resemblance to general paralysis.

He had seen a case of meningeal trouble in a drinking man who was sent to the McLean Asylum. There were hallucinations of sight and hearing, and fumbling of the bed-clothes. The patient's condition was very low. He was apparently about to die, yet he made a good recovery in a few months. This case would drink much without showing it.

In another case, a man drank heavily for years. There were several symptoms of general paralysis manifested, and an unfavorable prognosis was given. The condition of this case was not as low as in the one just described, but delusions persisted for a long time. He, too, made a good recovery.

DR. JELLY said he saw Dr. Bullard's cases, and spoke of the difficulty of deciding between typhoid fever and delirium tremens on first seeing them. The first case he had thought would die. This case he considered subacute meningitis. The second case, he thought, would clear up.

He then spoke of the cases Dr. Cowles had mentioned. The first case was very different from those described by the reader. The condition was not as low, the patient was more active and extravagant, and wrote for the papers. The other case he had examined repeatedly, but had refused to commit him to an asylum. As the patient grew stronger physically, he became more violent, but it now transpires that he was allowed liquor. While he thinks it may not be right to call this condition acute meningitis, he is willing to call it subacute meningitis.

DR. BULLARD said Magnan classes acute and chronic cases together, under the term of febrile delirium tremens; they begin alike. In all cases where the temperature remains up death follows, and an autopsy reveals cerebral and spinal meningitis. He did not wish to insist on the diagnosis he had offered, but, for lack of a better term, he had temporarily decided on the title of his paper.

MASSACHUSETTS MEDICAL SOCIETY.

COUNCILLORS' MEETING, WEDNESDAY, FEBRUARY 1.

A STATED meeting of the Councillors was held at the Medical Library, Boston, on Wednesday, 1st inst.

The meeting was called to order at 11 A. M. by the President, DR. THOMAS H. GAGE. Seventy-seven Councillors indicated their presence by signing the roll.

On nomination by the Chair, the following delegates to other State Medical Societies were appointed: *Maine:* Drs. A. H. Johnson, of Salem; J. O. Marble, of Worcester.

New Hampshire: Drs. F. W. Draper, of Boston; B. H. Hartwell, of Ayer.

Rhode Island: Drs. R. L. Hodgdon, of Arlington; G. C. Webber, of Millbury.

Connecticut: Drs. A. M. Smith, of Williamstown; G. D. Colony, of Fitchburg.

New Jersey: Drs. A. Hosmer, of Watertown; A. C. Deane, of Greenfield.

Committees were appointed:

To Audit the Treasurer's Accounts: Drs. A. Wood, S. J. Mixer.

To Examine the By Laws of District Societies: Drs. S. D. Presbrey, J. C. White, F. W. Chapin.

The Committee on Membership and Finances reported names of Fellows to be allowed to resign, to retire, to have dues remitted, and also to be dropped for non-payment of dues, and their recommendations were adopted.

The Committee on Medical Diplomas, to which, at the meeting in October last, was referred the question of Fellowship in the Society, as embraced in By-Laws I. and II., reported, and recommended the repeal of the following sections of the concurrent vote of the Councillors and Society, October 7, 1874 (By-Laws, etc., pp. 27, 28):

That tickets or diplomas of Botanic, Eclectic, or Homœopathic colleges, or of colleges devoted to any peculiar or exclusive system of medicine, are considered irregular, and will not be recognized under any circumstances;

And that certificates from teachers who practise any peculiar or exclusive system of medicine, who advertise, or who violate in any way the code of ethics adopted by the profession in this State, will not be taken, even though the teacher himself be a regular graduate in medicine.

The Committee stated that by the adoption of this recommendation by the Council and Society it would be possible for the Council to add to the list of schools, whose diplomas are recognized for the purpose of admission to the Society, such eclectic and homœopathic schools as furnish the education required by By-Law I.; and the graduates of such schools who have renounced eclecticism, homœopathy, or other exclusive dogma, would become eligible to examination for admission to the Society.

The report of the Committee was accepted, and its recommendations were adopted.

The Committee appointed at the last meeting to consider the question of arranging meetings of Sections of the Society in some of the departments of medicine at the time of the annual meeting, presented the following recommendations, which were adopted:

That, beginning with the annual meeting in 1889, the hours of the afternoon session of the first day be occupied by meetings in Sections of Medicine, Surgery, and Obstetrics.

That the Committee to Procure Scientific Papers arrange for the organization of the above-named Sections, and, in preparation of the meeting, select topics of interest, and such as are capable of general discussion in their appropriate Section.

That the President be requested, in nominating the Committee to Procure Scientific Papers, to select its members with reference to the formation of these Sections.

That the Committee on Publications be requested to consider the advisability of providing for accurate reports of the discussions which follow the reading of the papers presented in the Sections.

NEW YORK NEUROLOGICAL SOCIETY.

MEETING held December 3, 1887. The PRESIDENT, DR. C. L. DANA in the chair.

DR. J. C. SHAW reported

A CASE OF CEREBRAL TUMOR.

The patient was a male, forty-one years of age, a jeweller by trade, temperate and previous history good. No syphilis.

In 1879 the patient had an attack of rigidity in the night followed by a deep sleep. March 19, 1882, he had an epileptic attack, the convulsion commencing in the left side of the face and extending to the neck so that the head was twisted to the left side, the eyes were turned upward. Thus far the patient was conscious, and had raised the left arm to strike upon his bench to attract help when his arm was seized with the spasm, and he knew nothing further. The attack was followed by sleep. He had had as many as four such seizures in a week. In one attack observed by the speaker, the left side of the face and the left arm had been principally affected. There had been no loss of consciousness in this attack.

The convulsions were preceded by a peculiar painful sensation in the roof of the mouth and teeth. There was more or less numbness of the left side, the tactile sensibility of which was diminished. Two points were recognized upon the left hand only when 4 cc. distant, while upon the right hand two points were recognized when 1 cc. distant.

January, 1886, headache commenced to be complained of, also nausea. Choked disk was now found. August, 1886, vision was almost lost. Headache and nausea continued, and mental cloudiness was apparent. February 4, 1887, the patient would fall to the right side, there was paresis of the left arm and leg and the patient could not tell when lightly touched. He was now weak, thin and confined to the bed. March, 1887, urine and feces were passed involuntarily. In May, a bed sore appeared. June 21st, the patient suddenly became comatose with puffing respiration chiefly abdominal. After thirty-six hours he recovered from this, but July 1st, died of exhaustion, extremely emaciated. The skull was found very thin, the veins of the meninges prominent. On lifting the brain, the posterior fossa was found to contain fluid, the origin of which did not appear. The left hemisphere showed no gross lesion. In the right hemisphere, the dura was adherent throughout a localized patch, dark-brown in color and occupying the lower part of the motor zone, beneath which softening appeared. The basal ganglia were free.

The pain in the teeth complained of at the commencement of the spasms had suggested a reflex from the dura to the fifth nerve. The reader considered it not illogical to conclude that the numbness, too, was to be explained by the irradiation of this reflex to other portions of the sensory tract. The apoplectic form seizure was probably due to hæmorrhage into the softened mass. The opinion of the members was requested upon this point.

DR. DANA inquired in regard to the character of the growth.

DR. SHAW replied that section had not yet been made, but he considered the growth a glioma.

DR. DANA found the growth occupying only the lower part of the ascending frontal, and not involving the parietal lobe.

DR. SEGUIN remarked that as the pia was *in situ* exact location was difficult; but that according to his judgment the lower part of the præcentral and the posterior extremity of the second frontal and of the third frontal convolutions were involved. The fact that Dr. Shaw had observed no laryngeal symptoms was interesting.

DR. BIRDSALL, referring to the sensory symptoms, remarked that the tumor was not simply a cortical lesion, it extended inward, and more central tracts had probably been involved.

DR. STARR added that sensory symptoms accompanied motor impairment, where the parietal lobe was invaded. As a rule, where cortical motor lesions were without sensory disturbance, the location of such lesions was anterior to the fissure of Rolando. Where sensory disturbances were also found, it was posterior to that fissure. In this case, however, it was not impossible that congestion posterior to the fissure would explain the symptoms.

DR. SEGUIN remarked that the subject of sensory disturbance in connection with cerebral tumors was most interesting and important. In his own experience a slight diminution of sensibility had accompanied lesions of the motor centers even when confined to the cortex. Nothnagel, at the Congress for Internal Medicine in Germany, had referred to slight tactile anesthesia in a large number of cases of tumor or lesion of the motor cortical centres. These were, however, without loss of the muscular sense. It was conceded that the muscular sense was located in the parietal lobe. In a case of Dr. Weir's with sarcoma involving the fasciculus for the face and hand, there was distinct anesthesia of the face and hand, but no loss of the muscle sense as tested by passive motion and weights.

DR. PUTNAM recalled a case of tumor which sprang from the falx between the two hemispheres and perforated the skull. At the time of death the whole left side was contracted. In this case numbness of the left wrist had preceded the motor symptoms. This tumor was posterior to the fissure of Rolando.

DR. FISHER asked the opinion of the meeting in regard to hyperæsthesia and pain under these circumstances. He recalled a case in which with the symptoms of a tumor restricted to one side there was great increase of sensitiveness and pain.

DR. STARR presented a case of combined sclerosis in connection with Dr. Putnam's paper. The patient had been under his care at the Polyclinic for nine or ten months. He was sixty-two years of age, of good family history and no syphilis. Eight or nine years ago he had commenced to complain of dull aching pain in the sacrum and down the legs. He had had no lightning pains but a progressive difficulty in locomotion until he was now markedly ataxic. There was increased tendon reflex at the knees. The case differed from that of ordinary locomotor ataxia in the absence of lightning pains, and the absence of the loss of the tendon reflex. There had been slight enuresis, but the urine was now retained. The pupils were contracted, but were not of the Argyll-Robinson type. They reacted both to light and to accommodation, but sluggishly. The tremor of the muscles of the face referred to by Gowers was present. It was a light tremor like that of parietic dementia.

The Chairman then introduced Dr. Putnam, of

Boston, the President of the American Neurological Association.

DR. PUTNAM presented a

REPORT OF THE EXAMINATION OF THE SPINAL CORD
IN A CASE OF COMBINED SCLEROSIS.

The patient was a female, fifty-eight years of age, whose father had died at eighty, and mother at eighty-three years. The patient had been divorced from a first husband on account of immoral conduct. Her second husband was also dissolute. When twenty-eight or twenty-nine years the patient's hair had fallen out. There had been no eruption noticed. The patient had used stimulants freely, but never in excess. Beginning in 1880 she had suffered with diarrhoea. Brown discoloration of the skin of the left arm and neck was then noticed. Subsequently the skin of the abdomen became a deep chocolate color and the pigment of the nipples and axillæ increased and deepened. When first seen by the reader her face was as dark as that of an Indian, and roughened with scales and exudation. In 1883 she was treated for anæmia and dyspepsia, the nerve affection not having appeared until two or three years ago. The first nerve symptom was numbness in the fingers. In November, 1886, she had lost power in the limbs, so that her gait was unsteady. She had difficulty, also, in the use of her hands, and was said to have fainted at one time with her teeth clenched. Her motor inability consisted in incoordination rather than paralysis. She had no lightning pains, but closing the eyes increased the incoordination, failing to reach the spot aimed at with her hands within four inches. On account of her mental apathy her sensory condition could not be made out. Her answers to questions were not correct. She had a ravenous appetite and the diarrhoea continued. Taste had been impaired for several years. During the following six months the legs became completely paralyzed, and the patient died April 8, 1887, six months from the onset of the ataxia and the paraplegia. The symptoms of ataxic dementia were prominent in the ravenous appetite and disordered taste, leaving the diagnosis perhaps open to question as examination of the brain was not permitted. Spitzka has found degeneration of the lateral tracts in dementia, but coincident degeneration of the pyramidal tracts was not present in these cases.

The post-mortem examination showed in the lower ileum several ulcers, apparently tubercular in origin. In the cord there was softening of all the tissues at the level of the fourth dorsal nerve. There was extreme whiteness and no trace of vascularity in this part. The cord was examined from the region of the first lumbar to that of the second cervical vertebra. The posterior columns, through their whole extent, showed a condition like that of a primary sclerosis. At the level of the twelfth dorsal vertebra there were two sclerotic areas, one external to the column of Goll in the column of Burdach. The lateral columns appeared as described by Spitzka in his two cases of primary dementia. The septa between the nerve-spaces were broken down so that holes appeared in the sections with fragments of myeline and granular cells. These changes were confined to the lateral pyramidal columns, up to the middle cervical region where the direct cerebellar tract of both sides took on the same appearance and the diseased lateral area became less.

It was noted that the softened spot might have been due to anæmia or to myelitis. It was against the latter theory that the vessels were here shrunken and there was no transudation of white globules to be seen. The degenerations were not in direct relation with this softened tract. The posterior nerve-roots were healthy. The anterior nerve-roots were affected with different degrees of inflammation.

The reader referred to Strimpell's and Gower's classifications, also the general question of primary systematic sclerosis of the spinal cord.

DR. STARR considered that the exhibition of specimens placed the diagnosis of combined sclerosis in this case beyond doubt, and inasmuch as the case had presented symptoms not recognized as belonging to this condition, the paper was one of unusual service, by enlarging our clinical picture of the disease. The exact pathological difference between the condition of vacuolization in the lateral column and that of the ordinary sclerosis of degeneration was a matter of interest. In these specimens the lateral columns were vacuolized and in the posterior columns the connective tissue was increased; yet both processes were called sclerotic, when they probably should be differently classed.

Dr. Starr presented sections, one from the original case of Friedreich's disease, and one from a case of ordinary sclerosis, each presenting the distinctions referred to in Dr. Putnam's paper.

DR. SEGUN considered the change in the lateral columns in Dr. Putnam's specimens in front of the region of the crossed fasciculi. In one section it was even in front of the transverse diameter. The same violation of the limits of the pyramidal fasciculi had been observed in a case of his own. In this case the paresis predominated and the patellar and solar reflexes were exaggerated. In another case referred to him by Dr. Hun, of Albany, ataxia and posterior column symptoms predominated, and there was no tendon reflex. There was anesthesia, fulgurating pains, and ataxia of the legs and hands with gradual paralysis. One or the other lesion would predominate in such cases, producing variety in the symptoms. Errors in diagnosis were easy. Nodular or insular sclerosis, if distributed in the posterior and lateral columns, would give the clinical picture of combined sclerosis. Charcot had even lectured upon a case as spastic paralysis, to find upon autopsy nodular or insular sclerosis. Diagnosis should be guarded.

DR. BIRDSALL, referring to the specimens under the microscope, found in the posterior columns ordinary sclerosis, and in the lateral columns separation and swollen myeline sheaths, the axis cylinders being in position in some places, and in others simply spaces between the neuroglia elements as though the myeline and axis cylinders had dropped out. In judging of this condition, one had to remember the differing normal structure of the two regions, the finer fibres and finer neuroglia elements in the posterior columns. With Dr. Seguin, he found the degenerated area forward of the transverse line of the central canal and extending even half-way up the anterior horn, taking in the region described by Gowers as the ascending cerebral tract, obtained by physiological and embryological data. The speaker inquired whether there had been any chance for post-mortem softening of the cord which would explain the vacuolization.

DR. PUTNAM thought that there had not been any

such chance as the specimen had been dropped into Müller's fluid within one hour after removal. The nature of the change in the latter column showed that it had been rapid from the fragments of granular myelium scattered about, and it was suggested that the spaces might have been produced by albuminous fluid which had been poured out and coagulated. The section showing the degenerated area anterior to the transverse diameter, had been taken from the upper cervical region, where the direct cerebellar tract carries the area forward.

Of the three varieties of mixed sclerosis, the spasmotic was represented by a case of Strümpell's, the ataxic by Dr. Starr's case, and the paralytic by a case of Strümpell's and his own.

DR. DANA had given special study to this class of cases, and saw no reason to change the opinions formed one year ago. The classification referred to as Dr. Strümpell's, had been arrived at by himself before reading Dr. Strümpell's paper. It would probably occur to any one who studied the subject. The most frequent combination was tabes with paralysis atrophy and contractures. In other cases the tendon reflex and ankle clonus disappeared last and the patient becomes a case of typical tabes before death. Dr. Putnam's case resembled his own, and he believed the trouble to have been primarily a myelitis encroaching upon the gray matter and extending up and down. The vacuolization was an argument in favor of secondary change, he had seen it in several cases following an acute myelitis.

DR. PUTNAM stated that as the degeneration was found both above and below the softened area, it could not have been secondary to it; also the involvement of the whole lateral tract would have required a focal lesion above, which was not obtained.

DR. DANA presented the calvarium and brain of a young woman trephined over the site of an old fracture for epilepsy and maniacal attacks. The operation had been done by Dr. Robert Abbé with all antiseptic precautions, yet persistent high temperature followed, with death on the tenth day.

A small subdural cyst was evacuated at the time of the operation. The autopsy showed old leptomeningitis with recent meningitis and acute red softening under the injured part. The question of the safety of trephining was brought up.

Recent Literature.

The Medical Register for New England. By FRANCIS H. BROWN, M.D. Boston: Cupples & Hurd. 1888.

A mere list of the principal contents of this new edition of Dr. Francis H. Brown's "Medical Register for New England" is sufficient to show its absolute indispensability for medical practitioners, dentists, and pharmacists in active business all through the New England States for almost daily use, and its utility as a book of reference for many outside of New England—provided the work is carefully done, and of this Dr. Brown's painstaking accuracy, as exhibited in previous editions, is a sufficient proof. This new edition contains forty more pages than the last edition of 1884, and is more clearly printed. Among its valuable contents is to be found statistical and practi-

cal information concerning medical, dental, and pharmaceutical societies and associations, hospitals and dispensaries; charitable asylums; professional institutions of education; laws and ordinances relating to medical men; lists of medical examiners (coroners); pension surgeons; medical officers of the State militia and public institutions; museums, libraries, prizes; lists of surgical instrument makers, chemists, microscope dealers, etc., together with descriptive and local lists of members of the New England medical societies.

The lists of members of State medical societies were received from and revised by the secretaries of the societies, and are as correct as such lists can reasonably be made. A liberal amount of space is also devoted to a short history, to the form of organization, and to a list of the officers and New England members of all the important national medical societies and associations.

The Practice of Medicine and Surgery Applied to the Diseases and Accidents Incident to Women. By W. H. BYFORD, A.M., M.D., and HENRY T. BYFORD, M.D. Fourth edition. Philadelphia: P. Blakiston, Son & Co. 1888.

Dr. Byford's work, the fourth edition of which has just appeared, comes with much fresh matter, and a very thorough revision of the old. It is a personal book, embodying largely the results of the authors' extensive experience, and borrowing from others only to a limited extent. He labors under the disadvantage of not possessing a good style, so that much of what he says fails of its due effect from lack of clearness of description. This is especially true of the first few chapters on the "Anatomy and Physiology of the Female Pelvic Organs," and the "Examination of the Female Pelvic Organs." There is so much minuteness of detail that it strikes the reader as unnecessary and tiresome, especially as the descriptions are difficult to understand.

This criticism applies with most force to the theoretical part, for when the author comes to the discussion of the various forms of uterine and pelvic disease, he is interesting and instructive. The book cannot, perhaps, vie with other well-known text-books, nor does it seem to us well adapted to the needs of the student, but the general practitioner and the specialist will find it well worth their while to own and consult it. There is a great deal with regard to the general treatment of uterine disease and its complications, which is very rich in suggestions.

The illustrations, many of which are original, add distinctly to the value of the work.

—Dr. J. D. Whitehouse, of Santiago de Cuba, reports to the *Medical Record* a case of poisoning (non-fatal, but with severe symptoms), in a young girl, from seven-and-one-half grains of antipyrine.

—English patients and physicians at Maloja and Moritz are signing quite extensively a memorial to the Swiss Government to permit English physicians to practice there, which was prohibited by statute recently. The petitioners say that they went to these places expecting to be treated by their compatriots and that if the restriction remains in force, they will be forced to go away, and the popularity of these resorts among English-speaking people will be seriously affected.

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Medical and Surgical Journal.

THURSDAY, FEBRUARY 9, 1888.

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THE COMMITTEE OF THE PHILADELPHIA
 COLLEGE OF PHYSICIANS AND THE NA-
 TIONAL QUARANTINE.

We have already reviewed, with editorial comments at some length,¹ the report of a Committee of the College of Physicians of Philadelphia appointed "to consider the present danger of the importation of cholera into this country, and to secure concerted action among the medical societies in urging upon the State and national authorities the adoption of a uniform and efficient system of quarantine for all exposed ports." This report was made to the Society October 28, 1887, and is now reprinted, together with an address from the same Committee (Drs. J. C. Wilson, Shakespeare, and Cleemann) to the medical societies of the United States, repeating their recommendation that the societies take strong and immediate measures to secure Government management and control of quarantine.

It is not pertinent to the question to discuss the general matter of quarantine, although a great deal might be said of the value of a cholera-scare in inducing local authorities to make sanitary improvements, and to adopt a health-code of lasting value. There might even be a suggestion that more permanent good would come to the city of Philadelphia by sustained efforts to improve the character of their rulers, and to clean out some of their filth than by any quarantine agitation. There are, too, Philadelphians who think that an epidemic of cholera in their city would be an actual benefit to them from that point of view.

However, we are quite willing to admit the need of a sensible medical inspection at our ports of entry adapted to the individual requirements of the several ports; but we insist that it should be practical, and not, for instance, make the same requirements in two cities having such different climates, local conditions of filth, character of commerce, and distance from pestilence-centres, as New Orleans and Boston. We have already referred to the very inefficient quarantine at New York, as shown by the report of the New York State Board of Health and by the discussion at

the last meeting of the American Public Health Association. We are quite prepared to admit the Philadelphia Committee's statement that Baltimore and Philadelphia are worse.

The query naturally arises, first, whether Government control of quarantine is practicable in case it is considered wise. We believe not. We should oppose it in Boston, because we think that our medical inspection is better than any the National Government would give us, and because we would prefer to take our chances of correcting any defects or mal-administration through local, rather than through general, officers. New Orleans would take the same ground, and other important ports, for one reason or another, would do likewise.

In the second place, is the measure wise? We also believe not, at least not at the present time; and one of the strongest arguments for our belief is the report itself of the Philadelphia committee, which strikes us as being theoretical, and not based upon sufficient investigation and knowledge. We feel quite sure, whether we should be ultimately prepared to advise a general government quarantine or not, that any measures adopted now to secure that end, even if successful, would result only in disappointment. We doubt whether it will ever be practicable to so harmonize and adjust the conflicting interests of the several States as to make a national system of maritime quarantine practicable. At all events, it might be well to see how we succeed in wrestling with the tariff question; and then go to Congress, if we think best, with our national medical inspection at ports, but only when we have ready a definite plan worked out to the least detail, and upon which the several health authorities can agree.

As to immediate measures, the greatest good has come from the Massachusetts law giving the State Board of Health coordinate power with the local Boards so that, if any town is not doing its full sanitary duty, the State can assume control, and do whatever the requirements of the case demand to protect the public health. Let this law be extended to every State in the Union, and, at the same time, let an Act of Congress be passed giving the government at Washington power to assume control whenever State and town are both derelict. If Dr. Davis's bill can also be passed for a Health Commissioner or Health Bureau connected with the Interior Department, we not only have good ground to stand upon, but we can gradually evolve a sanitary inspection at our ports and prominent railroad centres that will be efficient, practicable and satisfactory.

—The *London Medical Record* has undergone a change in its publishers and its name. It is hereafter to be called the *London Medical Recorder*, and the first number will appear on the 20th instant. The new series will be exactly the same in size and style as the old, with a reduction in price from 18s. to 12s. per annum.

¹ November 3, 1887.

THE SANITARY CONDITION OF THE WATERTOWN ARSENAL.

It appears, from what we learn, that heretofore in our army service, on account of the limited number of commissioned medical officers available to fill all the demands and requirements at so many different rendezvous, hospitals, depots, forts, etc., scattered over such a wide extent of country, the United States Arsenals have been compelled to depend upon neighboring physicians and surgeons, under contract, for attendance on the officers, enlisted men and their families.

Of late, however, since the Indian question is nearly, if not quite, settled, and the troops are being concentrated in large posts in regiments, the Government has considered it wise to make a change, and last summer ordered commissioned medical officers to duty at the arsenals in Watertown, Mass., Watervliet, N. Y. and Frankford, Pa.

It is especially gratifying to the medical profession that already, as will be seen by reference to the correspondence and report of Surgeon J. C. McKee, contained in Ex. Doc., No. 40, of the National House of Representatives in the first session of the Fiftieth Congress, an important improvement, which has been wanted, recommended and asked for many years back, will probably be carried out this coming spring and summer, near our homes in Boston.

Why this dangerous condition of affairs at the arsenal at Watertown, Mass., has been allowed to exist for so many years without attracting any attention, is one of those mysteries to which the proper explanation fails to present itself to the mind of the simple sanitarian.

In justice to Lieutenant-Colonel F. H. Parker, ordnance department, commanding officer, we are authorized to say that since he came in command, some four years ago, he has made every effort, by repeated reports, to have this improvement made. He also had plans and estimates made for the work, but Congress as steadily refused the appropriation until now the prospects look encouraging that the money will be forthcoming this session.

The request for an appropriation of \$11,908.96 for improving the sanitary condition of the Watertown Arsenal is now before the Appropriation Committee of the House, at Washington, with the endorsement of the Treasury Department, the War Department, and the Ordnance officer, and, as we have already said, by no means for the first time. Here seems to be a truly legitimate opportunity to dispose of a bit of surplus.

Between the middle of August, when he first reported for duty, and the middle of November, Surgeon McKee had two cases among those under his charge, of filth diseases, both assuming a malignant type and going on to a fatal termination in spite of treatment.

A calculation based upon the history of the Arsenal taken from its records, shows that the soil of the few acres of Arsenal grounds has been called upon

since 1814, to receive, absorb, and assimilate about one hundred and seventy-four tons of solid or fecal matter, and 11,098 hogsheads of liquid or urinary matter, in addition to a similar amount of slops, grease, etc., owing to the vicious and dangerous open cess-pool system which prevails. Under such circumstances we are not surprised that the report of the post-surgeon speaks of the soil, land and gravel as filled and saturated with putrid organic matters and ill-smelling gases, and of the conditions and surroundings obtaining at the Arsenal as in the highest degree favorable for the outbreak of epidemic disease.

Accepting the facts as stated, we most heartily endorse the further opinion expressed that, after this warning, further hesitancy and delay on the part of those in authority will not only be reprehensible but absolutely criminal.

THE MUSICAL PRODIGY, JOSEF HOFMANN.

NUMEROUS complaints having reached the Society for the Prevention of Cruelty to Children that the musical prodigy, Josef Hofmann, was injuring his health by his numerous public concerts in New York and other cities, a medical examination of the boy's condition was made at the office of Mayor Hewitt, last week, by Dr. Sayre, the physician of his manager, Mr. Abbey, Dr. Joseph D. Bryant, of the Health Department, and Drs. Janeway and A. McLane Hamilton. The conclusion at which they arrived was that his functions were at present all in good order, but, while there were no indications that his system had sustained any injury thus far from his public performances, they advised that in the future the concerts at which he appeared should be limited to four a week, and that, so far as possible, there should be an interval of one day between the performances. To this proposition the manager and Hofmann's father readily assented. Mr. Gerry, President of the Society named, has communicated to the father the offer of a citizen of New York to furnish a fund of \$50,000 for the education of the lad, provided he is not allowed to give public performances until he has completed a thorough course of study, and attained a substantial maturity of growth. Mr. Hofmann is said to have refused this offer, stating that, at least, \$100,000 would be necessary to provide a sufficient income for the purpose named: and it is possible that this amount may be raised by the admirers of the boy's genius, who fear that he may sink to mediocrity or suffer physical collapse unless his energies are conserved, and his talents developed through judicious training.

THE FIRES AT THE NEW YORK HOSPITAL FOR RUPTURED AND CRIPPLED.

On the evening of Sunday, January 29th, a somewhat serious fire occurred in the Hospital for Ruptured and Crippled, at the corner of Lexington Avenue and Forty-Second Street; but, by the pres-

ence of mind of the resident physicians and nurses, and the prompt and efficient services of the members of the Fire Department, all the children were gotten safely out of the building. Unfortunately, however, Mary Donnelly, the head cook of the establishment, who was in bed at the time, and whose presence in the house no one seemed to think of, was suffocated by the smoke that filled her apartment. During the next few days, strange to say, there were several other slight fires in the institution, all of which were quickly discovered and extinguished before any serious damage was done; and on February 2d it was found that these, as well as the more serious fire of Sunday evening, were the work of one of the patients, a bright and attractive little girl of eleven, who had been an inmate of the institution for nearly three years, under treatment for torticollis resulting from an attack of measles, and who had always been a special favorite among the other children and the attendants of the Hospital. On February 3d, the youthful incendiary was taken to the Yorkville Police Court and committed to the care of the Society for the Prevention of Cruelty to Children, to await the result of the coroner's inquest in the case of the unfortunate cook.

MEDICAL NOTES.

— In the *North American Review* for January, are printed a series of the autographs of Napoleon, written at various epochs in his eventful life. Starting in his earlier years with a bold and clear signature, it retains most of these characteristics in the days of his greatest successes; but parallel with the declining fortunes of the great man, is a degeneration of his autograph, until at the end we have nothing more than the rudest, characterless scrawl. The autographs suggests to *Science* the ravaging changes in the nervous system that were the physiological concomitant of the turmoil raging in the hero's mind.

— "Doctor," said the patient, "I believe there's something wrong with my stomach." "Not a bit of it," replied the doctor promptly. "God made your stomach, and he knows how to make them. There's something wrong with the stuff you put into it, maybe, and something wrong in the way you stuff it in and tamp it down, but your stomach is all right." And straightway the patient discharged him. My! how a man does hate to have the doctor tell him the truth. How he hates to be told that he ought to be sick, and deserves to be ten times sicker than he is. — *Brooklyn Eagle*.

— Dr. William Osler tells the following interesting story to the *Canada Medical and Surgical Journal*:

"A young woman about twenty-eight years of age, well developed, of medium size, had had two previous labors, which were not difficult. She had expected her confinement in a week or ten days, and had got on the train to go to see her husband, who was working

'down the track.' Having a slight diarrhoea she went to the water-closet, and while on the seat labor pains came on and the child dropped from her. Hearing a noise and groaning, the conductor forced open the door and found the woman on the floor in an exhausted condition, with just strength enough to tell him that the baby was somewhere on the track, and to ask him to stop the train, which was running at the rate of about twenty miles an hour. The baby was found alive on the side of the track a mile or more away, and with the mother was left at the station where I saw her. She lost a good deal of blood, and the placenta was not delivered for some hours."

— The *Lancet* says that, according to the law of China, the punishment inflicted on the murderer of a father, mother, brother, husband, uncle, or tutor, and on traitors, is that appalling process known as *ling-chie*, or slow death. The fact that the crime has been committed under the influence of insanity procures no mitigation of the dread sentence, and the miserable culprit is sentenced to be cut into 24, 36, 72, or 120 pieces, a large proportion of which must be accomplished ere the executioner dares to touch a vital part, and end the torture of the victim. Only in certain cases does the Imperial clemency grant death after the eighth division. The commonest form of this penalty is that of twenty-four cuts; and the executioner prides himself on the anatomical skill with which they are administered. The victim being bound to a cross, the butcher by the first two cuts removes the eyebrows, by the third and fourth the shoulders, the fifth and sixth the breasts, the seventh and eighth the flesh of the forearm, the ninth and tenth the flesh of the arm, the eleventh and twelfth the flesh of each thigh, and so on.

—English exchanges comment with considerable severity on the fact that in virtue of a recent law forbidding the importation of contract labor, a trained nurse who had been engaged in London to take charge of the nursing department at the Pennsylvania General Hospital, was forbidden to land at New York, and was sent back by the next steamer, on the ground that her engagement constituted an infringement of the law. The same fate is probably in store for Dr. Heneage Gibbs, late of Westminster Hospital, who accepted an engagement as professor of Physiology at the University of Michigan. The local press, it is said, stimulated probably by disappointed candidates, or unscrupulous rivals, have lately called attention to the terms of his engagement with a view to putting the law in force should he venture out. It is well-known that this same law has been invoked to prevent the settlement of one or more clergymen called over from England. Surely this is protection run mad.

NEW YORK.

— A most extraordinary accident occurred at the Roosevelt Hospital on the first of February, when Charles McLean, a young Scotch patient, was fatally injured through the carelessness of the hospital order-

lies. He had had an abscess of the hip operated on, and while still under the influence of ether, was removed from the operating-room on a roller stretcher. One of the orderlies in charge propelled the stretcher carriage, while the other went on ahead to open the door of the elevator-shaft in the hall. Having done so, he started the elevator from an upper floor, and, without waiting to see whether it had reached the operating-room floor, went away to attend to other duties, leaving the door of the shaft open. Unfortunately, however, the elevator still remained above, and the orderly with the roller stretcher pushed the latter into the open shaft: when the patient, with the canvas stretcher on which he was lying, fell headlong to the bottom of the shaft. He was found to have sustained a fracture of the skull, and died in about an hour, without having recovered consciousness.

—Through the good offices of Commissioner Brennan, of the Department of Charities and Correction, Dockstader's Negro Minstrel Troupe recently gave an entertainment at the female insane asylum on Blackwell's Island, which was thoroughly enjoyed by the 800 of the 1,600 inmates who were permitted to be present at the performance.

—On the 3d of February the Kings County Grand Jury, which has been investigating the management of contagious diseases in Brooklyn, read a presentment in which they express the opinion that the present system is inadequate to the needs of the population. They state that there is but one ambulance for the removal of small-pox patients, and one reliable man to perform the necessary duties, other than those of a physician, which the public safety demands. They believe that a regular and systematic weekly inspection should be made by the Health Board of the low-priced lodging-houses, by the distribution of the disease from which the recent epidemic of small-pox in the city was caused. Having recommended that an additional ambulance should be purchased, and that sufficient attendants be engaged to meet an exigency which might suddenly arise, they ask that a further appropriation should be made for the erection of a small-pox hospital provided with all modern conveniences for the successful treatment of the disease. The estimated cost of the erection and equipment of such a building is about \$100,000, while the amount at present in the treasury, at command for the purpose, is only \$20,000. Having urged that the new hospital be built as quickly as possible, though not within the corporate limits of Brooklyn, they conclude in the following words: "A municipality approaching a population of a million people—the third city in the Union and fourth English-speaking city in the world—should have such a complete health and sanitary system as at all times to inspire confidence that any outbreak of pestilence of any description can be taken care of, and not justifiably excite the alarm or timidity of its citizens."

—Dr. Griffin, the new Health Commissioner of Brooklyn, who went on duty the 1st of February, has already commenced an active campaign against the

small-pox prevalent there. He has detailed almost every physician employed by the city to this special duty, and has announced his intention to prosecute all medical men and others, who neglect to report cases of small-pox.

Miscellany.

DIABETES MELITUS IN AN INFANT.

Dr. W. H. DEANE reports, in the *Medical Record*, the following case: "On November 20, 1887, a little girl, aged one year and three weeks, was brought to my office by her mother, who said that the child was somewhat fretful at night, seemed rather thirsty, rolled its head while sleeping, occasionally awakened from sleep with a sudden scream, and, she thought, was passing more urine than it should.

"The child was bright, fairly well nourished, with no marked evidences of any serious trouble. The child was, with some difficulty, cutting several teeth, and I considered the symptoms as due to that cause. The increased secretion of urine, which the mother had referred to, I thought very little about. In a very few days I was called to see the child, and found it in about the same condition as when at my office, except that it had begun to show some emaciation. I then asked for, and after some difficulty, on account of the extreme youth of the patient, obtained a specimen of the urine, which I found, by each of the copper, indigo, and fermentation tests, to contain a considerable amount of sugar—about ten grains to the ounce. I immediately began administering codia, and restricted all sugar from the diet. Nevertheless, emaciation rapidly progressed, digestive disturbances became more or less troublesome, the rolling of the head and crying out suddenly in sleep continued, and on January 4th the child passed into a well-marked condition of diabetic coma, and succumbed in twenty-four hours. Under my treatment the amount of urine diminished somewhat, although the specific gravity remained at 1040, and the sugar was continually present.

"The extreme youth of the patient, the rapidly fatal termination, and the continued presence of symptoms of brain-irritation, have caused me to regard this case as one quite singular."

MEDICINE vs. BAYONETS.

GENERAL SIR NEVILLE CHAMBERLAIN, of India, paid a very high compliment to the humanizing and civilizing effect of the Indian medical service in a recent letter to Prof. D. B. Smith, and showed that from a political point of view that service has been of the greatest value. He says:

"You are right in supposing that I have expressed an opinion that the peaceful and civilizing influence of the work done in the dispensaries and by regimental surgeons on the frontiers of India, has been in political importance equivalent to the presence of some thousands of bayonets. I have held this opinion, because no amount of military coercion or of purity of administration could have exercised the same pacifying effect on the heart of the nations that has been produced by the sympathetic care of and successful

treatment of diseases, many of which had been previously considered incurable. Throughout my service on the frontier of India I have never known a time when the halt, the lame, and the blind have not flocked into our cantonments or into our camps in search of relief from suffering; and, however distasteful may have been the sight of our soldiers, or however galling the idea of subjection to British rule, the people have come with confidence from far and wide to seek medical aid. The fame of the English doctors has spread beyond our frontiers into the remotest hills and glens, and the difficulties overcome and sufferings endured in order to reach a medical officer might seem incredible to those unable to realize what it is to be living under conditions devoid of medical and surgical aid. . . .

"It is because of such unexpected philanthropy that, as conquerors, we hold a position in the minds of the people which would not otherwise be possible. The great question to be solved in the future is that of how to bridge over the chasm which separates the rulers from the ruled. The means of accomplishing this end may be mainly looked for in the sympathy to be created between the races; and I think the medical profession will always have it in their power to give most important aid towards the attainment of this object."

AN EXTRAORDINARY BRAIN INJURY.

The infliction of fatal injury to the brain by the thrusting of pointed objects beneath or through the upper eyelid, through the orbital plate into the brain, has occurred a number of times. The *Medical Press and Circular* after referring to the fact that baby-farmers have been known to procure the death of their charges by pushing needles in, and that not long since an irascible "fare" thrust his stick some four inches into the brain of a cab driver in the same way, goes on to describe a certainly remarkable form of brain injury. The effect of the sort of injuries above referred to is generally very prompt, and within an hour or two — even if not at once — serious symptoms manifest themselves. A curious exception to this rule was the subject of an inquiry recently at this London Hospital, the victim being a commercial traveller, thirty-two years of age. Until the last few weeks the deceased is stated to have been in good health, and to have kept a set of books most accurately. He was admitted into the hospital complaining of a pain in his head and feeling drowsy. On the 10th inst. symptoms of apoplexy (?) appeared, and he died a few hours later. On making a post-mortem examination of the brain, an abscess, the size of a turkey's egg was discovered at the base, evidently not of recent formation, inside of which was a penholder and nib, measuring altogether some three inches in length. This foreign body must have been in its position for some considerable time, it being embedded in bone. No trace of injury to the corresponding eye or nostril could be detected. The widow of the deceased had never heard him allude to any injury of the kind, and it is quite unknown how and when it was inflicted. The pen and nib were of the ordinary school pattern, and there is nothing to show that the injury was not inflicted years ago, when the deceased was at school. Altogether, it is a very remarkable case and demonstrates the extreme tolerance of the

brain to very serious injury and to the presence of a foreign body, under certain circumstances. It is fortunate, in one sense, that he died in a hospital; in private practice his death would have been certified as due to apoplexy, or, in case of an inquest, to "visitation of God."

THE HYPNOTIC ACTION OF BOLDIN.

It has been known for some time that the glucoside which is contained in boldo-leaves, and which is called boldin, had hypnotic properties.

Recently French physicians have been experimenting largely with the drug. Their results have been summarily stated by Dr. Juranville in an extensive work on the subject.

According to Dr. Juranville, as reported in the *Therapeutic Gazette* from his original article in *Le Progrès*, boldo, or the glucoside boldin, is superior to any other hypnotic or narcotic (such as chloral, opium, etc.). It is easily taken, and is unaccompanied by any disagreeable symptoms. Indeed, the author asserts that its use increases the appetite and greatly strengthens the patient. Doses of five to ten grammes (77 to 154 grains), have been given daily without causing any evil results. The sleep produced by the drug is similar to natural sleep in every respect; in this respect the drug is superior to all other hypnotics. The respiration becomes regular and quiet. Excited patients, suffering from hysteria and other nervous complaints, who for a long time have been unable to sleep, sank into a most refreshing and tranquil sleep, under the influence of boldin.

The amount of the glucoside contained in boldo-leaves is about three per cent.

The drug may be given in capsules, in doses of .2 gramme ($\frac{3}{16}$ grains), or, as an injection, of 100 grammes of water ($3\frac{1}{2}$ ounces), and 5 grammes (77 grains) of boldin.

PERITONITIS ANTE-PARTUM.

A CASE of the above affection recently occurred in St. Bartholomew's Hospital, and is described by Dr. Gow in the *Edinboro' Medical Journal* for January, 1888.

The patient was a stout, well-made woman, aged thirty-two, who had had eight children previously, the labors in all these cases being natural. She was seen by the reporter for the first time on the morning of May 9th. She complained of frequent, sharp abdominal pains, not resembling labor pains in character. Her lips and cheeks were livid, and beads of sweat stood on her brow. Her tongue was slightly moist. There was frequent retching. The hands and feet were cold and clammy, and the pulse was barely perceptible at the wrist, and could not be counted. The respirations were rapid, being about forty to the minute. She was quite conscious, and complained of great pain on turning onto her left side. The abdomen was distended, and the fetus could be plainly felt, apparently within the uterine cavity.

Per Vaginam. — The cervix was soft, the os being dilated to about the size of a five-shilling piece. The membranes were unruptured. The head was felt to be presenting. As she complained of constant desire to pass water with inability to do so, a catheter was

passed, and about one and a half ounces of urine drawn off.

The history given by the patient was that one month previously her right leg slipped through a hole in the floor, nearly as far as the groin, owing to some rotten boards giving way. Since then, she says, she has never felt well. She had reached nearly the full period of gestation, and was expecting to be confined every day. She remained in fairly good health until the evening of May 8th. At 6 p.m. of that evening she was seized with sudden abdominal pain, and vomited. She was visited by one of the students, who found her complaining of abdominal pain and distension. She was belching up wind, but otherwise did not seem seriously ill. The pulse-rate was said to be then about 90. She was ordered some mild carminative.

Seeing the desperate state of the patient, it was decided to perform version, and remove the child as rapidly as possible. Before commencing the operation the patient's abdomen was rapidly auscultated, but the fetal heart could not be found. The patient was placed on her back, and version commenced. To subdue the resistance of her abdominal muscles a few whiffs of chloroform were administered tentatively; but, as it made the patient more cyanotic than before, it was discontinued. Just as the knee of the child had been reached the patient ceased to breathe. In the hope of saving the child an incision was made into the abdomen.

On opening the peritoneal cavity a large quantity of semi-opaque peritoneal fluid, containing flakes of lymph, escaped. There was no blood in the peritoneal cavity. The uterus was seen covered with flaky lymph. An incision was made into it, and the child extracted about five minutes after the death of the mother. The child's heart was not beating, and all attempts at artificial respiration failed. There was only slight hemorrhage on cutting into the uterus. There was no blood in the uterine cavity. No evidence of rupture of the uterus or other organ was discovered. The inflammation of the peritoneum was most marked over the uterus and in its neighborhood.

No cause for the peritonitis could be found, but unfortunately no complete examination of the body was obtainable. Death took place fourteen hours after the onset of the symptoms.

In this case there is great difficulty in seeing any etiological connection between the history of the fall and the rapidly fatal peritonitis. The incompleteness of the post-mortem examination renders it impossible absolutely to eliminate various common causes of peritonitis, such as perforation of the vermiform appendix; but no ground of suspicion of any such cause was discovered.

The author cites three other cases of this rare affection, one from the writings of Sir J. Y. Simpson, and two from Matthews Duncan.

REPORTED MORTALITY FOR THE WEEK ENDING JANUARY 28, 1888.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diph. & Croup.	Diarrhoeal Diseases.	Scarlet Fever.
New York	1,381,920	802	313	17.04	21.24	9.12	1.56	3.24
Philadelphia	993,801	—	—	—	—	—	—	—
Brooklyn	745,108	360	131	16.40	22.96	11.48	2.46	3.70
Chicago	725,000	—	—	—	—	—	—	—
St. Louis	420,000	—	—	—	—	—	—	—
Baltimore	417,000	187	72	12.19	14.84	1.96	.56	.56
Boston	400,000	223	56	12.15	24.75	4.05	1.35	2.70
New Orleans	242,750	109	28	11.96	14.72	3.68	2.76	—
Buffalo	225,000	—	—	—	—	—	—	—
District of Columbia	210,000	111	34	15.30	19.80	2.70	.90	.90
Pittsburgh	210,000	—	—	—	—	—	—	—
Montreal	186,257	—	—	—	—	—	—	—
Milwaukee	170,000	72	28	20.85	12.51	8.34	—	—
Providence	121,000	—	—	—	—	—	—	—
Richmond	100,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,000	25	10	12.00	16.00	8.00	—	—
Charleston	60,145	24	8	8.32	8.32	—	—	—
Portland	40,000	14	2	7.14	7.14	7.14	—	—
Worcester	68,383	22	5	9.12	27.36	4.56	—	—
Lowell	64,061	29	9	13.80	13.80	6.90	3.45	—
Cambridge	50,000	28	5	7.14	32.15	—	—	7.14
Fall River	56,883	20	12	20.00	10.00	10.00	—	10.00
Lynn	45,861	22	9	27.36	4.56	18.24	—	—
Lawrence	36,825	24	11	12.48	4.16	—	—	4.16
Springfield	37,577	19	6	26.30	26.30	10.52	—	5.26
New Bedford	33,393	24	9	12.48	4.16	12.48	—	—
Somerville	29,592	14	5	35.70	—	7.14	—	7.14
Salem	28,084	12	1	25.00	—	25.00	—	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	12	2	16.66	8.33	—	—	16.66
Taunton	23,674	11	12	—	27.27	—	—	—
Haverhill	21,795	9	5	22.22	11.11	—	22.22	—
Gloucester	21,713	6	3	33.33	16.66	—	—	16.66
Brocton	20,783	6	2	16.66	33.33	—	—	16.66
Newton	19,759	6	2	—	33.33	—	—	—
Malden	16,407	5	3	20.00	—	—	—	20.00
Fitchburg	15,375	9	2	11.11	22.22	11.11	—	—
Waltham	14,609	9	2	11.11	33.33	—	11.11	—
Newburyport	13,716	5	2	20.00	20.00	—	—	20.00
Northampton	12,896	—	—	—	—	—	—	—

Deaths reported 2,117; under five years of age 789; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 127, acute lung diseases 140, consumption 275, diphtheria and croup 168, scarlet fever 64, diarrhoeal diseases 29, measles 20, typhoid fever 18, whooping-cough 17, malarial fever 14, puerperal fever 10, cerebro-spinal meningitis eight, erysipelas eight, small-pox four. From measles New York and District of Columbia seven each, Baltimore six. From typhoid fever Milwaukee three, New York, Brooklyn, Boston, District of Columbia, Charleston and Lawrence two each, Baltimore, Lynn and Somerville one each. From whooping-cough, New York six, Boston four, Brooklyn and Baltimore two each, Milwaukee, Lowell and Springfield one each. From malarial fever, New Orleans five, New York four, Baltimore three, Brooklyn two. From puerperal fever, Brooklyn and Milwaukee three each, District of Columbia two, Boston and New Orleans one each. From cerebro-spinal meningitis, Milwaukee and Somerville two each, New York, Worcester, Lynn and Springfield one each. From erysipelas,

New York three, Boston, Brooklyn, District of Columbia and Nashville one each. From small-pox New York three, Brooklyn one.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending January 14th, the death-rate was 23.3. Deaths reported 4,194; infants under one year of age 636; acute diseases of the respiratory organs (London) 579, whooping-cough 208, scarlet fever 68, measles 60, fevers 47, diphtheria 33, diarrhoea 27.

The death-rates ranged from 14.2 in Sunderland to 34.9 in Manchester; Birmingham 24.6; Blackburn 27.6; Hull 18.3; Leeds 23.1; Leicester 15.3; Liverpool 21.0; London 23.6; Nottingham 22.6; Portsmouth 20.6; Sheffield 25.3; Wolverhampton 28.7.

In Edinburgh 25.8; Glasgow 25.1; Dublin 35.8.

The meteorological record for the week ending January 28, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole, of the United States Signal Corps:—

Week ending	Barom-eter.	Thermometer.				Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Saturday, Jan. 28, 1888.																			
Sunday, . . . 22	30.51	5.0	13.0	-3.0	49.6	45.0	50.0	48.0	W.	W.	N.W.	16	12	8	C.	C.	C.		
Monday, . . . 23	30.25	10.0	20.0	-3.0	65.0	52.0	55.0	57.0	W.	W.	S.W.	12	4	11	C.	H.	O.	1	.01
Tuesday, . . . 24	30.29	13.0	20.0	1.0	53.0	55.0	49.0	68.0	W.	W.	N.W.	12	24	20	C.	C.	C.	3	.01
Wednes., . . . 25	30.30	11.0	22.0	-1.0	62.0	81.0	85.0	76.0	N.W.	S.E.	E.	10	6	12	C.	F.	N.	3	.01
Thursda., . . . 26	29.20	26.0	40.0	12.0	100.0	67.0	100.0	89.0	S.E.	N.W.	N.W.	24	24	24	R.	O.	N.	18	.38
Friday, . . . 27	29.50	5.0	18.0	0.0	63.0	59.0	65.0	62.0	N.W.	W.	W.	24	20	13	C.	C.	C.		
Saturday, 28	29.79	1.0	4.0	-4.0	68.0	60.0	72.0	67.0	N.W.	W.	N.W.	12	18	17	C.	C.	C.		
Mean, the Week.	29.977	10.1	19.0	.0				66.7										22½	.39

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 28, 1888, TO FEBRUARY 3, 1888.

PAGE, CHARLES, surgeon and lieutenant colonel. To be assistant surgeon general with rank of colonel. November 17, 1887.

McKEE, JAMES C., surgeon and major. To be surgeon with rank of lieutenant colonel. November 17, 1887.

GIRARD, ALFRED C., captain and assistant surgeon. To be surgeon with rank of major. November 17, 1887.

FISHER, W. W. R., first lieutenant and assistant surgeon. Granted leave of absence for one month on surgeon's certificate of disability. S. O. 1, Department of California. January 20, 1888.

RAYMOND, H. I., first lieutenant and assistant surgeon. Ordered to Fort Bidwell, Cal.

FISHER, W. W., first lieutenant and assistant surgeon. Ordered to Presidio of San Francisco, Cal. S. O. 25, A. G. O., January 31, 1888.

SOCIETY NOTICE.

NEW YORK STATE MEDICAL ASSOCIATION, FIFTH DISTRICT BRANCH.—The next meeting will be the Fourth Annual Meeting, to be held in Brooklyn, on Tuesday, May 22, 1888. There will be a morning and an afternoon session.

EDWIN BARNES, M.D., President.
E. H. SQUIBB, M.D., Secretary, P. O. Box 94, Brooklyn.

APPOINTMENTS AT THE CHILDREN'S HOSPITAL, BOSTON.

Dr. T. M. Rotch has been elected Visiting Physician, Dr. H. L. Burrell, Visiting Surgeon, Dr. W. N. Bullard, Neurologist and Electrician, Drs. T. F. Sherman and C. W. Townsend have been elected Assistants in the Medical Out-patient Department.

DEATHS.

Died in Lowell, Mass., January 30, 1888, Joel Spalding, M.D., M.M.S.S., aged sixty-eight years.

Died at Whitinsville, Mass., February 4, 1888, Rowse Reynolds Clarke, M.D., M.M.S.S., aged sixty-five years.

Died at Wellesley Hills, Mass., January 31, 1888, Charles Warren, M.D., M.M.S.S., aged seventy-three years.

In Boston, Mass., February 2, 1888, George Stevens Jones, M.D., M.M.S.S., aged seventy years.

BOOKS AND PAMPHLETS RECEIVED.

Thirteenth Report of the Salem Hospital. 1888.

Remarks on the Recent Outbreak of Typhoid or Enteric Fever at Southampton, L. I. By F. E. Beckwith, M.D., of New Haven. 1887.

The Tympanic Kymograph: A New Pulse and Blood-Pressure Registering Apparatus. By Henry Sewall, Ph.D., Professor of Physiology in the University of Michigan. 1887.

The Rules of Aseptic and Antiseptic Surgery. A Practical Treatise for the Use of Students and the General Practitioner. By Arpad G. Gerster, M.D., Professor of Surgery at the New York Polytechnic. Illustrated with 248 engravings and 3 chromolithographic plates. New York: D. Appleton & Co. 1888.

A Synopsis of the Physiological Action of Medicines, Prepared for the Use of the Students of the Medical Department of the University of Pennsylvania. By Louis Starr, M.D., and James B. Walker, M.D., assisted by W. M. Powell, M.D. Third edition; Enlarged. Philadelphia: P. Blakiston, Son & Co. 1888.

Rectal and Anal Surgery, with a Description of the Recent Methods of the Itinerants. By Edward Andrews, M.D., LL.D., Professor of Clinical Surgery in the Chicago Medical College, etc., and E. Wyllis Andrews, A.M., M.D., Adjunct Professor of Clinical Surgery in the Chicago Medical College, etc. With original illustrations. Chicago, 1888.

A Contribution to the Study of Cysts of the Vagina, with the Report of a Case. By George Woodruff Johnston, A.M., M.D., Washington, D.C. Lecturer upon Operative Gynecology in the National Medical College; Director of the Woman's Clinic of the Central Dispensary and Emergency Hospital, etc. Reprint. New York: William Wood & Co., Publishers. 1887.

Suicide in its Relation to Insanity. By John J. Reese, M.D., Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania. Reprint. 1888.

Report of the New York Post-Graduate Hospital including the Babies Ward. Founded February 1, 1884. For the year ending May 1, 1887.

An Address from a Special Committee of the College of Physicians of Philadelphia to the Medical Societies of the United States: Concerning the Dangers to which the Country is Exposed by the Ineffectual Methods of Quarantine at its Ports, and in Regard to the Necessity of National Control of Maritime Quarantine, to which is Appended the Report of the Committee of the College of Physicians of Philadelphia Appointed to Investigate the Efficiency of our Quarantine Arrangements for the Exclusion of Cholera and other Epidemic Diseases. 1888.

Original Articles.

TWO CASES ILLUSTRATING THE EFFECTS OF PRESSURE FROM POLYPI IN THE MIDDLE EAR.

BY CLARENCE J. BLAKE, M.D.

THE following cases, though simple in themselves and not uncommon, are reported because of the committant symptoms, as a larger growth in the upper portion of the middle ear, might have existed with no other indication of its presence than the usual objective and subjective symptoms common to polypi accompanying chronic purulent inflammation of the middle ear; though in the two cases here cited there were general symptoms of a grave character, until examination of the ear revealed the true cause of the disturbance.

The first case, that of a man forty-five years of age, was seen for the first time ten years ago, with two large polypi springing from the outer wall of the upper portion of the tympanic cavity, accompanying a purulent inflammation, a recurrence of that which was brought on by an attack of scarlet fever in childhood. These polypi were easily removed, the discharge from the ear soon ceased and did not recur until eight years later. This recurrence of trouble in the middle ear was neglected by the patient, who was a very busy man, until to the discomfort attending the sense of fulness, subjective noise, and offensive discharge from the ear, were added slight vertigo and a sense of numbness in the corresponding side of the face.

Under these circumstances the patient decided to again apply for relief, but on the night previous to his visit had a much more severe attack of vertigo and awoke in the morning to find himself with a well-marked facial paralysis.

Examination of the ear showed the external canal to be normal except for the excoriation due to the maceration of the skin by the discharge, which was free and purulent; there was destruction of the membrana tympani and the polypoid mass projecting downward from the upper and posterior portion of the tympanic cavity was evidently sloughing. The removal of this mass revealed a larger and more vigorous polypus which by itself constricted the one first removed, and in addition was exerting considerable pressure upon the incus, and upon the inner and posterior wall of the cavity. This growth being removed entire by the use of curved forceps, the middle ear cavity was thoroughly washed out with a weak solution of bicarbonate of soda by means of a middle ear syringe, the washing bringing away considerable masses of caseous pus, and macerated epithelium. After a careful drying the ear was dressed with boracic powder and stopped with cotton. The vertigo was almost immediately relieved and disappeared within six hours, and the face was entirely free from uncomfortable sensations and distortion at the end of three days. Subsequent treatment resulted as before, in a speedy cessation of the discharge, and the ear remained quiescent until a year later when there was a recurrence of the facial paralysis following a purulent discharge from the ear of three weeks' duration. In this instance the removal of the softer and more rapidly growing polypus entirely relieved the facial symptoms and the vertigo which accompanied them and which was very much less than on the previous occasion.

The second case was that of a woman forty-five years of age, who as the result of purulent inflammation of the middle ear following scarlet fever in childhood, had a large perforation in the posterior half of the membrana tympani, through which, when first seen five years ago, projected from above downward a small mucous polypus. This polypus was found to grow from the outer wall of the upper portion of the tympanic cavity posteriorly to the head of the malleus, its greater bulk being lodged between the outer tympanic walls and the body of the incus. The growth was removed by means of the curved forceps, and the subsequent treatment resulted in a speedy cessation of the discharge.

Two years later, following recurrence of discharge from the ear of three months' duration, the patient again came complaining not only of the return of the purulent trouble with its accompanying discomforts, but also of slight vertigo, accompanied by subjective noises in the ear, evidently of circulatory origin, both of which symptoms were increased by fatigue, over-exertion, or by the ingestion of anything which increased the circulation in the head. Examination showed a return of the polypoid growth, the removal of which relieved the vertigo and decreased the tinnitus. For a period of three weeks during which the discharge from the ear steadily decreased, the patient was under observation and this time, while there was slight constant circulatory tinnitus, there was no vertigo except under the especial conditions before mentioned. Following this period of three weeks the patient was not seen by the writer until three months later by which time the discharge from the ear, which had again occurred, had become very copious. The vertigo, before occasional had become constant, and the tinnitus very distressing, indeed, the vertigo was so much increased by any movement of the head, especially toward the right side with the body erect, that the patient considered herself confined to bed. Any movement of the head, or even the arms and upper part of the trunk not only increased the dizziness, but superinduced nausea so that food had been retained with difficulty for a period of over forty-eight hours.

The general condition indicated considerable prostration, the surface of the body was cool, the pulse was small and weak at the wrist, the face pinched and wearing an expression of anxiety. In addition to the discomfort due to the sense of fulness in the ear, the vertigo, nausea and tinnitus, there was complaint of pain referred to the corresponding parietal region and to the depth of the ear. Examination of the ear showed a repetition of the conditions previously observed, the polypus, however, being very much larger and firmer than on previous occasions. By means of the curved forceps the growth was removed piece-meal, its whole volume equalling a sphere about six millimetres in diameter.

The condition of the patient and the increase of the vertigo attendant on the use of the forceps, necessitated much deliberation in the removal of the growth, and frequent pauses for intervals of rest; the greater portion of the growth however being removed in half an hour. One hour later the nausea had decreased and the vertigo was very much lessened. Forty-eight hours later the vertigo increased and was again relieved by a thorough cleansing of the upper and posterior part of the tympanic cavity by means of the

middle-ear syringe, Dr. H. L. Morse who made the three subsequent visits reporting the removal of considerable masses of macerated and swollen epithelium, the usual sequence of the presence of polyp in this region of the tympanic cavity.

Three weeks later the patient was able to be out of the house, there was a very slight purulent discharge only, and no vertigo even on sudden rotation of the head.

In both of these cases a growth between the outer tympanic wall and the incus projecting downward and pressing upon the long process of the incus as well as upon the body of that bone resulted in a permanent degree of pressure upon the labyrinth through the fenestra ovalis. In the first case, also, the location of the growth was such as to press upon that portion of the wall of the middle ear which separates that cavity from the canal of the facial nerve.

As has been shown by Gruber, there is a certain proportion of cases in which there is a dehiscence of bone in this portion of the facial canal, and while it is impossible to substantiate the fact in this particular case, the explanation is at least permissible that the pressure of the growth upon a membranous wall communicated sufficient pressure to the nerve to result in a temporary suspension of its function. In support of this supposition is the fact of the ready recovery from the facial paralysis after the removal of a tumor the pressure of which was probably of short duration, and the repetition of the similar experience in the same case may be taken as confirmatory of this view.

In the second case, the pressure of the growth upon the incus and so upon the stapes and labyrinth was in itself so slight as to be insufficient to cause irritation of the semi-circular canals and subsequent vertigo, which symptoms appeared only when there was added to this pressure the pressure of an increased intralabyrinthine circulation.

In the last recurrence of the trouble, however, the greater pressure due to the larger mass was sufficient in itself to cause the vertiginous and other reflex symptoms, the speedy relief following the removal of the growth being a sufficient evidence of the truth of this proposition.

As has been said, these cases are reported not because they are uncommon but because of the direct evidence of cause and effect, and because of their possible interest to the general reader.

A CASE OF CEREBRAL LOCALIZATION, WITH DOUBLE TREPHINING (ACQUIRED SPASTIC HEMIPLEGIA — PORENCEPHALUS).¹

BY W. N. BULLARD, M.D.

GENTLEMEN: The case which I have the honor to report to you to-night derives its chief medical interest from the fact that the diagnosis of the lesion, and the localization of its seat were correctly made during the life of the patient, and that the latter was such as could be easily reached by a comparatively simple operation. Cases of operative interference in congenital cerebral lesions, or in those occurring in the earlier months of life, are very rare, and I, therefore, believe it of importance that the possibility of localizing these lesions, and the probability that in certain cases, even though they be incapable of cure, their

results can be mitigated, should be strongly emphasized. Until of late years, but little attention has been paid to the various forms of congenital or infantile cerebral lesions, excluding hydrocephalus and inflammations of the meninges. Patients suffering from congenital or infantile cerebral paralyses are too often considered not only absolutely incurable, but incapable, even, of improvement. Some cases unquestionably are so; but, on the other hand, I believe that in many of this class of cases we can do much to improve and mitigate those symptoms which we cannot remove, and there is no doubt that a broad field lies open here for cerebral surgery, provided, only, that the neurologist can state with some degree of precision the condition existing within the cranium, and, if the lesion be a localized one, point out its seat.

The present case occurred in the service of Dr. Bradford, at the Children's Hospital, and it is through his kindness and at his suggestion that I bring it before you to-night.

The patient was a boy, four and a half years old. There was no history of any nervous disease in the family, and no history of the patient was obtainable, except that he was supposed to have been in his present condition since birth. The delivery was by forceps, and the child had a scar and depression over the right parietal bone, supposed to have been caused by them. There was no history of convulsions at any time. The child was brought to the Hospital by his parents, who insisted upon an operation — trephining over the depression — although they were informed that there was little hope of improvement from what they desired, and still less of cure. This operation had been decided upon before I saw the child.

I first saw the patient in the Hospital on the 22d of June, 1887, when his condition was as follows:

The child was seated in bed. As a rule, he sits quietly all day, doing nothing. Expression vacant. Intelligence limited, although he has a certain sense of his surroundings, as was shown by his screaming one day when he was placed in a bed in another part of the ward, and pointing with his finger to the old one, and continuing this until he was replaced. He understands simple words and sentences, and obeys simple directions. He signifies when he is thirsty. When told to do so, he will turn his head, and he will hand an object to a person, or smell of a rose, when it is suggested to him. He can say "yes" and "no," and will say "good-bye" when any one is going away, but he cannot talk. He drudges constantly.

Physical condition: Well nourished, well developed. Head large, rather square. On the right side, 5 cm. behind, and about 4 cm. above the upper edge of the anterior border of the pinna, there is a scar 5 cm. long, extending forwards and slightly upwards. This scar lies in front of the occipito-parietal depression, which is alike on both sides, and seems to cross the temporal ridge of the parietal bone, and the squamo-parietal suture. On palpation, there is an irregular knob or prominence under one portion of the scar, and a depression with irregularities on each side; that is, anteriorly and posteriorly. There is no decided tenderness here or elsewhere about the head. Nothing else abnormal was detected about the cranium.

All the special senses appear normal. There is right internal strabismus. Eyes not examined ophthalmoscopically.

¹Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Suffolk District Medical Society, January 11, 1888.

Nothing abnormal could be detected about the trunk or organs of the thoracic or abdominal cavities. There was an occasional reduplication of the first sound of the heart.

The spine was straight; no tenderness in the back. The patient cannot use any of his extremities, but he uses those on the left much better than those on the right.

Upper extremities: The right upper extremity can be moved somewhat, but is never used. It is in a condition of spastic paralysis. The forearm is held semi-flexed upon the arm, and there is considerable resistance to passive motion, which can, however, be overcome after a time. The hand is firmly flexed on the forearm. He will not grasp anything with the right hand. He moves the left upper extremity much better than the right, and always grasps objects with the left hand, and then holds them firmly.

Lower extremities: The right lower extremity is smaller, and possibly colder than the left. There is a spastic condition of the knee and ankle. The foot is held flexed in the equinus position, with the toes pointing downwards. Some movement of the limb, however, is possible. He can flex at the thigh, knee, and ankle when he wishes. The left lower extremity is somewhat weak, perhaps from disuse; otherwise, nearly normal.

Knee-jerk exaggerated on both sides. Patient is unable to walk or to stand without support. He can take a step if supported under the arms, and he can hold his weight on the left leg. If the legs become locked at the knees, as they tend to do, he can support a portion of the weight of his body upon them. The sensation is apparently normal everywhere throughout the body. Nothing else abnormal detected.

To resume the case in short, we have here a boy, four and a half years old, with much diminished intelligence, inability to speak, inability to use any of his limbs well, and with right internal strabismus and right spastic hemiplegia. In addition, there is a well-marked cicatrix and depression in the right posterior parietal region.

After examination of the case, it was decided, at my suggestion, that in addition to the operation already proposed, the cranium should be opened over the cortical motor area of the left side, as this seemed to offer the strongest prospects of relief.

The operation was, accordingly, performed on the 27th of June, by Dr. Bradford. The patient being etherized, the various points were localized on the shaven head, and the position of the fissures of Rolando determined as carefully as possible. Dr. Bradford trephined first on the right side of the head, directly over the cicatrix. A curved incision with its convexity downwards, about six inches in length, was made through the scalp, the periosteum was removed intact, and the cranium trephined—the trephine used being an inch in diameter. The outer table of the portion of bone removed showed a fracture, and the inner a slight inequality, due to a fissure. The dura mater exposed was thickened, and its vessels filled with blood. It (the dura mater) was then incised, and the brain and pia exposed to view. There was no evidence of pressure, nor of anything abnormal here below the dura. The brain protruded slightly through the opening and pulsated. [It is important to note here the fact that, in spite of the fracture of the cranium, and the accompanying thick-

ening of the dura mater, the pia and brain were, as far as could be told, absolutely normal.]

It was now decided that it would be wise to trephine over the probable seat of the lesion on the left side, and, at Dr. Bradford's request, I located the motor area on the left side, where it was presumable, from the symptoms, that the lesion would be found. This point was a little higher and slightly further forward than that trephined on the right, at the junction, as nearly as could be determined, of the middle and lower thirds of the fissure of Rolando. There was a very small superficial cicatrix in the skin here, not involving the deeper tissues of the scalp, and which had remained undetected until the position was marked. An incision similar to that made on the right side was now made here. The cranium, when uncovered, appeared perfectly normal. It was trephined, and, on the removal of the bone to which the dura was attached, a depression in the brain substance—porencephalic cavity—was exposed. This not only occupied the whole space directly under the opening, but also extended somewhat anteriorly. The pia seemed to be adherent. The brain substance in this depression, which was estimated as about $1\frac{1}{2}$ inches long, by $\frac{3}{4}$ inch wide and $\frac{3}{8}$ inch deep at the deepest part, was puckered and shrivelled. Considerable hamorrhage from the bone followed the removal of the button on this side. This was quickly controlled by plugging.

As the patient's condition was poor—pulse very weak, and respiration slow and labored—nothing further was attempted. After replacing the buttons of bone on each side, and stitching the dura mater on the right, the incisions were sewed up, and bandages and dressing applied.

The patient, however, never rallied thoroughly after the operation, although he recovered consciousness in the evening, and was conscious until the following morning, when he died at 10 A. M., about seventeen hours after the operation. The temperature was not taken on the evening following the operation, but, the next morning, rose to 105°. There was no autopsy.

This case, it seems to me, illustrates some interesting points. In the first place, it demonstrates the possibility of localizing lesions of this character (porencephalic) in children in certain cases. This is, of course, the first step in any rational attempt for their direct alleviation or cure. That these lesions can be localized with moderate accuracy, at least, sufficiently for all practical purposes in a large proportion of the cases of this class, I am convinced, and I believe it to be the duty of the neurologist, so far as lies within his power, to improve and perfect his knowledge, so that, when appealed to by the surgeon, he shall be able to point out where the instrument should be directed, and to state what sort of lesion is likely to be found.

Secondly, I believe that this case may be accepted as evidence that these lesions—many of them, at least—can be reached by surgical interference without serious difficulty, since simple trephining can no longer be regarded as a serious operation in ordinarily healthy persons. If this be true, its importance is at once manifest. If these lesions can be localized, and if surgical interference in them is not a matter of serious difficulty, nor of marked risk to the life of the patient, we have here, at least, one expedient which offers a prospect of alleviation in these cases, however remote.

It is well known to most of us, but I repeat it here

for the sake of emphasizing it again, that there are no cases which, as a class, are regarded by the whole medical profession as more utterly hopeless and as more entirely beyond any possible medical aid and assistance than congenital and infantile brain affections. There is no class of cases in which the patients are more utterly useless to themselves and to the world, or more of a burden to their parents and relatives. Anything, therefore, which affords the least prospect of relief is, in them, of the utmost importance.

There are two other points in this case which are of both neurological and surgical value, which I will refer to in short.

The first is the question of the advisability of trephining in more than one place at the same time in children. Whether, in this case, the result might have been more favorable had the operations been performed separately, it is impossible to decide; but, in a similar case, would certainly seem more safe to perform two operations.

The second point is one which, although theoretically well known, cannot be repeated too often, and it is well illustrated here. This is, that in spite of a fracture or visible injury on one side, the actual cerebral lesion may be upon the opposite, whether produced by direct violence or by *contrecoup*. Therefore, in case of cerebral injury, if the symptoms point to a lesion on the opposite side from the trauma; for example, if the hemiplegia is on the same side of the body as the fracture of the cranium, we should not trephine at the place of fracture, but on the other side.

In the case of our patient, the probability is that the whole trouble was traumatic, and due to the pressure of forceps. While on the right the parietal bone was fractured, on the left, the bone being more yielding, or the blade being in a slightly different position, or for some other reason, a different effect was produced. This was probably the rupture of the ascending parietal artery or one of its branches.

PROTRACTED GESTATION.¹

BY JOHN G. BLAKE, M.D.

THE question as to whether gestation is really protracted beyond the normal period, is one upon which authors differ widely. Some of the most respected writers upon obstetrics, like Barnes and Tyler Smith, deny it entirely, claiming that the uniformity of nature's law is not violated in this respect, and that apparent exceptions spring from mistakes in date, or delays and interferences with the processes of conceptions by conditions which are out of our power to detect, prevent or control. On the other hand, Montgomery, with many other very high authorities, takes the opposite view. He believes there are exceptions to all rules and laws, and claims that there is no good reason why the subject under consideration should be exempted. He quotes Lord Spencer and Tessier's observation on cows, showing a variation of 81 days between the longest and shortest gestation, and an extension in some cases of 31 days beyond the normal period. Of mares the same facts are recorded, and instances given. These observations extend to many others of the lower animals with similar results. Montgomery also supports his theory of exceptions by reference to

the subject of dentition; instancing the fact that while the average time for first dentition is about four months, it is sometimes extended to a year, and children are sometimes born with teeth.

Since the normal duration of pregnancy is the rule, while the other is the exception, testimony in its favor should always be allowed to have great weight. The possibility of motives for misrepresentation, pecuniary or otherwise, must also be taken into account. This normal duration is from 275 to 280 days. My plan is to date conception from the fifth day after cessation of menstruation, and to count nine calendar months from that time. Experience has proved that this average is fairly accurate, although in no single case can I predict the beginning of labor within several days. In pregnancies dating from a single coitus, 275 days is, I believe, nearer the exact period of gestation.

Whether the condition of pregnancy is really or only seemingly prolonged, it is probable that every member of this society has at some time suffered from the inconvenience and anxiety attending such cases. When, as often happens, they occur in summer, and the detained M.D. sees his vacation slowly vanishing, with but little else to do than think of his case, it requires more than ordinary philosophy to avoid excessive waste of nerve tissue from annoyance. Thrice during the past fifteen years, has this been my experience. At other times I give the subject but little attention, and have no doubt from a general glance backward, that several other cases could be cited.

The first case was that of a multipara pregnant with her eleventh child. Her family went to a seaside resort twenty-two miles from Boston, early in May. I was requested to take charge, with the assurance that she always knew to a day, from past experience, when a physician's service would be required. The 10th of June was the latest date. I began to travel toward this point every afternoon, having promised to stay a few nights preceding the time at my patient's house. I continued to travel until July 4th, when either patriotism or gunpowder acted as the final stimulant, after a lapse of twenty-four days.

The second and third cases occurred during the past summer. Mrs. — engaged me to attend at her second confinement. Menstruation ceased September 18th. I made a date for June 26th, which would allow four days after cessation of menstruation. I waited until August 29th; about nine weeks later than the appointed time. During this period, a closer inquiry into facts revealed a mistake of a month in the lady's calculations; but even allowing this, the case exceeded the normal duration of pregnancy by five weeks. Some of the attending circumstances were of a painful character. The first baby, a girl of sixteen months, was attacked with diarrhoea. Removal to the seashore, with the kind and skilful care of a member of this society restored her. The parents desired to have the child where it could occasionally be seen by the mother, so it was transferred to a large airy house on the top of Mount Pleasant. Four weeks afterwards it was again attacked with a dysenteric diarrhoea. As the mother was now hourly expecting confinement, she was not willing to allow the child to be taken where she could not see it. Treatment in the city was not successful, and the baby died after a week's illness. I have never felt quite satisfied that the child could not have been

¹ Read before the Obstetrical Society of Boston, December 10, 1887.

saved, had circumstances permitted its removal again to the seaside. The nervous excitement attendant upon this, no doubt helped to complicate the mother's case.

The third case was that of a young German Jewess, a primipara whose labor came on thirty-five days after the expiration of the normal period of utero gestation. The labor was tedious in this case, and delivery was finally effected by forceps. The child was large and healthy, and somewhat disproportionate to the small size of the mother, weighing ten pounds.

Dr. W. H. Lincoln, of Millbury, Mass., sends the following well authenticated case, where the testimony seems conclusive that gestation was prolonged four weeks. Mrs. —, twenty-two years of age; rather below medium height; weighed about one hundred pounds; had always been very regular, catamenia occurring every twenty-eight days and lasting four or five; never had borne children; was last unwell June 15th, remaining so during four days as usual; expected to be confined March 19th; during 18th, 19th, and 20th March had some pain and very slight "show." These symptoms disappeared, however, and she was about the house, walking and riding out until April 15th, when she was taken in labor which lasted forty-eight hours. She was then delivered by craniotomy of a male child, the remains of which weighed eight pounds two ounces. The head was ossified to such an extent, that very little if any motion could be detected at sutures.

In the first and second cases reported delivery was natural, and the size of the children relatively to the mothers, not unusually large. All the infants were strong, well formed and vigorous; but while the heads were shapely and firm, and the bodies finely developed, I cannot say that they were better in these respects than others, in whom no suspicion of protracted gestation existed.

In looking for the causes of these and similar phenomena, I find the following among others assigned: Delay of the ovum from its seat in the ovary along the fallopian tube to cavity of uterus;² the ovulum may lie at a greater depth in the substance of ovary, which may have had its texture thickened or indurated by effect of previous inflammation. A similar change may have taken place in the proper coat of that body, or in its peritoneal investment, which will still further delay the escape of the ovum, by resisting the natural tendency to open under increasing distention, and by rendering a longer time necessary for the accomplishment of requisite absorption. The tube may have formed adhesions with the ovary, or with other parts, in its course to the uterus; or, by having its natural diameter contracted, may be incapable of transmitting the ovum without delay. A defect in the due preparation of the decidua nidamentum will cause similar trouble. Changes in the mucous membrane of the uterus are also supposed to cause delay. Some authors attribute protraction to advanced age, repeated impregnation, male sex in the child, or irregular menstruation. Health and activity of the uterus may lead to postponement. A woman who menstruates every thirty days, is supposed to carry longer than one whose regular period is twenty-eight. Latency is another cause.

Fecundation does not always take place at exact date of coition. Hours or days may elapse after insemination, before spermatozoa come in contact with

ovum. This is confirmed by Marion Sims who discovered spermatozoa in the cervical canal six days after intercourse. Professor Flint, Jr., saw them "in motion on the surface of the ovary eight days after" and "Dr. Perry discovered them alive in the mucus issuing from the os uteri eight and one-half days after the last coitus."³ Heredity is supposed to cause irregularities at times.⁴

In a calculation made by Dr. Merriam, from 114 cases, counting from last day of menstruation to birth, the following were the periods: In the 37th week, 3; 38th week, 13; 39th week, 14; 40th week, 33; 41st week, 22; 42d week, 15; 43d week, 10; 44th week, 4. From these results he considers that in the greater number of women gestation is completed in the 40th week after the cessation of menses.

Harvey quotes a case in which a woman carried her child more than sixteen months, during ten of which she felt the movements of the foetus.⁵ Dr. Henderson reports one in which a multipara thirty-five years of age had given birth to her former children with no unusual symptoms; in this particular case the date from last catamenia to birth was fifteen months. The child was born dead, but was alive three hours before delivery; weight sixteen and one-half pounds.

Case of Dr. E. N. Lewis, reported by Dr. Mundé; Menstruation ceased August 28th; coitus two days after; symptoms of pregnancy within ten days (morning sickness, etc.); quickening at four and a half months; expected confinement on June 7th, but it was delayed until August 8th. The child had a firmly ossified head, rather small; fontanelles entirely closed. From date of last menstruation to August 8th, gives 341 days.

Dr. Chamberlain relates a case. Quickening October 20th; confinement expected in first week of March; delayed until May 6th; child showed evidence of prolonged gestation. Posterior fontanelle entirely closed, and anterior fontanelle to a considerable extent; skin was thick and white and had lost its reflex character, and the child possessed a certain co-ordination of movements never seen at term.⁶

Velpau records the following: Quickening at four months; symptoms of labor occurred at end of ninth month, but were suspended, and did not return for thirty days. He considers gestation to have extended over 310 days.

Among other cases are these from the *American Journal of Obstetrics*, Vol. XII:

Dr. Simpson, England, attended a case in which he believes gestation to have been protracted to the 314th day from cessation of menses. He thinks that in three other cases which came under his notice the terms were prolonged respectively 319, 332 and 336.

Meigs claims to have had a case where 420 days elapsed between conception and labor.

Bartholin reports that of a woman of Leipzig who was delivered in the sixteenth month.

M. Rigands gives a case in which a second mature child was born four and a half months after the first; an autopsy revealed a single normal uterus.

A history is given of an Italian woman who gave birth to a couple of infants apparently of mature development, one born three months after the other.⁷

² Am. Journal of Obstetrics, Vol. XII, p. 97.

³ Professor Retzius, Stockholm.

⁴ Montgomery on Pregnancy.

⁵ Transactions of Obstetric Society. New York, April 15, 1879.

⁷ Transactions of the London College of Physicians, Vol. IV, p. 161.

⁶ Montgomery. Signs and Symptoms of Pregnancy, pp. 424, 431.

Dr. Hamilton speaks of a case that he delivered three times artificially with success, after the tenth menstrual period was passed.

The following synopsis is given in Taylor's "Medical Jurisprudence":

Dr. Murphy fixes the maximum of duration yet known at 324 days; Dr. Meigs, at 325; Dr. Bentley, at 291; Dr. Reid, at 293; Dr. Skey, at 293; Dr. Macilum, at 293; Dr. Ashwell, at 300; Dr. Steathy, at 298; Dr. Power, at 325; Mr. Chattaway, at 330; Dr. Duncan, at 300.

Mr. Duncan gives a case of first pregnancy of 300 days duration, second and third cases each 285 days, and a fourth 325 days, all in the same woman. Atlee gives two cases lasting 365 days.

There are some legal aspects of the subject which may be of interest. In England the period of gestation is not fixed by law. By some authorities 40 weeks or 280 days are allowed; by others, 43 weeks or 301 days are given as a limit.

In the United States, a decision in favor of paternity has been made in a case where gestation extended to 45 weeks and 2 days.

Legitimacy was disallowed in England where pregnancy was protracted to 44 weeks and 3 days.

In Germany it is laid down that gestation may be prolonged to 301 or 308 days, but not beyond that time. The general law of Germany places the period for ordinary gestation among women not married, at 285 days; but for a married or divorced woman, or a widow it allows 302 days.

In France legitimacy is allowed within 300 days; in Prussia, within 302 days; in Scotland, not after the tenth month.

Hohl, who records these facts, thinks that there is injustice in any fixing of rules regarding time; and advises that in exceptional cases a period of from 322 to 336 days should be admitted. It is more reasonable to leave the question open than to assign any arbitrary limit, to which there must necessarily be exceptions now and then. His reasons for so thinking are: (1) The ripening of the ovum in the ovary does not take an equal time in all women. (2) The ripe ovum does not always leave the ovary at a fixed time. (3) Coitus is not always effected at the time when the ovum lies ready for fertilization, which may be shortly before or immediately after menstruation. (4) The spermatozoa may meet the ovum in the uterus, or tube, or upon the ovary, and each will make a difference in time. (5) All fetal life does not mature at an equal period. The effect of these irregularities upon the child, does not seem to have been generally noticed, and this may be taken as evidence that its condition at birth is not materially changed. In the reports of cases referred to in this paper, very few of the children are spoken of as exceeding the normal size. One or two monsters are alluded to; and the case of Dr. Henderson where the child weighed sixteen and one-half pounds, is an isolated one.

This very fact of the non-increase of the child, seems to me one of the strongest arguments against the extension of gestation beyond the normal period. It is hard to imagine that with all the conditions favorable to continued increase, growth should stop at an arbitrary date, — yet this is what we are to infer from the reports. With gestation prolonged from two to sixteen weeks, the labors are not spoken of as difficult, except in a single instance.

Of course where no evil results are apparent, there is little to recommend in the way of treatment. We can imagine occasions, wherein the induction of labor at the expiration of the ten lunar months, might be called for, and would be quite justifiable. Hydrocephalic monsters, cases like that of Dr. Henderson, and others where the life of the child might be imperilled would certainly justify such measures. Personally I would feel no hesitation in interfering.

In conclusion, I must apologize for the unsatisfactory character, and lack of practical value, of this paper. The subject is a curious and interesting one; but the only well established fact connected with it as yet seems to be that there really is very little known about it.

My thanks are due Messrs. Foote and Morrison, house-officers of the City Hospital, for valuable assistance in the preparation of this paper.

SIX CASES OF UTERINE DISPLACEMENTS TREATED BY SHORTENING OF THE ROUND LIGAMENTS, WITH REMOTE RESULTS.¹

BY CHARLES F. STRONG, M.D.,
Physician to Out-patients at Massachusetts General Hospital, Assistant Surgeon Free Hospital for Women, Assistant in Gynecology, Harvard Medical School.

THE operation to which the attention of the Society is invited this evening ranks as a comparatively new one, and has not, as yet, a definite value assigned it; a result largely due to the insufficient lapse of time that has been allowed between the performance of the operation and the reporting of the cases. It has its earnest advocates and equally vigorous opponents. I do not propose to burden you with anatomical details or facts, except such as have arisen in my own experience and the deductions which I have drawn from my own series of cases.

To avoid repetition I will give in detail the procedures I have followed in all my cases. I have aimed to make the operation as thoroughly aseptic as a laparotomy. I make an incision directly upon the spine of the pubis and locate the external opening of the inguinal canal, clearing away the edges of the ring, raise the little mass of fat lying just inside, and separating it by director and knife from the sides of the canal, draw it out until the round fleshy-looking fibre of the round ligament appears; exercising great care not to separate the proximal end of the ligaments from its fastenings. The fullest development of the ligament is not reached until an inch or more is drawn out. I free two or three inches of the ligament in this manner, handling it with great care and similarly treat the ligament of the other side. An assistant then lifts the uterus, vaginally, to its proper level and position, and any further slack of the ligaments is drawn out, and secured to the pillars of the ring by fine silk sutures.

The surplus mass of the ligaments is then folded upon itself and packed away, forming a plug in the ring, and the external wound closed without drainage. Dry occlusive dressing is applied, which is left undisturbed a week. A support inserted that will retain the uterus in its proper place and take all strain from the ligaments. The patient kept quietly in bed for two weeks.

CASE I. Mrs. C., multipara, forty-two years old.

¹ Read before the Obstetrical Society of Boston, January 13, 1888.

The patient had been under my care since 1882 with rectal disease, which I found to be due to prolapse of the uterus, and temporarily remedied by pessaries. The uterus, which measured three-and-one-half inches, was anteverted, and so imperfectly sustained that any support that prevented its sagging between the lateral bars was necessarily of such size or shape to incommode the patient and not infrequently cause erosions in the vagina. When wearing no support, the patient complained of constant pain through the rectum being often confined to bed by it. The first of August, 1886, I operated in the manner described above. Three-and-one-half inches of ligament were drawn out and secured on each side. There was no material difference in the size of the ligaments. A suitable pessary was adjusted, which was worn two months without inconvenience, then permanently removed.

The patient has been examined from time to time, the last examination being made January, 1888, one year and five months from date of operation. I find the uterus occupying as high a place in the pelvis as immediately subsequent to the operation. The patient is cured.

CASE II. Miss K., age twenty-eight, single. Chronic retroversion and retroflexion without adhesion. Symptoms: Backache and pain in both iliac regions; inability to stand. This patient had been under my observation for three years, during which time she had worn various pessaries, each of which afforded relief, but each of which also caused erosions in the posterior cul-de-sac of the vagina so that their use was intermittent and unsatisfactory. I operated in April, 1887, in the usual manner. There was a great deal of difficulty experienced from the thickness of the abdominal walls. I find in January, 1888, the uterus in perfectly normal position. The patient has been working as cook in a large hotel, and has not the slightest return of her old symptoms.

CASE III. Mrs. S., aged forty-five years, multipara. Referred to me in May, 1887, by Dr. W. L. Richardson. She had prolapse, the cervix just appearing through the vulva; areolar hyperplasia of uterus; and bilateral laceration of the cervix; rectocele, and cystocele of small size.

The symptoms were backache, attendant upon walking. I first repaired the cervix and on June 1, 1887, the eighth day subsequently, operated as described above for shortening the round ligaments. On the first of January, 1888, I found the uterus in its normal position and decreased in size to less than three inches. There was no rectocele, very slight cystocele. No longer any complaints of pelvic symptoms.

CASE IV. Mrs. S., aged forty-five, referred to me by Dr. W. L. Richardson. Prolapsion, lacerated cervix, rupture of perineum through sphincter, and of recto-vaginal septum. Rectocele and cystocele. The cystocele was covered by an immense ulceration from friction between the thighs.

I repaired the cervix and perineum in April, 1887, keeping the patient under observation for two weeks after she was about. The uterus stayed nicely in place, but in May she returned with prolapsion as complete as before. The newly-made sphincter was perfect, but the so-called "perineal body," had completely flattened out. July 4th I operated for shortening the round ligaments. Seven inches of ligament on each side were drawn out before the uterus was fixed in its proper position. The rectocele disappeared,

but the cystocele though improved, was not removed; on separating the vulva, a knuckle of the anterior vaginal wall was seen protruding. The patient was examined at intervals of a month with uniformly satisfactory results. The middle of December the uterus was found perfectly in place, the cystocele unchanged. Six-and-a-half months having now gone by, during which the patient had performed the usual household tasks of a poor woman, I felt justified in considering the operation a success, but to avoid any possible error, on January 2d, I again examined her and found the position just as bad as before, the uterus procident; lying entirely outside the vulva, with a large ulcer upon it from friction. The patient said it came down without warning, and not in consequence of any unusual strain, within a few days of her previous visit.

CASE V. Mrs. M., aged thirty years, multipara. Retroflexion and retroversion of uterus, prolapse and enlargement of right ovary, prolapse left ovary. Parametric inflammatory adhesions. Symptoms: Backache, constant bearing-down pains in the pelvis that prevented locomotion. Recurrent attacks of pelvic inflammation.

The patient had been under my care for more than a year, during which time she had the routine treatment, including many and various-shaped pessaries, which rendered her condition somewhat more endurable than when they were not worn. But the ovaries were an obstacle that prevented constant use of any pessary. From my notes, I find that no one form of support afforded relief beyond the period of one month. She was desirous of any operation that afforded a hope, however remote, of relief.

In the operation, performed June 28, 1887, I had the pleasure of assisting Dr. H. H. A. Beach, through whose courtesy I include the case among my own, as, except the immediate operation, the patient was entirely under my charge. The operation was performed in the usual manner, except that the two incisions were prolonged until they met in the median line, just above the pubes, and the ligaments were brought across the space, thus exposed and stitched to each other. The patient has been greatly relieved, not cured, nor do I expect her to be until the inflammatory exudation on the right is gone. All she suffers from now is pain of a neuralgic character, which affects the right side only. She takes plenty of exercise, and is vastly improved in general health. Anatomically, the operation has been a success. The uterus is in normal position, the ovaries are no longer prolapsed, and there has been a diminution of, at least, one-half in the enlarged ovary. The patient was examined the last of December.

CASE VI. Mrs. R., age, sixty-eight; multipara. Prolapsion, uterus between the thighs, and ulcerated; rectocele and cystocele. Symptoms: She declared the prolapsion was brought on by falling down stairs, and, as she had visions of securing damages, I have attached no value to subjective statements.

I operated November 1, 1887, in the usual manner. An abdomen, pendulous with fat, added greatly to the difficulty of the operation, and the ligaments were unusually adherent to the walls of the canal. Convalescence was modified by the patient removing the dressings in a few hours, and rubbing her dirty hands over the wounds, and by daily repetition of the offence, so that, for the only time, I failed of complete union by first intention. Every stitch-hole was an outlet for

pus; also, the patient got out of bed and walked about at the end of a week, and was thoroughly unmanageable. Still the ligaments held, and when I examined her, a week ago, the uterus was held high up, and then, two months after the operation, seemed firmly in place. With vulva opened, expulsive efforts showed cystocele and rectocele still present, but not protruding.

No. of case.	Disease for which Operation was Performed.	Immediate Result.	Remote Result.	Therapeutic Result.	Months Elapsed Since Operation.	Length (inches) of Ligaments Drawn out.
I	Anteroversion, enlarged uterus, prolapse, with rectal symptoms	Good 1st intention	Good	Good	17	3½
II	Retroversion and retroflexion, without adhesion	Good 1st intention	Good	Good	8	3½ and 4
III	Prolapse, areolar hyperplasia of uterus	Good 1st intention	Good	Good	7	4
IV	Procidencia, rectocele and cystocele, hyperplasia of uterus	Good 1st intention	Failure (good for 5 mos.)	Failure (good for 5 mos.)	6	7
V	Retroflexion, prolapse, and enlargement of ovaries, parametric adhesions	Good	Good	Good	6	3½
VI	Procidencia, rectocele, cystocele.	Good. Suppuration both incisions	Good	Good	2	3½ and 4

The tabulation of these cases show that the two in which were backward, and the one of forward displacements, accompanied by various complications, adhesions, prolapsed ovaries, etc., have been cured by this operation. The one of prolapse of the uterus, unaccompanied by cystocele and rectocele, has also been cured.

The one of complete prolapse, with large cystocele and rectocele, although for a considerable time apparently cured, has proven since to be a failure. In this patient seven inches of the ligaments were drawn out on each side, and this suggests the explanation that possibly there may be an abnormal tendency for the ligaments to be elongated.

The one of complete prolapse, with rectocele and cystocele, that has had but two months of convalescence, is entitled to a very guarded prognosis as to cure, and I have advised operating upon these latter complications.

From my own experience, I think it may safely be said there is no difference in the size of the ligaments dependent upon age or child-bearing. There is often a considerable variation between the ligaments of opposite sides. I have preferred to use the redundant portion of the ligaments to plug the external ring, instead of removing it, for two reasons: to lessen any possible danger of hernia, and to ensure that the patient's condition shall be no worse than before, in case the ligament should break away from its fastenings. There is but little danger of its sloughing if care be used in handling it.

The operation is not one of so great difficulty as has been claimed. Care in determining the landmarks, and delicacy of touch, rather than of sight, are its particular requisites. Of its dangers, the first is pyæmia, which appears as the one cause of mortality, and naturally suggests the question of sepsis; the other is of hernia in the wounds, which, I think, the method of closing the ring by the superfluous ligament will

decidedly lessen. So far, I have escaped both accidents.

As yet, I have subjected no patient to this operation until I have made a thorough trial of non-surgical measures for her relief and failed, but I feel sure that in certain cases in the future I shall operate much sooner.

Backward displacements of the uterus *which can be replaced*, even if complicated by adhesions or displaced ovaries, can by this means be cured, and our hospital clinics relieved of the large number of women whose treatment by pessaries is unsatisfactory both to themselves and us. It will be less often the operation is demanded by those who have time and money for other forms of treatment; but even among these will be found an occasional case where a prolapsed ovary or elastic adhesions interfere with the proper adjustment of a support.

I am not at all hopeful that in this operation will be found the cure for procidentia when there is a cystocele or rectocele of any considerable size, unless it be supplemented by the usual operations for these lesions. This conclusion is disappointing, and I trust future operations may prove it wrong.

Clinical Memorandum.

THREE CASES OF "HEREDITARY" LOCOMOTOR ATAXIA (FRIEDREICH'S DISEASE).¹

BY GEORGE B. SHATTUCK, M.D.,
Instructor in Clinical Medicine, Harvard Medical School, and in the Boston Polytechnic.

I HAVE only had time to write out these cases in the briefest possible manner. I regret it the less that the discussion of the previous paper has been rather long. I have not gone into the question of differential diagnosis or of pathology. This I regret the less because a paper was read upon the same subject by Dr. W. Everett Smith,² some two years ago. So it is not necessary to go over the same ground so soon before the Society again. Dr. Smith is here to-night, and he has sections of the cord which were made from one of his cases.

I had hoped that I would be able to show them to the Society, for specimens of the cord from these cases are very rare, as the autopsies have been very few; but unfortunately there is no microscope in the building, and I would take this opportunity, although not quite in order, to express the hope that some gentleman who has finished with his microscope, whether he is moribund or has ceased to take an interest in the subject, would give his microscope to the Library Association, rather than give it any more old books. I think it would be a very useful variation. The case reported which came under my own observation, exhibits most of the characteristic symptoms as they generally appear.

In regard to the frequency of these cases, in 1884 some forty cases had been tabulated. When Dr. Smith read his paper, he tabulated all the cases that were found up to that time. There were fifty-four tabulated cases, and subsequently, before he published the paper, he had heard of eight other cases, and he has heard of five since. This would make sixty-seven in

¹ Read before the Clinical Section of the Suffolk District Medical Society, January 11, 1888.

² Journal, Volume CXIII, p. 361.

all. Dr. Smith has just told me that Dr. Griffith, of Philadelphia, is preparing a report upon this disease for the Philadelphia College of Physicians, and that he has collected about one hundred and twenty cases. All this simply shows that the cases are rare, and although literature and practice have been searched very carefully for them, the number is still quite limited.

H. O., a boy fourteen years of age, born in New York, but living in a country town in Massachusetts, where he went to school, was brought to Boston for medical advice, the end of November, 1887, and his friends brought him to the City Hospital, where he came under my care. His own account of his previous history was that he had some illness when four years of age, of the nature of which he was ignorant, but he recovered, and was subsequently perfectly well. Six years ago, when eight years old, he noticed that he stumbled when he walked, and since then has walked less and less well in successive years, and now the difficulty in walking troubles him more than anything else.

He said that his appetite was good, the bowels somewhat constipated; otherwise the digestion was good, the sleep was good, there were no pains at any time, the eyesight was good, there was no trouble with the sphincters of bladder or rectum.

The temperature, pulse, and respiration were normal, as was the urine. Examination showed a well-developed, well-nourished boy of much more than the average intelligence; the tongue clean, protruding straight, with a slight tremor; the pupils were normal, reacting both to light and accommodation; there was no nystagmus; the left side of the chest was prominent in front, on account of a lateral curvature of the spine in the lower dorsal and upper lumbar region.

There was a soft systolic murmur, loudest at the base of the heart and to the left of the sternum; the cardiac area was normal. The lungs and abdomen were negative.

The gait was markedly ataxic; he could not turn quickly without falling; could not stand with his feet together, nor with his eyes shut. The motions of the hands were ataxic, he wrote with difficulty, and only when steadying the hand; he could not hold a glass of water in his hand, or carry it to his mouth. There were slight oscillations of the head, which were increased when he spoke; the speech was jerky and ataxic.

The grasps were strong: R. = 95, L. = 85, with the dynamometer. The knee-jerks were absent, the plantar reflexes present; sensation over the legs was slightly diminished, transmission was a little delayed; he could not distinguish a pin-point drawn across the leg from one drawn up and down.

The other members of the family are in a distant Western State, but the following facts were learned from a married sister, a very intelligent, healthy woman, with whom H. O. is now living: The first thing which attracted attention to H. O. was, at the age of eight years, a complaint of feeling tired and a certain unsteadiness in his gait; the trouble with his speech began more than two years ago, and was thought to have been worse than at present. The parents are about fifty years of age, are both strong, healthy, temperate people, and have had ten children in all. Of these children, two others—a brother,

the third born, and a sister, the youngest, and next to H. O.—are affected, as will be described, in a manner similar to H. O. The family history is an unusually good one: the grandfather on the father's side died of old age at ninety-seven years, the grandmother healthy until dying of a fever; the grandfather on the mother's side, a very healthy man, died of typhoid fever, the grandmother died at the age of eighty from an accident. The uncles and aunts on both father's and mother's side had all been healthy people; the mother expressly told this daughter, two years ago, that she had never heard of any nervous disease in any member of the family. Another brother, the third-born child of the parents, now twenty-four years old, was reported by my informant to have exhibited slight unsteadiness in his walk when seven years old, since which time he has grown gradually worse, and for the last eight years has lost the use of the lower limbs entirely. This brother is well developed and well nourished, has no affection of the speech, except that he cannot talk long at a time, on account of weakness, but has a bad curvature of the spine.

A little sister, the youngest child, now ten years old, first complained of weakness and a tired feeling at any exercise, with palpitation of the heart, when from five to six years old, at the same time an awkwardness in her walk became apparent; she also has a curvature of the spine. My informant reported her other brothers and sisters as unusually strong, healthy, well-developed people.

Taken in connection with a considerable proportion of the other cases hitherto reported, these cases tend to show that the term "hereditary" ataxia is a misnomer and misleading; the term Friedreich's ataxia—Friedreich first reporting and recognizing the disease—is open to the objection common to all such names; namely, it describes nothing. It is probable that the disease in these cases and in others, was of an older date than the first apparent symptoms; that it is, in fact—in contrast to true locomotor ataxia—a want of development, rather than a degeneration of the spinal cord.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

STATED MEETING, Wednesday, January 11th, at 19 Boylston Place.

The SECRETARY read an invitation from Professor Putnam of the Peabody Museum of Ethnology and Archaeology at Cambridge, to the members of the Suffolk District Society to meet him at the Museum and inspect the relics there arranged. Dr. Blodgett said:—

Some time ago Dr. Putnam invited the Section to meet at Cambridge and inspect the relics which he had succeeded in recovering from the Serpent Mound, and other places of archaeological interest in the West, and which are preserved in the museum at Cambridge. The Section in its meeting for November ordered the Secretary to arrange for such a meeting of the Society at Cambridge. Professor Putnam was shortly after-

ward taken seriously ill, and was not able to receive the Society. He is now recovered, and can meet the Society either the last of this month or the first of next. The evening of January 25th I think is not occupied by any meeting of a medical character in this building. February 8th I think is the evening designated for the meeting of the Surgical Section. If the society wishes to designate an evening I should hope that it would take that matter into consideration. I know of nothing to interfere with the evening of the 25th, if the Society wishes to take that time. The entire Suffolk District Medical Society was invited to attend the meeting of the Section at the Museum. I hope that some action may be taken upon this communication.

DR. MORTON PRINCE moved that the invitation be accepted for the 25th. Carried.

DR. BLODGETT: I would like to add that Professor Putnam very kindly invited the society to meet at the Museum in the afternoon and inspect the collections there arranged, and then to listen to a lecture in explanation of them in the evening. That perhaps would hardly be practicable, but the invitation was sent to me, and I think it would be very desirable if it could be accepted in that form. I suppose, however, that it would be hardly practicable for the physicians of Boston to go in the afternoon, and consequently the evening hour seems to me personally more likely to prove favorable for most of the members of the Section.

By vote of the society the meeting was appointed for January 25th at 7.45 o'clock.

DR. W. N. BULLARD read a paper on

A CASE OF CEREBRAL LOCALIZATION WITH DOUBLE TREPHINING.¹

DR. J. J. PUTNAM said: We have all listened with great interest to this paper. Cases of brain operation are rare among us, and we should learn from them all that we possibly can. Of course every one looks with a great deal of anticipation and hope to the future of cerebral surgery, and at the same time the chances of marked success would seem to me to be moderately limited. Although as Dr. Bullard has said, we can, through our knowledge of certain portions of the brain, localize with considerable accuracy certain lesions, especially those involving the motor functions, it is, on the other hand, I think, very difficult to tell what the nature of the lesion is, and the exact relation of the disease to the symptoms.

The difficulty of determining at what depth a tumor lies, the fact that tumors which grow very slowly so often occur almost without symptoms, and our ignorance of many of the conditions that govern the occurrence of symptoms, would seem, I think, to make us very properly cautious in raising any very sanguine expectations about the result in most cases. And although the case before us is highly interesting, and justified Dr. Bullard's claim in regard to it, that the diagnosis as to the lesion was made during life, it cannot count as one where much benefit could have been hoped for.

In those congenital troubles, I don't see how we can expect to produce a result that would be particularly favorable unless we can operate upon them very early. And then the trouble comes in that the difficulties of early localization are greater than at a

later time. The rapidly developing brain of the child is so susceptible to permanent injury; its growth is likely to be retarded; and an atrophy involving not only the seat of the lesion, but that of the whole hemisphere of the brain is liable to follow from any injury received at birth or in the very early years of life. Moreover, the fact that localized lesions, even if they might have been removed soon after they occurred, give rise to secondary changes not only in the hemispheres of the brain but in the deeper lying tracts, would, it seems to me, render this class of cases not a favorable one for operations of this kind.

In regard to the operation itself, of course the points are many and interesting, and I would not attempt to touch upon them at any length. One remark made in connection with a case operated upon in New York struck me as significant. It is important that the opening in the skull should be large; that quite a window should be cut, instead of the ordinary trephine hole, the belief being that under those circumstances the brain is less liable to protrude from the opening, and that the wound is more likely to heal favorably.

I recently saw a specimen from a case in New York, which unfortunately terminated unfavorably, where, although no suppuration had taken place and no sign of septic poisoning showed in life, the patient died from what was considered as red softening, immediately beneath the seat of the operation without it being possible to discover any cause for it. The brain simply became softened; that was all one could say about it. It has usually been considered that serious results from operations are not likely to occur. Dr. Spitzka, in experiments on animals, has gone farther than that, and says that not only are unfavorable results not likely to occur, but a second operation in the same region is even less likely to do harm.

I cannot help saying a single word about a case which I saw myself, which seems at once an illustration of the difficulties in the way of the diagnosis of cerebral tumors, and also of the possibilities of cerebral surgery.

It was the case of a woman who exhibited through life no localizing signs except toward the end of her life a slight facial paralysis on one side. Beyond that she had an intense headache, and a progressive stupor. She died, and at the autopsy a large sarcomatous tumor was found pressing apart the sides of the fissure of Sylvius, having caused no real injury beyond the pressure, to the brain itself, and being attached to the dura mater on the sphenoid bone with very slight attachments. If the tumor could have been reached it certainly could have been removed without injury, I think. On the other hand it had grown to the size of one-half or two-thirds of one's fist, without its being possible to diagnose it as central or cortical.

DR. MORTON PRINCE said: I think that this is a most interesting case, and that the reader is entitled to credit for his successful localization of the lesion. In regard to the possibilities of the operation, I feel like being a little cautious; feel as if we must and go ahead too fast. We don't yet quite know what the possibilities of brain surgery are.

But whatever the future may bring forth, there are certain fixed principles upon which, in the light of our present knowledge, brain surgery must be based. These are that an operation should be undertaken only for the removal of a lesion causing symptoms of

¹ See page 162 of the Journal.

irritation, or threatening the life of the patient. All operations thus far have been based upon this principle. A brief survey of these cases will make this clear. Up to this time there have been reported only fifteen cases of pure brain surgery. Of these, eight were cases of tumor, of which only three survived the operation, and of these three one died later from recurrence of the tumor. In the remaining seven cases, the operation was undertaken for the removal of a supposed lesion causing epileptic fits; in these seven cases there was recovery from the operation itself. It is interesting to note that the operator in these latter cases as well as in the successful cases of tumor was Victor Horsley, who is the only operator, I believe, in whose hands the operation has not ended fatally. He has operated nine times with only two deaths. In one of his cases only was death the immediate result of the operation, and in this case it should be said that the patient was in a very critical condition when the operation was undertaken. The second death (the one just referred to) was due to recurrence of the tumor. In the seven cases operated upon for epilepsy due to irritative lesion, there was complete and permanent cessation of the fits in four cases, and more or less improvement in three. In this latter class of cases the operation was undertaken with the idea as of removing the diseased tissue which was regarded the point of irritation and the exciting cause of the fits. Now it will be seen that the principle underlying all these operations was that there was a lesion of the brain, causing not merely paralysis and loss of function, but aggravating irritative symptoms, or else threatening life. In one case the fits aggregated three thousand in two weeks. To operate upon the brain in such cases as these I believe to be sound surgery and sound neurology, and there seems to be a legitimate, even if limited field in this direction, and perhaps a brilliant future. Time, however, can only settle this. But when we go from this to cases of paralysis, and that too with spastic symptoms, I confess I feel very doubtful. I am unable to see on what sound principle of neurology, operation in such cases can be based. I am unable to understand how a pure paralysis due to a hole in the brain is going to be improved by making the hole bigger. All that we could do by operation would be to cut out more brain, and that is equivalent to enlarging the lesion, and would simply increase the extent of paralysis. Furthermore, when spastic symptoms of long standing exist, as in the case reported, there undoubtedly exists secondary degeneration extending down along the direct fibres through the motor tract to the cord, and it is to this secondary degeneration that the spastic condition is due. Mere removal of the cortex could not then in any way relieve these symptoms.

There is one point of which the reader spoke and which I think should be emphasized still more, and that is the necessity, if you are going to operate, of taking into account only the symptoms themselves in localizing the lesion. That is, the proper localization depends entirely upon the grouping of symptoms, and it is only by such grouping that we can localize the disease. It makes no difference where the original injury to the skull is situated, and this should not be considered. This seems a trite remark, and yet I think it not uncalled for. I remember seeing a case the other day, a case of aphasia, where the trephining was done on the top of the head, attention being di-

rected to that spot on account of a former accident. Of course the lesion must have been lower down.

Perhaps there is another class of cases where there is a possible field for this operation, and that is where, in cases of this kind, there is not only paralysis of one or more members; but where there is also athetosis or clonic localized spasms of severe type. I saw a case of this kind some time ago. I suggested the operation, but did not see the patient again.

I think perhaps in that case something might have been done. I do not say this to criticise the paper, for I think the reader should be highly gratified at his success in localization in this case.

DR. J. COLLINS WARREN: I have very little to say, but have studied this matter up a little. I was struck by what was said about the caution with which we should go ahead in this region of surgery. I think that corresponds pretty well with the writers on this subject, especially in works on surgery. They say that the study of the cerebral topography, and the physiological action of these centres indicates rather what not to do than what to do. That is to say, the opportunities for interfering and trephining are comparatively few as compared with the indications when we should abstain, and yet many of these indications might tempt one, ignorant of cerebral topography, to interfere and relieve pressure or something else there.

For instance, if we have injury with symptoms of paralysis, which correspond to that tract, not too extensive, that might perhaps be a reason for interfering. If, for instance, after a blow, we have paralysis of the arm and leg, that might be an indication for trephining at the upper portion of the fissure of Rolando. But if we have total anaesthesia, not only is the motor tract involved, but an indefinite amount of brain convolution behind the ascending parietal. That is, it is an unknown quantity, a considerable surface, so that in order to reach that surface we would have to put on four or five trephines side by side, in order to uncover it and relieve it. There it would be contraindicated. Limited paralyses or anaesthesias, with well-defined injuries, give the indications for interference in a surgical case.

From the surgeon's point of view, there is one other indication for interference, and that is in hemorrhages from fracture. In a diagram in which the middle meningeal artery is represented, we can see how, by measuring back from the external angular process three-and-one-half centimetres, we can strike the exact point crossing the middle meningeal artery, and if we were to have symptoms of pressure in that part of the brain substance, for instance, of facial paralysis, we could readily interfere, and trephine at that point, and get at the artery comparatively near its origin. If we found that there was any difficulty at that point, but it appeared that there had been a hemorrhage from the artery, the indications are to put the trephine on the same horizontal line but more posteriorly, because the blood-clot may be in the posterior part of the brain rather than the anterior, in some cases. The reported cases are, I think, a considerable number, although I cannot quote them.

Dr. Prince spoke as if trephining for epilepsy were comparatively a novelty. I think that it is an operation that has been done considerably, although perhaps done in a different way, such as trephining for simple and depressed fractures. I would like to ask

if there is any special localization, other than the determination of the seat of the depressed fracture.

DR. PRINCE: I referred to a different form of operation. Not merely trephining, but removing a portion of the brain, even when there is no reason to suppose that there is a gross lesion.

Hughlings-Jackson has suggested that in cases of epilepsy and epileptiform convulsions, where you are able to trace the beginning of the convulsion to a focal point in the cortex, it would be justifiable to remove that centre as the focus of the epileptic discharge. For example, suppose the convulsion always to begin in the thumb, and to progress in a definite order throughout the body, in that case the centre for the thumb will be found to be the seat of the most intense discharge, and he considers it good neurology and surgery to remove this centre. Acting upon that advice, Dr. Horsley, in one of his cases did did remove the centre for the thumb, with the result that he cured the fits. It is in that sense that I speak of brain surgery as being a novelty, and it is in this field that perhaps there is a considerable opening for the future.

DR. S. H. WEEKS, of Portland, a guest, was introduced by the chairman, and said: I am indebted to Dr. Walton for this pleasant opportunity of meeting the gentlemen of this Society. I would much prefer to listen to the discussion than to have anything to say, and yet I am sure you will allow me to express my pleasure and great satisfaction to find such a number of men, who, while they are doing general work, yet are devoting much of their time to special subjects such as this of brain surgery. My work is that of a general surgeon, and yet I am specially interested in everything which pertains to local surgery, because it is to the work of the specialists, men who are doing the special work, that the general surgeon, by and by, and through him the community at large, are to receive the greatest possible benefit; because when you have explored and investigated this field, and have rendered the operations which are now hardly to be thought of, legitimate and practical, then the general surgeon will be able to come in and do the good which he cannot do without your special work.

If I may judge from my own experience and observation, the operation of trephining the skull is not attended with as much danger as is supposed. I recall a case (and I wish I could detail it more accurately than I am able to), that I operated upon at the Maine General Hospital some year or eighteen months ago, in a young man who was having epileptic fits every week, and sometimes twice a week, following an injury which he received when a lad, some fourteen or fifteen years ago. He was riding a horse for raking hay, and was suddenly thrown from the horse, and as the rake revolved one of the teeth, made of steel, struck his head near the bregma and I think a little to the right of the median line. At the time there was a compound comminuted fracture with depression. The physicians at the time removed some portions of the skull.

The wound healed, leaving a cicatrix, and in the course of a year or two there commenced convulsions, first in one hand, and I am sorry that I am not able to say which, but I hope some time to report the case in the JOURNAL, that you may have the exact measurements and symptoms, and derive more advantage than from any recital here now. I am sure that the convul-

sions first started in the hand, and then extended into the arm, and then involved the entire side. He had been at the hospital once before, and after consultation we refused to operate.

He went home and suffered another year, and his convulsions becoming very frequent, he again returned, and said: "If there is anything that you can do, I want it done, no matter what the risks or dangers are." At the second consultation we decided to operate. I repeat this more to show the safety of the operation than anything else. Making an incision through the skin, I found that there was a portion of the skull that had not been restored, and here the scalp and dura mater were adherent. I dissected off the scalp from the dura mater, directing my dissection as well as I could so as not to open into the cavity of the arachnoid, and came to the edge of the bone, which seemed to be indented, and then took out a section of bone. Not finding a depression there, I felt that I had not reached the difficulty, and took out another portion, and upon that button there was an exostosis from the inner surface to the extent of three or four lines, extending down on to the dura mater and firmly adherent to it. After I had loosened the segment of bone, finding this projection adherent, I was obliged to take out an elliptical portion of the dura mater in order to remove the bone. I brought the edges of the dura mater together with small catgut suture, and then closed the external wound, applied a simple dressing, and put the patient to bed.

There were almost no unpleasant symptoms following. In fact, so comfortable was he after the operation, that he would sit up in bed in spite of my cautions, and declared that the only thing that he was kept in the hospital for was to let his hair grow again. I believe the danger in trephining is not as great as we have supposed. And while there are many diseases that we may not be able to cure by brain surgery, yet I believe there are many cases which are capable of cure, or of being benefited by these operations. One word in reference to the future of this patient. While the fits were not cured, they were very much mitigated. I saw him a few weeks ago and inquired particularly for the symptoms, and he said that once a month or so he would have a slight convulsion, but nothing to compare with what they were before; and were it not for his intemperate habits, which he continues, I believe the benefit would be much greater. There are other cases that I think of, but I will not relate them. I thank you for your courtesy and kindness, and shall be very much interested in listening to the further discussion.

DR. P. C. KNAPP said: I have been very much interested in the paper as showing the very exact localization of the lesion. I would agree with Dr. Putnam and Dr. Prince in what they have said. There is one point, however, that seems worthy of notice, and that is the fact that although there was apparently a lesion in the cortex, which is so common in these cases, there were no convulsions at any time in the history. A year and a half ago, Dr. Sachs, of New York, laid special stress upon the presence or absence of convulsions as an important symptom in the localization of the lesion. In cases of intra-cerebral hemorrhage or embolism, he believed that there were no convulsions, but in cases where there was cortical disease, he believed that convulsions were present.

This case, I think, is of special interest, as showing

the presence of probable cortical disease and entire absence of convulsions. I would say, moreover, that as the case was reported, I do not see what justification there was for either operation. Certainly, the cicatrix on the right side caused no symptoms, and after so long a duration there was no evidence of any disease there to be operated upon. Nor do I see what could have been gained in any way by operating upon the other side, for the symptoms were those merely of paralysis and secondary degeneration, and no operation whatever could have helped the patient.

I agree with Dr. Prince fully that in case of convulsions or athetosis, perhaps there might be benefit in removing portions of the brain substance, but certainly there is one point that might have a bearing in such cases. In some cases that I have seen, where the limb was only partially paralyzed, there were athetosis or convulsions starting in the hand. Here, if you were to cut out the centre for the hand, which was the chief seat of the lesion, you would produce absolute paralysis of the hand; this would deprive the child of a fairly useful hand, and would leave him in a less advantageous position for getting through the world than he was in before.

DR. PUTNAM: Of course, in localization we refer chiefly to cortical localization. It seems to me, however, that this case is one where localization of that kind is really not possible. What we had present was a hemiplegia, apart from the secondary changes. The aphasia, I take it, would count for little or nothing, for the child had never spoken. Even if that were not so, the function of speech would be probably sooner lost in a child's brain than in an adult's, so I cannot see how we could strictly localize the lesion. It was evident that it involved structures either so extensive or so far beneath the surface as to include all the tracts coming from the opposite side of the body; that is to say, it must have been a very extensive cortical lesion, and in that case not strictly localizable, or else a moderately deep-seated injury; and I don't see how it would be possible to localize it with certainty in one part rather than another of the motor tract, except that we might, perhaps, say that it was not in the pons.

DR. KNAPP: I would like to ask Dr. Prince one question. In speaking of Mr. Horsley's removing portions of the cerebral cortex where the convulsions always began in one portion of the body, he said that Hughlings Jackson advised it. I would like to know whether he recalls any case in which Mr. Horsley operated where there was no gross lesion of the brain. It seems to me that in every case he found some thickening of the meninges or a tumor, or something of the sort. I don't recall any case where there was no disease whatever, where there was simply the functional disease starting at that point.

DR. PRINCE: There were, I think, two cases. In one he removed not only the tumor, but also the thumb-centre. In this case, he diagnosed a doubtful lesion. He knew that there was a lesion, but was in doubt as to its exact nature.

As I understood the report, when he came to open the skull he found no lesion whatsoever, but he still removed the portion of the brain corresponding to the seat of the epilepsy. At any rate, Jackson advised it, and said that he would advise the operation in the future. It seems to me that this is a sound principle to go upon simply as a theory in a very grave case. Of

course, you would not operate upon a case of that kind unless it were a case that justified some risk.

DR. KNAPP: I didn't know that a case had been reported where there was no gross lesion.

DR. WEEKS: In speaking of the localization of the different functions of the brain, I recall a case that came under my observation several years ago, where a man who had organic disease of the heart was taken suddenly with aphasia, and the sickness lasted only two or three weeks. His sickness increased day by day, manifesting decidedly cerebral symptoms. The most prominent symptom was the loss of the power of speech. It was at the time when the discussion as to the seat of language was going on in the medical journals and societies, and when the medical opinion was not as well satisfied as now in regard to the localization, and yet my attention had been called to the anterior portion of the left hemisphere, the temporal lobe, as the seat of language, and I watched the case with a good deal of interest. When he died, I was successful enough to get an autopsy, and, on taking off the calvarium, I found the dura mater at that point a good deal congested; and on opening through the membrane, and going through a very thin portion of the cortical substance of the brain, I came to a large abscess.

Now I believe that to-day, if you had such a case as that, you would operate upon the abscess and give exit to the pus, and in such a case as that I believe you would save the life of the patient. Here was the seat of the lesion, and, so far as any case can prove the theory, certainly this goes to substantiate the theory of the localization of the seat of language.

DR. WALTON: I have been very much interested in hearing the report of the first case, so far as I know, that has been done in Boston of this sort. I am quite agreed as to the importance of the surgeon's being prepared for early operative interference in just the cases that are indicated. I do not think, however, that this variety of cerebral surgery, where the healthy skull is trephined without fracture or other injury, has so great a future as, perhaps, was hoped for it at first; certainly no such future as abdominal surgery, for the cases are really limited in which the operation is sufficiently indicated.

I agree with Dr. Prince that, as we eliminate the cases, we shall finally become pretty well sifted down to lesions which are irritant, and lesions that bring about decided pressure symptoms, in which we feel pretty certain that we can relieve pressure. I think there are certain localized abscesses which can be operated upon with advantage.

All these lesions must be decidedly near, or at the cortex, or we are not justified in operating.

The result will be, as it seems to me, that there will be so few cases in which we will feel ourselves justified in operating, that opportunities will be rather rare. We have been on the lookout at the Massachusetts General Hospital for an acceptable case, and I fancy it has been true at the other hospitals, and there has not been, so far as I know, any case admitted. The nearest we have come to it was one case in which we did diagnosticate a tumor in the cortex. There was paralysis or partial paralysis, and if I remember rightly, convulsions of one arm, in which we were sure that the tumor was at the cortex, and advised operation, but the patient demurred.

I was interested to hear Dr. Putnam speak of a

considerable opening in the skull. I think it is important to make as large an opening as possible, not only for the sake of after-results, as far as the case is surgically concerned, but also for the sake of helping us to localize. My attention was particularly brought to that point by going to the demonstration of Drs. Warren and Richardson, last evening, in which the skull was trephined on the cadaver and the fissure of Rolando found. The fissure was localized according to the regular method, the opening made perhaps three-quarters of an inch in diameter, and directly in the middle of the opening was a fissure, but it seemed to me at almost right angles with the direction one would suppose it to go. But on removing the calvarium and dura mater, it was afterwards discovered that it was the fissure of Rolando, but it had taken a turn at that point.

It is not always so easy, even after the brain is removed, to determine just where the various fissures are, as sometimes those fissures which should be the most distinctly marked are the least so, and other less important fissures become more marked. And in this case I should say that the frontal fissure was much more marked than the fissure of Rolando.

DR. BRADFORD: I did not have the pleasure of hearing Dr. Bullard's paper, but he has allowed me to read it, and I think it covers the ground pretty thoroughly. It only remains for me to say what the reasons were for performing the operation. I think some apology should be made for an attempt at an operation in a child who was idiotic. The operation was done in this case chiefly for the reason that it was hoped that the spastic symptoms might be relieved. The parents were told distinctly, that it was purely experimental surgery, and they wanted to have the operation done, even on those grounds. Notwithstanding that in these cases of spastic paralysis the cortical substance is in a large number of cases involved, it was hoped that possibly some irritative centre might be found, and the removal of that might relieve the spastic paralysis of the leg and arm, and render the locomotion of the child better. The result proved that the operative interference was not justified except as an experiment.

The cause of death in this case is, I think, somewhat interesting. The child died unquestionably of shock, and the question arises whether the double trephining may not have been more than was proper to have done.

It is a question whether it might not have been better to have trephined in one locality, and waited before trephining in the other. It did not seem so at the time, and the double trephining was undertaken; trephining over the cicatrix to satisfy the parents, who believed that the condition was in some way due to the depression of bone. Both Dr. Bullard and I thought not. That double trephining may have given rise to the shock.

Another cause of death may have been the use of morphia before the operation. The child was given morphia subcutaneously or by the mouth a short time before the operation, carrying out Mr. Horsley's idea for the purpose of contracting the vessels in the brain. I think a larger dose was given than would have been needed. One-twelfth of a grain was given and I think one-twentieth would have been better. At any rate, during the etherization the child was more or less under the influence of the narcotic. That may have

acted injuriously, although the child came out from the ether and morphia before dying.

Another cause which may have given rise to death, was bleeding from one of the larger vessels in the diploe, during the operation. That was plugged by a piece of wood, but the child lost some blood. I think, so far as we can judge from the single case, it would not be desirable to do a double trephining in a child.

DR. M. H. RICHARDSON said: I was unable to hear the paper, for which I am very sorry, but I have a word to say in regard to the outlook for operations upon the brain in instances of this kind. It seems to me, as Dr. Walton has said, that the probable future of cerebral surgery does not promise the results which we get in other parts of the body, the peritoneal cavity for instance.

My own experience in trephining for the sake of finding an abscess, for removing a possible irritating cause of epilepsy, has been uniformly unsuccessful. I reported two cases a year ago of trephining for epilepsy, and another for cerebral symptoms after compound fracture, without any benefit whatever. And since then I have trephined to evacuate a probable abscess after gun-shot wound, a good case for symptoms arising after injury. In the latter case death followed, and in the first two cases there was no benefit whatever.

It seems to me in a certain number of cases, where symptoms of definite localized irritation can be made out, at present it is the duty of the surgeon to interfere on the chance of doing some good. But it seems to me that as matters now stand, the chances are that in a large number of cases there will be no permanent benefit following the operation.

DR. BULLARD: I would like to say one or two words in regard to cerebral surgery. I agree entirely with Dr. Prince and Dr. Putnam in regard to the fact that we should not be too fast in brain surgery. I think that nobody who has had anything to do with the localization of lesions, fails to understand the difficulties, and the many problems we have to consider and the very small number of cases in which we are justified in operating.

But it does seem to me that such a class of cases exists, and although the most prominent cases are those where convulsions or irritant symptoms follow, yet we must not limit ourselves to them entirely. Ross says that the larger number of hemiplegic cases and convulsions come on at least by the time the child has reached eight years, or sometimes a little later. I have not experience enough to know whether that is true, but it is certainly true that, in a certain number of cases of spastic hemiplegia, the convulsions do come on later. Now I should be very slow to advocate operation in cases of spastic hemiplegia unless there were some special reason for doing so beyond the mere fact of the existence of a hemiplegia; but I believe that there may be certain cases where it would be advisable to perform the operation.

In this particular case I think we had good ground for localizing the lesion as we did. Of course I have not gone into all the details. A good many symptoms were absent which would have been likely to be present if the lesion had been in other parts of the brain. Of course, in such a case, the operation is done with the understanding that it can only be experimental.

DR. BRADFORD: The sense of the meeting seems

to be in disparagement of cerebral surgery. I don't think we shall put ourselves in the line of modern surgery if we take the ground that cerebral surgery has not a future, and I think we can anticipate a brilliant future for it. We are only in the beginning and, I think, what has been done shows that there is a great deal more to gain when our experience is greater. I think it is in the recollection of most of us here, that here in Boston the statement was made on the best surgical authority, that ovariectomy was not a justifiable operation. We have lived to see that dictum not accepted, and I think we will find that cerebral surgery has a future before it that we have not yet thought of.

DR. GEORGE B. SHATTUCK then reported some cases of

FAMILY ATAXIA.²

DR. P. C. KNAPP: I have listened with a great deal of interest to Dr. Shattuck's report, and I am indebted to him for the privilege of examining the boy when he was at the hospital. As Dr. Shattuck has said, these cases are so extremely rare that every additional case is of utmost interest. The ordinary term for the disease seems to me to be a misnomer, confusing it with true locomotor ataxia, with which it really has nothing to do.

Dr. Shattuck's case did not present one of the very common symptoms seen in Friedreich's disease; namely, nystagmus. It did, however, present other symptoms which are characteristic of the disease, and which are rarely, if ever, seen in *tabes dorsalis*; namely, the curvature of the spine and the disturbance of speech. Furthermore, in the cases of Friedreich's disease which have been reported, one of the very striking features is the absence of the most constant symptoms of *tabes dorsalis*, such as the lancinating pains, the disturbances of sensibility, and all the disturbances of the pupils. There is a very early onset of the ataxia, which, in *tabes*, is a symptom which marks the second stage, and may not come on for fifteen or twenty or twenty-five years after the first symptoms of the disease. Furthermore, in Friedreich's disease we rarely, if ever, get the less common symptoms of true *tabes*, such as the various crises, and joint diseases.

I think the cases reported by Dr. Smith were in a way rather exceptional, for most of them had some gastric disturbance about the onset of the disease, yet it was nothing at all like a true gastric crisis. The disease is, as Dr. Smith's autopsies show, a combined sclerosis of the cord, rather than any especial disturbance of the posterior columns.

I have brought with me to-night, thinking it might be interesting, a book on the nervous system, which gives a section from Dr. Smith's case, and also a series of sections of the cord in one of Friedreich's original cases; and from some of the sections it will be seen that the degeneration is not only a very complete degeneration of the posterior cornua, but also extends into the lateral pyramidal tracts, the direct cerebellar tracts, and passes around the cord, involving, also, the anterior pyramidal tract, the columns of Tücker.

The cases in the family of Dr. Shattuck's patient are also interesting, as beginning quite early. Many of those reported have been found to come on about the time of puberty. It further is distinguished from

true *tabes* in that the latter never comes on, so far as I know, in childhood, and, in the vast majority of cases, is connected with a previous syphilitic taint, which has not been found in the cases of Friedreich's disease. Another symptom which was very well marked in this case is one which is stated by both Erb and Spitzka to be absent in Friedreich's disease; namely, the swaying of the body when the eyes were shut, and the feet placed together. In this case the swaying came on without the closing of the eyes, no matter where the feet were. The patient could not stand when he shut his eyes, unless we propped him up in a corner.

As I said, the disease is rather a general degeneration of the various fibres in the spinal cord, due very likely in some cases to some defect in the cord itself — possibly, as has been noted in one or two cases, to an exceedingly small cord. The disease is of great interest, especially among what might be called the developmental diseases of the nervous system. I think we are all indebted to Dr. Shattuck for presenting the case before us to-night.

DR. W. E. SMITH said: I think Dr. Shattuck's case is a typical one as regards the symptoms, and far more typical than some of the cases that have been put on record as falling under this disease. In regard to the nomenclature, I quite agree with Dr. Knapp in his remarks that it is not a true locomotor ataxia, and perhaps I would put it stronger than he has, and say that it is not a locomotor ataxia at all. At the time that I read my paper, Dr. Hammond felt a little slighted that his cases, which were reported in 1882, were not included. But my reasons for not mentioning them I stated at the time to him, and it seems to me that they were sufficient. He reported six cases that had come under his observation, but in none of the cases had any symptoms of ataxia occurred, as he takes particular pains to say in regard to each of them. "There was no ataxia present." As I said, why call the disease ataxia?

There were some cases reported by Dr. Coleman, who lived in Arkansas, but they had marked pulmonary symptoms, and one of them vomited large amounts of pus. I did not include Dr. Warren's cases, for the reason that they had not been put on record in print. I think that considerable confusion may have crept into the discussion of the disease from its supposed connection with locomotor ataxia.

In regard to the reported number of cases, I think I found about sixty, but Dr. Griffith, of Philadelphia, is preparing a paper upon the subject, and writes that he has collected something like one hundred and twenty cases. From what sources he gains his cases I am unable to say, but I more than suspect that it is from records of cases that have not been published.

In regard to the causation of the disease, I have very little more to say than I said in the paper; namely, that habits of drunkenness seem to play an important part. Masturbation has been supposed to be an element, and I inquired into it in my cases, but I am quite convinced that it did not exist. Of the subsequent history of my cases I have very little to add. The four whom I then said were surviving are still alive.

The girl whom I pictured is mentally less acute, although she was then a simple existence. She did take a little interest in hearing the town topics, but now takes none at all, I am told. The father of the family, whom I took to be an exceptional case, in that

² See page 168 of the Journal.

the disease developed at the age of sixty-six, has had several attacks similar to the one I described, leaving him in a pretty helpless condition so far as any active work is concerned. Two of the younger girls are still living, and in practically the same condition. The disease does not seem to partake of any paralysis, as Dr. Hammond's cases would seem to indicate, but is purely ataxic. In these cases, the girls, when asked to move the limbs, felt the power to do it, but were surprised that they did not move. When they did move them they went by jerks, and not in any coordinated or orderly way.

DR. PUTNAM: I have been very much interested in the disease ever since I saw two cases at the hospital that Dr. Smith afterward reported, and had an opportunity of examining the specimens, and also two other cases at the Massachusetts General Hospital, which were at the Out-Patient Department, and afterwards in the Wards, under the care of Dr. Ellis.

These cases belong, pathologically, among the so-called "combined sclerosis" of the spinal cord, and as such are perhaps related clinically, in some degree, with the other members of the same group, — spastic paraplegia and ataxic paraplegia.

In many of these cases there are changes in the ganglion cells besides the fascicular degeneration, and the whole process is sometimes associated with extensive degenerative changes elsewhere in the nervous system.

DR. SHATTUCK: With reference to the name it seems to me that it might well be improved upon. I don't like "Friedreich's disease" as a name, because I think it is a bad thing to call any disease by a man's name. A name ought to be in itself a description to a certain extent of that which it names. The word "hereditary" is certainly out of place, and "locomotor ataxia" is so much associated with the disease which we previously knew as such, that it also seems undesirable to apply it in this case. Something better certainly could be easily arranged.

With reference to one or two points that Dr. Knapp has spoken of: The nystagmus, I do not consider so constant a symptom as he seems to consider it. My impression is that one-third, and perhaps one-half do not show it. In regard to standing with the eyes shut (Romberg's Symptom), certainly Friedreich described it in connection with his earlier cases, and regarded it as one of the symptoms to be looked for.

DR. PRINCE: I merely would suggest in regard to the matter of name that there may be the same objection to the title "family ataxia," for if the case that I reported two and a half years ago was really such a case it tends to upset that fact, for there has not yet appeared another case in the same family. Of course they might develop yet.

DR. SHATTUCK: The question of development at puberty also, is an important one. That was Friedreich's impression when he first described the disease. But I think now in the cases as we have them tabulated that we find quite a large proportion develop without reference to that period, and develop at a much earlier age than the age of puberty.

DR. SMITH: In regard to this latter point in the case which I reported, the mother was very sure that the earliest symptoms occurred at the age of puberty, and I labored for some months under that idea, but on further questioning her I found she had associated the change in their gait with changes in the other

functions of the body, and that really the first symptoms appeared between the ages of five and seven, and I confirmed the statement of the mother by the statements of the boys and girls who grew up with the patients.

DR. SHATTUCK: I believe, as Dr. Smith says, that a still larger number could be found developing at a very early period if we could get the true facts. It seems to me that increased acquaintance tends to prove that this disease has a different pathology from the ordinary locomotor ataxia, from this point of view; that it is a disease from want of development of the nervous system, while in the other we have a disease of degeneration. In many of these cases the nervous system has, I imagine, been from the very beginning very defective.

AMYLEN-HYDRAT.

DR. FRANCIS H. WILLIAMS then exhibited the new drug, amylene-hydrat. He said: This substance may be used as a substitute for chloral. It has a peculiar odor something like ether, and the taste is camphor-like, with an after-taste of peppermint. It is a clear, limpid liquid, and is fairly soluble in water. It takes about eight parts of water to dissolve one of the drug, and it is quite freely soluble in alcohol. The dose is from half a drachm to a drachm, 3 to 5 c.c. It does not act so strongly as chloral, it is not so powerful a drug, but on the other hand it is free from some of the dangers of chloral. It does not act to depress the heart and respiratory centre as much as chloral does, and for that reason is a safer drug to use.

In many cases it seems to work well, in a smaller number it has not been very efficacious. In one case for example, in Dr. Mason's service, forty minims of the drug were used in a uterine case where the patient had slept very poorly for several nights. She had some pain. One-sixth of a grain of morphia, repeated, was not able to give her the required sleep. This new remedy was given at 10 o'clock. At 10.15 she was asleep, and she slept nearly all night. As a rule the after-effects are not unpleasant. Here and there a few inconveniences are experienced from it. In one or two cases the remark was made that the patient experienced a pleasant sensation for an hour as though drunk, and was somewhat silly. In this case she felt contented, and went to sleep in about an hour.

I will not do more than call your attention to the drug and suggest that for certain cases it is likely to be a valuable substitute for chloral, but a better reason for not saying more about it is that perhaps Dr. Mason will be kind enough to tell us something of his experience in using the drug. I have reports of cases where it has been used in Germany, and in about eighty per cent. of the cases it has proved satisfactory. Unpleasant after-effects have not been noticeable.

DR. A. L. MASON said: I have a brief memorandum of some of the cases, but I will not delay you with it at present except to say that they were all cases of marked insomnia. There were two cases of rheumatic fever, with heart complications, in which we obtained four hours' sleep. In one case of severe measles four nights of uninterrupted sleep were obtained. One restless typhoid patient was not quieted by urethan, chloral, bromides or opium. Drachm doses of amylene-hydrat gave a good night's sleep. A case of acute tonsillitis, sleepless for four nights, and

another patient with dyspnoea, slept well after half a drachm. A case of abortion obtained good sleep for five nights.

Another patient in whom urethral caruncles were removed, who had sleepless nights, and a uterine case, in which one-sixth of a grain of morphia repeated was of no avail, had a good night's sleep after forty minims. And the same dose answered the purpose in a case of chronic nephritis with insomnia. A patient with cardiac insomnia, who has been treated with everything else, has had from five to seven hours sleep after this drug. Its effect appears better than that of paraldehyde or urethan. It seems to be free from the disagreeable after-effects of chloral or opium. The sleep usually comes within twenty minutes after it is given. No ill effects were observed. There was mild intoxication in a few instances.

These cases are, of course, too few in number to draw conclusions from them as to the power of this drug. I believe it is not yet in our market and probably Dr. Williams has had the only specimen.

DR. ALBERT N. BLODGETT: If it is in order I would like to say a word for paraldehyde, which has been mentioned in connection with the new drug presented to-night, and which has previous to this seemed to be the drug which has produced better results than any other of that character. Of course, when I say "of that character," I mean a drug which is a simple hypnotic and not a sedative like opium.

Paraldehyde has on several occasions, under my observation, produced a sleep which seemed to me more restful than that produced by any other hypnotic except perhaps urethan, and the latter seems to me less efficient, as it soon loses its influence, whereas paraldehyde seemed not to lose its efficiency. What pleased me most was the remarkable absence of after-effects after paraldehyde, which has been mentioned as pertaining also to this new drug. That seems to me to be an important advantage for we don't know how long it may be necessary to use it, and the use of other drugs might not be desirable. The nauseous taste of paraldehyde, and the eructations that rise after its use and the very great difficulty of mugging it pleasantly with other substances, are serious objections to its employment.

DR. WILLIAMS: This new drug does not seem to me to be as disagreeable to take as paraldehyde. That is one advantage which it has, and I think it is a rather stronger drug.

Adjourned at 10.15 o'clock.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

C. M. GREEN, M.D., SECRETARY.

DECEMBER 10, 1887, the PRESIDENT, DR. WILLIAM L. RICHARDSON, in the chair.

DR. J. G. BLAKE read a paper on

PROTRACTED GESTATION.¹

DR. BROWN asked the reader whether he had observed that nationality had any influence in protracting gestation. The reader replied in the negative: his own cases included three nationalities, — Irish, Italian, and German.

DR. STCLAIR queried whether shock might not cause protracted gestation: he quoted the case of a lady on shipboard, who at the expected time of labor was subjected to the shock incident to fire at sea, and whose gestation was supposedly thereby protracted one month.

DR. DOE remarked that both Müller and Villard deny the existence of prolonged pregnancy as a physiological condition; the former asserting that where it does exist, it is due to the pregnancy being extra-uterine; the latter explaining it as depending upon varying conditions of dystocia, or the existence of extra-uterine foetation, or the presence of carcinoma of the uterus, or atresia of the cervix. If they are right in their assertion why can not those cases reported by Dr. Blake as extending over 300 days, the child being born alive, be explained by the fact that fecundation of the ovum did not take place until just preceding the menstrual epoch first missed? Schroeder says that fifteen days may elapse before the union of the spermatozoa with the ovule takes place.

Now if the vaginal secretion is in a condition to allow the spermatozoa to live fifteen days, why not twenty, thirty or longer; or, in persons whose menses appear irregularly, why not until the following menstrual period. Dr. Arnold Thompson at the London Obstetrical Society, December 1885, reported the case of a woman who went 301 days from the time of the last coitus. The dates were absolutely certain, but the child was only of full average size and weight. I should think this case might be explained by supposing a prolonged duration of the menstrual interval, and that conception took place just before its occurrence. Dr. Tyler Smith believed in this theory, and Cederschild is reported as having observed cases of excessive prolongation of pregnancy where the menstrual interval had been unusually long.

DR. LYMAN said there was so much uncertainty about the time of fecundation, the occasional faithlessness of the wife adding also to this uncertainty, that it was practically impossible to fix the probable beginning of a pregnancy except when the husband is at home for only short, definite periods. In such cases the duration of pregnancy is approximately 280 days.

DR. GREEN said that as a woman might conceive just before a menstrual period and that period fail to appear, it was possible for a pregnancy to be apparently lengthened three weeks, — three weeks, that is, beyond the predicted time of labor calculated from the last appearance of the catamenia: he had frequently observed this apparent increase in the duration of pregnancy. In an actual protraction of the period of gestation he was not inclined to believe.

DR. RICHARDSON said that it always seemed to him strange that cases of so-called protracted gestation are being constantly reported; but one never hears of cases which, on almost the same weight of evidence, should be reported as so-called shortened gestation ending with an apparently fully matured child. He had often wondered whether the menstrual period of the individual might not have something to do with determining the period of gestation. The catamenia in most women occurs every 28 days, and the period of gestation corresponds to ten periods or 280 days. He questioned whether in women who menstruated every 26 or 29 days, for example, it might not be found that the period of gestation was 260 and 290 days respectively. Of course this is all the-

¹ See page 164 of the Journal.

ory, but it would be interesting to see whether the period of gestation bore any relation to the catamenial period.

DR. J. P. REYNOLDS remarked that in the light of modern scientific investigation ovulation and menstruation cannot be supposed to have any necessary relation to each other: when they occur together, it must be considered a coincidence. In regard to the time of fecundation, the speaker had known instances in which married people believed that they had for a considerable period prevented impregnation by limiting intercourse to certain days of the intermenstrual interval; while later in the history of the family, this precaution ceased to insure immunity.

DR. C. W. TOWNSEND read, by invitation, a paper on

INCONTINENCE OF URINE IN CHILDREN,

of which the following is an abstract:

After reviewing briefly the physiology of micturition and speaking of the importance of investigating the cause in every case of incontinence, the reader gave the following list of causes:

I. Reflex.

- (1) Increased quantity of urine: (a) diabetes; (b) nephritis.
- (2) Irritant quality of urine: (a) increased acidity; (b) uric acid crystals; (c) calcic oxalate crystals; (d) excess of phosphates.
- (3) Vesical calculus.
- (4) Hypersensitive state of external genitals from: (a) stricture of urethra; (b) phimosis; (c) balanitis or vulvitis.
- (5) Anal irritation from: (a) pin worms; (b) eczema; (c) fissure.
- (6) Psychical.
- (7) Increased irritability of bladder.

II. Atony of sphincter vesicæ.

- (1) General debility.
- (2) Spinal disease.
- (3) Acute febrile disease.

III. Malformation of bladder or urethra.

Of 355 children, 179 boys and 176 girls, taken at random among the lower and middle classes, 77 or 21½ per cent. were found to be incontinent, the limit of normal incontinence being placed at three years. The majority of normal infants were found to stop wetting their clothes under one and a half years of age. Among the points brought out by an analysis of the 77 incontinent cases were: that 42 were boys, 35 girls, that in 47 the incontinence was nocturnal only, in two diurnal only, and in 28 both nocturnal and diurnal. In 63 incontinence continued from infancy; in 14 it came on after the primary incontinence of infancy had ceased.

In discussing treatment the uselessness and evil of corporal punishment in the majority of cases was spoken of. In regard to the operation of circumcision and breaking up adhesions between the corona and glans, its usefulness was recognized and cases cited, but it was not regarded by any means as always curative, for other causes might be operative. The investigations of Parks, who found more or less adhesions in 80 per cent. of boys under 9 years were mentioned as showing that adhesions are far from being always a cause of the trouble. Where no other cause could be found other than an increased irritability of the bladder, the use of belladonna in full doses till physiolog-

ical effects appear had generally been found to give satisfactory results.

DR. INGALLS had had cases of incontinence under all the heads mentioned by the reader: many associated with pin-worms, others with elongated prepuce, but very many kept up by the severity and cruelty of parents. His last case was in a boy nine years old, who had no mother and who slept with his father. The father beat the boy at night whenever the latter wet the bed. He had prevailed upon the father to discontinue his harsh treatment and had given the boy iron: in two weeks the incontinence had ceased.

DR. ABBOT had used choral successfully and also quinine.

DR. BLAKE had been successful with the bromides and with belladonna, of which latter drug children are very tolerant. It was his custom to begin with drop doses of the fluid extract, and increase until the physiological effects were manifested.

DR. ROTCH said that the reason more cases are not benefited is because a routine treatment is followed and the cause of the incontinence is not definitely discovered. Here as elsewhere careful diagnosis as to cause is essential to successful treatment.

DR. J. P. REYNOLDS had observed a case of incontinence of faeces which continued several years: no cause could be ascertained and no treatment gave apparent benefit.

DR. F. B. HARRINGTON, a guest, said that when the cause of incontinence of urine is not mechanical, the belladonna treatment is very successful: he had given 30 minims three times a day to a child five years old, and had accomplished no curative result until that dose was gradually reached.

DR. CHADWICK had seen incontinence caused by masturbation in children two or three years old: he had used the bromides successfully in such cases.

DR. J. STEDMAN said a child should always be examined as to the state of the prepuce: when the prepuce was long, he had seen incontinence cured by circumcision. In other cases he had been most successful with belladonna pushed to its physiological effects: he thought bromides weakened children unduly.

DR. C. E. STEDMAN remarked that Dr. J. B. S. Jackson had pointed out that adhesion of the prepuce was a normal condition up to a certain age.

PULMONARY BLOOD-EMBOLISM (?) OR SHOCK FROM HÆMORRHAGE (?)

DR. C. ELLERY STEDMAN stated that he had received, in a personal letter from Dr. R. H. Fitz, the following opinion concerning the cause of the collapse after labor in the case reported by him at the meeting of October 8, 1887.²

"It seems to me after reading your remarks that the case was one of pulmonary embolism from blood-clot and not one of shock from previous hæmorrhage or exhaustion. Although there had been considerable hæmorrhage previous to your visit, the pulse was then but little affected. The pains were strong, delivery was prompt, and there was less loss of blood after delivery than usual. Although the pulse grew rapid during the half-hour after delivery there was no other evidence of disturbance: sudden weakness, dyspnoea, urgent demand for air, lividity, rapid and irregular

² Vide Boston Medical and Surgical Journal, December 8, 1887, page 555.

pulse were the symptoms of the attack, the intelligence being undiminished.

"Collapse from exhaustion or hæmorrhage is essentially a syncope with symptoms of arterial, especially of cerebral, anæmia: faintness, pallor, sunken features, sweating, sighing, slow breathing and restless movements are to be expected, and are of gradual approach except in sudden severe hæmorrhage. The classic symptoms of embolism of the pulmonary artery, on the contrary, are sudden, more or less intense dyspnoea, staring eyes, anxious expression, livid face, tumultuous action of the heart and feeble pulse. Symptoms of cerebral anæmia may occur later, but are not, as a rule, initiatory.

"The patient's condition favored a source of pulmonary embolism as it favored collapse from exhaustion or hæmorrhage; indeed there was no evidence of special exhaustion until the collapse occurred. Air-embolism seems less probable than blood-embolism, since the uterus was firmly contracted at the time of the shock."

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

EIGHTH-SECOND annual meeting, held at Albany, February 7th, 8th, and 9th.

FIRST DAY. — MORNING SESSION.

The President, A. L. LOOMIS, M.D., in the chair.

THE PRESIDENT'S INAUGURAL ADDRESS.

It contained a recommendation to the county medical societies to enforce the law against illegal practitioners, as had been done with such good results in New York. He thought the compromise bill regarding a board of medical examiners could now, if urged by united action on the part of the profession, be passed through the Legislature.

Regarding expert witnesses in medical matters, he thought questions propounded should not be formulated by lawyers ignorant of medical science, but by a court physician.

There was some disposition being manifest to establish county asylums for the insane. This was condemned by universal experience. He further recommended that a special committee be appointed to consider the advisability of placing quarantine in Government control.

He did not approve of the By-Law recently adopted looking toward the easy and rapid increase of membership of the Society, as it tended to increase the quantity at the expense of quality. The pharmacopœia was to be revised in 1890. This should not be left entirely to the deliberations of pharmacists, and he recommended appointing a special committee to consider aid in the labors from physicians.

He enumerated the losses by death during the year. The Committee on the President's Address consisted of Drs. Wey, Ford, and Daniel Lewis.

At the morning session, the Society was divided into a medical and a surgical section.

DR. KRETZSCHMAN, of Brooklyn, read a paper on

THE USE OF ALCOHOL IN CERTAIN FORMS OF FEVER.

Alcohol, he said, was a food, and also a medicine. It was the prince of antiseptics. It was especially useful in diphtheria. The dose and frequency of ad-

ministration should not be left to the judgment of patients or friends. Among other diseases, it was useful in phthisis with fever.

NECRO-THERAPEUTIC MEMORANDA.

DR. J. LEONARD CORNING, of New York, in this paper, described minutely the manner best to make medicinal injections, as solution of strychnia in tetanic spasms, in close proximity to the affected spinal cord, and cited some cases. Also treated of the benefits of the interrupted current in facial paralysis of rheumatic origin.

ON REFLEX NERVOUS DISTURBANCE.

DR. WILLIS E. FORD, of Rochester, referred to the contents of a former paper on a similar subject, which he had read at a previous meeting of the Society, and in this one spoke only of true reflexes, and not of conditions in which there was disease of the cord itself. His object was to show that the term reflex had been given too wide a range. He would no more speak of functional disease than of functional health. Any departure from health would get up a change in tissue sooner or later.

THE INFLUENCE OF OBESITY IN YOUNG WOMEN UPON THE MENSTRUAL AND REPRODUCTIVE FUNCTIONS.

DR. ANDREW F. CURRIER, of New York, read the paper. From personal observation and that of others, it was shown that obesity occurring in young women was usually attended by sterility. If the woman became pregnant, the offspring was likely to show inferior vitality. It was attended by disturbance of menstruation, the flow being absent or diminished in quantity and character; by pain, by vicarious menstruation, impairment of physical and mental powers, constipation, etc.

There was often a hereditary predisposition. Exciting causes were luxurious habits, inactive life, excessive sexual indulgence, use of too much fats, starches, and sugar.

Among other measures of treatment, he had been strongly impressed with the value of electricity, general and local.

DR. E. F. BRUSH, of Mount Vernon, read a paper on

BOVINE TUBERCULOSIS.

He commenced by remarking that after all discussions respecting tubercle, we are confronted with the question, "Is bacillary tuberculosis conveyed to the human race from animals affected with this disease?" He pointed out that of all domesticated animals the bovines were the most subject to tuberculosis, that indeed the human and the bovine races were preëminently tubercular. To no other animal do we owe so much for food and clothes as to the cow, and it would be strange if we did not acquire from her some malady. It is certain she did not acquire tuberculosis from us, for as Virchow points out, "Man is far more susceptible to animal disease than the latter to similar disease from man." The proportion of cattle infected with tuberculosis in England, is placed at five per cent., and increases, till in some of the thoroughbred Jersey herds of the Northern States, Prof. R. A. McLean declares that twenty per cent. are so affected. The reason why more human beings are not infected, is that the normal temperature in the human race is

so much lower than in the bovine, that the germ will not grow till the temperature is raised in the former to the degree naturally existing in the latter, namely 101° to 103° F. The same rule holds also in localized tubercular deposits where the temperature is raised by reason of injury to a degree permitting the growth of the bacillus. The cultivation of tuberculosis in other animals confirms this view, as the resistance to tuberculosis decreases in proportion as the natural temperature of the animal increases. Thus in the dog, with the lowest temperature, resistance is good, while in the common fowl with the highest temperature, resistance is nil.

The reader said further that the Federal Government had contributed half a million of dollars to stamp out pleuro-pneumonia which does not affect the human race, while tuberculosis, which decimates the human race, is left uncontrolled. He expressed the opinion that tuberculosis in man was derived from the bovine race, and pointed to the curious fact that where these animals are not domesticated, pulmonary phthisis is unknown. He said that if bovine tuberculosis were stamped out by means of laws regulating the breeding of the bovine race, it would soon become eliminated from the human race, and he was of the opinion that medical men should be instrumental in procuring the enactment of such laws.

DR. F. H. BOSWORTH, of New York, read a paper ON THE ACTION OF CAUSTIC APPLICATIONS ON THE NASAL MUCCOUS MEMBRANE.

The caustic when applied to a limited area, buttoned down the mucous membrane, checked the inflammatory process, relieved the parts of their hyperæmic state. He had thus suddenly checked a "cold in the head" and relieved the patient of headache and other symptoms. He preferred chromic acid because its action could be definitely limited.

In the Section on Surgery, DR. HERMAN KNAPP, of New York, read a paper on

EXTRACTION OF CATARACT WITHOUT IRIDECTOMY, and gave a short report of one hundred successive cases. The results were remarkable in the amounts of vision obtained. Only one eye was lost out of the series.

DR. F. N. OTIS demonstrated new urethral and bladder instruments.

NOTES ON THE TREATMENT OF LUPUS.

DR. H. G. PIFFARD read the paper, in which he reported successful results in the treatment of lupus by applications of a solution of hydro-naphthol in liquor gutta-percha, and also by the use of hydro-naphthol in rubber plaster.

THE SURGICAL TREATMENT OF LUPUS.

DR. P. A. MORROW, in this paper, showed the advantage of treatment of lupus by multiple scarification.

RESULTS OF MECHANICAL TREATMENT OF 1,000 CASES OF HERNIA IN PRIVATE PRACTICE.

DR. W. DEGAIRMO gave a synopsis of 1,000 cases of hernia treated by mechanical means with an average result in all classes, of one in four cured. By cure he meant no return of the hernia, although the patient had gone without a support for six months.

AFTERNOON SESSION.

DR. CLARENCE C. RICE, of New York, read a paper on

REMOVAL OF LARYNGEAL GROWTHS WITH O'DWYER'S SNARE, IN COMBINATION WITH INTUBATION OF THE LARYNX.

The author described in particular the operation in children in whom it was one of the most difficult in surgery. In cases in which it did not endanger life, he renders the pharynx insensitive by cocaine, and then administered chloroform. O'Dwyer's snare required less skill for the removal of laryngeal growths than did the forceps and ordinary wire snare, and should be chosen by general practitioners.

DISCUSSION ON ACUTE BRIGHT'S DISEASE. PATHOLOGY AND CLINICAL HISTORY.

DR. FRANCIS DELAFIELD opened the discussion with a paper bearing this title. Notwithstanding the great amount of literature on Bright's disease, the subject had remained in an unsatisfactory and confused state. This had been due partly to the difficulties which of necessity attended its study, but largely to former methods of investigation. The kidneys had been looked upon too much individually instead of in their relation to the rest of the body. There had also been too much disposition to think of their function and not enough of their structure. The author began anew the study of kidney diseases three years ago, with much greater satisfaction than he had ever done before. On the present occasion he confined his remarks to acute Bright's. The cases were divided into three classes, namely, (1) the exudative; (2) parenchymatous or cellular degeneration; (3) diffuse nephritis. No matter what names were used, he thought we could group all cases of acute Bright's disease into three classes: (1) That in which the principal share in the morbid process was taken by the bloodvessels, and in which the principal evidences of inflammation were the matters exuded from the bloodvessels. Such a disease varied as to its severity but was regularly only a temporary lesion. (2) One in which the principal share in the morbid process was taken by the renal epithelium, and in which the evidences of inflammation were certain changes in the epithelial cells. Such a nephritis was regularly secondary to blood-diseases, and did not give constitutional symptoms. (3) One in which the principal share in the morbid process was taken by the stroma, and in which the evidences of inflammation were the growth of connective tissue in the stroma, with the addition of the lesion of exudative nephritis. Such a lesion was uniformly permanent and progressive, and was attended by well-marked constitutional symptoms.

ACUTE BRIGHT'S DISEASE OF CHILDREN.

DR. A. JACOB in this paper showed that acute nephritis was common in children, and was often overlooked, especially in the beginning when it was not attended by marked symptoms. In addition to examinations of the urine the temperature should be frequently taken after infectious diseases. The temperature of the surface was unreliable as an indication, it should be taken by the rectum. The first symptom usually noticed was œdema. The majority of cases in children were due to poisons of an infectious character, especially of scarlet fever and diphtheria. Neph-

ritis as a complication of pneumonia, occurred oftener in adults than in children. Cardiac affections other than those of rheumatic origin might cause nephritis by embolism and retardation of the circulation. Certain medicines would cause it. Sudden exposure to cold temperature frequently caused a serious form of Bright's, the patients often dying in from three to five days, with more or less suppression of urine.

CHANGES IN THE EYE IN ACUTE BRIGHT'S.

DR. D. B. ST JOHN ROOSA discussed this subject. Nothing really new had been added to our knowledge of it since Graefe wrote many years ago. When amaurosis or amblyopia occurred, nothing abnormal could be discovered by the ophthalmoscope. Was the amaurosis caused by poisoning of the blood or by sudden filling up of the cranial cavity, was a question for the pathologists. In some cases the pupils reacted, not in all. Förster concluded from this that the nerve-cells were not affected beyond the corpora quadrigemina. The amaurosis was usually recovered from. It had no peculiar treatment.

ON THE CARDIAC CHANGES IN ACUTE BRIGHT'S.

DR. RICHARD VAN SANTVOORD said hypertrophy, dilatation and cardiac exhaustion might occur secondarily in the acute as well as in the chronic malady. He was unable to say which gave out, the heart muscles or the nervous mechanism, or whether it was both. Certain conditions seem to point to failure in nervous mechanism as the prominent cause. The danger signal was a pulse of high tension. The indications for treatment were to diminish the pulse tension on the one hand and to strengthen the heart on the other.

ACUTE BRIGHT'S IN THE PUERPERAL STATE.

DR. FORDYCE BARKER discussed this portion of the subject. He used the term albuminuria of pregnancy, as the term "Bright's" frightened patients. In his experience, structural lesion did not exist except in a small proportion of cases previous to pregnancy in albuminuria of pregnancy; but they were allied affections and might coexist. He thought there was a condition in the bloodvessels in these patients which predisposed to albuminuria, which he spoke of as a super-albuminous condition. Perhaps under certain conditions the excess of albumen, if not absorbed by the fetal system, was returned as waste material and was one source of irritation. In one class of pregnant women the nutritive system showed inability to meet the increased demands upon it and the women became anæmic and hydræmic, while in others the nutritive system was stimulated to an over-degree and the women became plethoric. The albuminuria in these two classes required different treatment, the one tonic and nutritive, the other methods to reduce the plethora.

The symptoms were well known, but he might say they often began before albumen appeared in the urine, there being gastric and cerebral disturbance, œdema, etc.

Pilocarpin in albuminuria of pregnancy was dangerous. Abortion certainly should not be induced in all cases, for albuminuria of pregnancy occurred in about one of twenty-five cases, while eclampsia for which abortion was usually brought on occurred in fewer than one in four hundred. The irritation which it caused might, in fact, induce convulsions in a case in which they would not otherwise have occurred. He

cited two cases in which he had employed nitro-glycerin, that agent having apparently been the means of averting threatening eclampsia. It was continued in doses of $\frac{1}{100}$ grain.

THE TREATMENT OF ACUTE BRIGHT'S.

DR. WILLIAM S. ELY discussed this subject. The dietetic treatment was often so beneficial as to remove the symptoms and even prevent a diagnosis, especially if it were aided by inducing liquid stools several times a day.

When possible, such a simple plan of treatment as would give rest to the kidneys by causing the skin and bowels to temporarily do their work was advised. Liquid food, especially milk, was indicated. He agreed with Dr. Barker regarding the value of preparations of iron. He impressed the importance of treating each case individually.

DR. BARKER referred to a paper by Dr. T. R. Pooley, in which that gentleman had spoken of amblyopia and amaurosis as conditions indicating induction of premature labor, which obstetricians had overlooked. Dr. Barker had some years ago written of such affections of the eyes in the albuminuria of pregnancy, but they certainly should not in themselves be regarded as demanding induction of premature labor.

DR. DELAFIELD closed the discussion. He could not endorse the remarks of Dr. Barker to the effect that albuminuria of pregnancy should not be classed as one of the forms of nephritis. Autopsies had shown lesions in the kidneys in such cases which placed them in one or other of the divisions he had made.

INTUBATION OF THE LARYNX OF AN ADULT: EXHIBITION OF NEW INSTRUMENTS.

DR. JOSEPH O'DWYER read the paper, and presented specimens and instruments. He had personally practised intubation of the larynx in adults in four cases, three of which he had already reported. The first patient had intubation performed fifty or sixty times to overcome syphilitic cicatricial bands. Two of the other cases were also those of stenosis, due to contracting cicatricial bands originating in syphilis. The fourth case was one of diphtheria in the adult. One patient passed out of sight, and wore the tube ten weeks before returning. She had been more comfortable during that period than for some time before. In none had any pulmonary trouble developed from the entrance of food into the larynx and bronchi.

DR. WILLIAM HAILES, of Albany, read

THE HISTORIES OF SIX CASES OF INTUBATION OF THE LARYNX.

(To be continued.)

—The *Lancet* says that a child six years old, suffering from miliary fever was treated first with quinine administered in pilules and by inunction, and then by a subcutaneous injection of the alkaloid. One month later the fever had disappeared, but the child complained of pains in the left arm and at the point of injection; trismus supervened in three days, tetanus developed, and death occurred on the sixth day. If this was really a case of traumatic tetanus, the period of incubation was rather longer than the usual seven to fourteen days.

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PROTECTION OF THE PURITY OF INLAND
WATERS.

THE special report of the Massachusetts Board of Health upon that part of their work which relates to the protection of the water-supplies of the State, appears in print as Senate document number four.

This duty of guarding the water-supplies of the State was placed in the hands of this Board by the General Court in 1886, and a generous appropriation of money was made by the Legislature in 1887. Thirty thousand dollars were given to the Board for the purpose of carrying out the provisions of the Act.

The present report gives an account of the work of the year 1887, divided into three sections.

First. Advice given to towns, corporations, and individuals in regard to appropriate sources of water-supply, the best way of preserving the purity of the same, and proper measures for the disposal of sewage.

Second. Collecting information in regard to all existing public water-supplies in the State, and arranging for such examination of these waters as may, from time to time, seem necessary.

Third. A review of the present state of our knowledge upon the subject of sewage disposal by irrigation upon land, or other means; and experiments for the purpose of adapting the results obtained in Europe to the conditions existing in Massachusetts, or of devising new methods more adapted to our surroundings.

The provisions of the Legislature, above referred to, are the first practical effort on the part of this State to secure the interests of the people, as a whole, against the limited interests of towns, corporations, or individuals. The Board's action upon the twenty-five applications for advice gives satisfactory evidence of the value of supervisory functions in the hands of a body removed from local influences.

The first application noted in the report is that of the city of Boston for advice in regard to taking the Shawheen River as an additional source of water-supply. In this case, the Board refused to advise the city to carry out the scheme for taking this river, and

gives its reasons at considerable length in a very complete study of the whole question of the water-supply of the metropolitan district for the next generation. While this JOURNAL has, on many occasions, called attention to the bad condition of the Mystic water system, and has had the support of the medical profession in so doing, we have recognized the force of the objections to the Shawheen River plan, and commend the thoroughness of the Board's examination of this very serious problem.

The Board appears to have committed itself to the recommendation of intermittent filtration as a plan for the treatment of the sewage of Brockton, and has offered the same advice to other towns and some public institutions.

Alewisse Brook, which the city of Cambridge, with the help of a hog-slaughtering establishment, has turned into a disgusting sewer, receives the following notice from the Board: "The public health requires that such an open sewer should not exist, and the means of relieving the public of this nuisance are a part of the problem of disposal of the Mystic River sewage which the Legislature has referred to this Board, and which is now being actively considered."

The plan for examining public water-supplies promises useful results. The chemical analyses, under Professor Drown's charge, are accompanied, so far as possible, by a study of the animal and vegetable life always present in surface water. Mr. Parker, S.B., Assistant in Zoology in Harvard University, and Dr. E. K. Dunham, have the direction of this portion of the investigation. As not quite six months have elapsed since work was fairly begun in this direction, the Board wisely abstains from entering upon a general discussion of the analysis already made. Many interesting facts are, however, stated, and some suggestions made, for which our readers are referred to the report.

Under the third head — the treatment of sewage — a very encouraging amount of original work appears to have been done, and the question of the disposal of sewage by intermittent irrigation on land bids fair, at last, to become the subject of a scientific examination of authority sufficient to replace the confident assertions of one side, and the equally positive denials of the other, with which the advocates of rival systems have tired the ears of a public for a generation.

One conclusion already arrived at is this: that desirable as the use of sewage in broad irrigation may be, yet this kind of irrigation cannot be depended upon in the more closely settled parts of the State; if irrigation is used in such localities, it must be used in the form of intermittent filtration.

A very complete experimental station has been established at Lawrence, where land owned by the Essex Company was placed at the disposal of the Board. Ten tanks of cedar have been constructed, with all the necessary apparatus for measuring fluids; each tank is five feet deep, and has a superficial area of the two-hundredth part of an acre. These tanks

are filled with various soils, which may be varied from time to time, so as to represent any given locality. In addition to these, a third of an acre has been properly prepared for the purpose of receiving sewage directly, and studying the effect. Sewage is conveyed to this station by pipes from the public sewers of the city. A small, but well-equipped chemical laboratory has also been provided, so that all the required analyses may be promptly made. A large part of the report, under this head, is taken up with an interesting series of observations upon the changes effected in the water of the Merrimac River while passing through the different soils in the tanks. These observations appear to bear strong testimony to the value of properly constructed filter-beds for the purification of water-supplies.

The Board, in conclusion, asks for an appropriation of \$25,000 to carry on this work; and it is a satisfaction to know that the proper Committee recommended the amount to the Legislature, which has already, we believe, passed the necessary appropriation bill.

The Board of Health has also sent to the Legislature a report of progress upon a matter of especial consequence to Boston and its vicinity, the definite plan for the drainage of the valley of the Mystic, and of so much of the Charles River as it may seem advisable to add thereto. This very brief report is a bare statement of progress made in the study of the subject, but, like the document noticed above, gives promise of results that shall have a foundation in actual experience. If the Board succeeds in presenting a plan that provides for a satisfactory disposal of the sewage in this important part of the metropolitan district, by means generally approved by experts, then the sum of \$14,000, which is required to complete the task of examination, will be no exorbitant price for the service rendered.

It will be remembered that Governor Ames, in this year's inaugural address, expressed himself very decidedly in favor of the investigations carried on by this Board in the directions above noticed, and with sound common sense concluded: "The fact that answers to these troublesome questions of water-supply and sewage-disposal can only be given by experts, makes it almost necessary that this advice should be furnished by the State under conditions of complete impartiality."

ANNUAL REPORT OF THE HARVARD MEDICAL SCHOOL, 1886-87.

FROM the report of President Eliot and of the Dean of the Medical School, as contained in the last annual report (1886-87) of the President and Treasurer of Harvard College, we take the following statements: The report of the Committee of nine, appointed by the President, to consider in all its relations the general subject of shortening the college course in favor of the professional schools—a point brought forward in the Academic Council last November—is

still under advisement by the Council. We hope some definite step may be taken at a not very remote date.

In this connection, it is well to note that the number of students in the fourth year class of the medical school has fallen back to about what it was in the first years of the experiment (1880-81-82-83); namely, 10, and the President calls attention to the following table, which, he says, "reveals some of the difficulties besetting the interesting experiment":

	1880-1.	'81-2.	'82-3.	'83-4.	'84-5.	'85-6.	'86-7.	'87-8.
4th Year Class	9	9	10	12	16	18	21	10
Applicants for the 4th Year degree	4	9	6	11	6	9	11	..
Of whom there were rejected	4	0	0	3	2	2	6	..
Of whom there received <i>cum laude</i>	0	5	2	2	2	1	5	..

In plain words, it appears in the first place that not one-half of those who take the fourth year course apply for the fourth year degree. Secondly, the percentage of rejection at the examinations for the fourth year degree is so large that prudent students may well prefer to take the third year degree at the regular time, rather than to run the risk of having to fall back upon it after failing to get the fourth year degree. During the past four years, the percentage of rejection for the fourth year degree has been 35 per cent., while the percentage of rejection for the third year degree has been only 16½ per cent. Thirdly, it is evident that there have been two sorts of students in the fourth year class: one sort, the most promising men in the school; the other sort, men who need four years of study in order to obtain the third year degree. The number of examinations which the student was expected to pass at the end of the fourth year has been unreasonably large.

The experiment as a whole is not yet successful; and such inferences as can safely be drawn from it do not encourage the hope that a fourth year of study can soon be demanded of all candidates for the degree of Doctor of Medicine, unless, indeed, the school shall receive a special endowment to enable it to take this costly step.

We are glad to note a definite statement to the effect that the school is very inadequately endowed, the natural inference from last year's report being rather the reverse. The Dental and Veterinary Schools are also sorely in need of endowments. In regard to the Medical School, the Dean says:

"With the increased development of its teaching facilities, the need of endowed professorships is every year more and more plainly felt, and it is to be hoped that before many years the school will be enabled through the generosity of its friends to arrange its curriculum without constant reference to the pecuniary returns derived from students' fees."

The whole number of students in attendance during the year was 282; during the first term, 273; during the second term, 264. Of these, 164 had literary or scientific degrees. There were 87 applicants for the degree of Doctor of Medicine in the three years' course, of whom 11 were rejected.

THE ROBINSON POISONING CASE.

THE case of Sarah J. Robinson, whose trial, for the murder of her brother-in-law by the administration of arsenic, took place last week in Cambridge, is, so far as we remember, without a parallel in the annals of toxicology in this country. The prisoner was indicted for the murder of seven persons: her landlord, husband, sister, brother-in-law, daughter, nephew, and son, in the order given.

The first of these deaths took place in August, 1881, the last in August, 1886. All died with the usual symptoms of arsenical poisoning. It is now said that there were suspicious facts connected with the deaths of all: but suspicion was not so far excited as to lead to an investigation till the sickness of the son, the last in the list of her alleged victims, which took place in August, 1886. At this time, the suspicions of the officers of the lodge in which the lives of the members of her family were insured were excited, and, as a consequence, the attending physician, who had already recognized the possibility of poisoning, procured an analysis of the vomitus, and the true nature of the sickness was soon disclosed. The prisoner was arrested August 11, 1886, the day preceding the death of her son. Arsenic was found in the body of the son. Then, one after another, the bodies of those mentioned were exhumed, and the organs submitted to analysis, with one uniform result: arsenic in all. It was discovered, in the course of the investigation, that some embalming fluid (the name of which could not be ascertained) had been injected into the body of the sister. Most of these fluids contain arsenic as one of their ingredients; and as it is well established that arsenic injected in this manner after death may find its way by diffusion into all the organs of the body, even the brain, it was manifestly impossible for the chemist to say that all the arsenic present might not have come from the embalming fluid. The sister died, however, with symptoms which were consistent with those of acute arsenical poisoning, and circumstances pointed to the prisoner as the author of the crime.

The prisoner was tried in December last for the murder of her son; but the jury disagreed, the understanding being that they stood 11 to 1 in favor of acquittal. The trial just concluded was upon the indictment charging her with the murder of her brother-in-law. Nothing of interest from a medical or toxicological point of view was brought out at this trial. The medical and chemical testimony showed conclusively that death was due to arsenical poisoning. The evidence against the prisoner was wholly circumstantial. It was not shown that she had bought arsenic, or that she ever had any in her possession, or that she knew anything about arsenic. The Government based their case upon her actions and words, and upon the fact, as they claimed, that she was the only person who had the opportunity to administer poison, or any motive in administering it. The alleged motive was to gain possession of an insurance

of \$2,000 on the life of her brother-in-law. Evidence was offered tending to show that the prisoner was in straitened circumstances, and obliged to borrow money at high rates of interest, mortgaging, for this purpose, the same property to two or three different persons under assumed names. The money thus borrowed was repaid immediately after her receipt of the insurance on her brother's life, and presumably from the proceeds of this insurance, which she had claimed, falsely, as it proved, to have invested for her nephew.

The defence did not deny the fact of arsenical poisoning, but claimed that the arsenic might have been administered by accident or that it might have been taken with suicidal intent. The jury, however, failed to coincide with either of these views, and returned a verdict of guilty in the first degree.

Mrs. Robinson has been found guilty on one indictment only. Assuming that she is guilty of all she has been charged with, her remarkable success as a poisoner cannot be attributed to any special skill on her part. She is a woman from the lower ranks and evidently illiterate. She employed the most common of poisons, and all the cases appear to have presented the symptoms usually observed in cases of arsenical poisoning. The alleged motive in at least four of the cases was an insurance of \$2,000 on the lives of the victims. Her success appears to be in part attributable to the failure of the attending physicians to recognize the true nature of the earlier cases; or, if the possible character of the sickness was recognized, as appears to have been the case in certain instances, a failure to pursue the one course which would doubtless have led to the true conclusion, namely, to procure an analysis of the vomitus or excretions. This much should be said, however, in this connection, that the cases occurred in two or three different cities and were under the care of different physicians, so that suspicion was not excited through any recollection of similar cases occurring in the same family. Her success was also doubtless favored by her remarkable ability to so conduct herself that no suspicion aside from those suggested by the symptoms, should be excited; an ability which all who witnessed her remarkable self-possession during the two trials which she has undergone, will probably concede to her. The case has naturally excited much interest in this vicinity and finds a parallel, in more recent times, only in such cases as those of Anna Zwanziger and Margaret Gottfried, which occurred on the continent of Europe in the earlier years of the present century.

In conclusion, we have to express our regret that poisoning by arsenic is rendered so easy in this Commonwealth by the fact that such preparations as "Rough on Rats," may be, and are, sold without any restrictions whatever.

—Salicylate of bismuth has been found by Solger to be effective in many rebellious cases of chronic diarrhœa. It is given in doses of eight to ten grains, three times a day, to a child of three years, and its effects are attributed to its antiseptic action.

MEDICAL NOTES.

—Tracheotomy was successfully performed upon the Crown Prince of Germany, at San Remo, February 9th.

—One of the handsomest of the new exchanges which has come to us is the *Chugai-Ijishimo*, a Japanese and foreign medical journal, which is published in Tokyo. Typographically and pictorially, it is an object of beauty, and if its scientific character equals its looks, which fact we are obliged to accept on faith, it is certainly a most useful aid to practitioners of medicine in that country.

—At the Sixteenth Congress of the Society of Surgery of Berlin, Sir Spencer Wells and Professor Billroth were elected honorary members, 142 members voting. The former received 137 votes, 14 voting for him only; the latter 123, one voting for him only.

—An English Rear Admiral recently committed suicide in a manner unique in the annals of medical jurisprudence. While in the drawing room with his wife after dinner, the lady was playing to him on the piano when he heated a thin brass poker to redness in the fire, and thrust it, so heated, into his abdomen, inflicting four wounds of which he died the same night.

—Mice are said to evince a clearness of discrimination in deciding between butter and oleomargarine, which it would be well in some cases if public examiners could attain. They will eat butter *con amore*, but they will not consume any of the cunningly prepared greases, it seems, except under protest.

BOSTON AND NEW ENGLAND.

—The month of January last presented the largest mortality of any January in the history of the city. The deaths were 1,043, against 836 in January 1887. Consumption caused 139 deaths, bronchitis 60 and pneumonia, 192. The deaths from pneumonia in January 1887, were but 95. Steady cold such as prevailed last month certainly has a very depressing effect on the vital forces. 33 deaths were returned as from old age.

—The thirteenth annual report of the Salem (Mass.) Hospital is issued, showing the number of patients admitted to the hospital during the past year to have been 247. Of these 105 were medical, and 142 surgical; 120 were males and 127 females. The average number of days passed in the hospital by free patients was 29.3-4, and by those paying board 23.1-4. Board was furnished to free patients 6013 days, and to those paying board 790 days. The Boston and Maine Railroad bed was occupied 170 days, the Naumkeag Mill's 46 days; and 62 days' board was furnished to United States Marine patients. The largest number of patients in the house at any one time was 30, the smallest 16. The average cost per day for each patient was \$1.40. The total income from investments, the payment of board, etc., was \$39,504, including a legacy of \$13,500. The ex-

penses including investments of nearly \$18,000, were \$33,000, leaving a cash balance in hand of \$6,600.

—The Merchants Club—a body of prominent Boston merchants who dine together once a week, and have the custom of inviting representative men of the different important professional and commercial interests to partake of their hospitality—entertained the medical profession last Thursday evening at a handsome banquet at the Parker House. After dinner, President Richard T. Briggs called to order, and the Secretary, Mr. B. F. Guild, of the Commercial Bulletin, read what might be called comic records of the preceding meeting, which sparkled with bright points; though perhaps not true records, they were certainly amusing.

The members of the club then listened with apparent interest and courteous attention to a statement of the present status of surgery and obstetrics as compared with former times, of the present condition of medical education as exemplified by the Harvard Medical School, of the past and present condition of the Massachusetts General Hospital and of the Boston Lying in Hospital and of the claims of these institutions upon the generous financial support of the merchants of Boston, as set forth by the medical speakers.

Dr. H. P. Bowditch spoke for medical education and the Harvard Medical School, Dr. D. W. Cheever for modern surgery, Dr. C. B. Porter for the General Hospital, Dr. W. L. Richardson for the Lying-in Hospital. Dr. F. W. Draper spoke of the relation of the profession to the public in the courts and in inquests, and the editor of the JOURNAL responded for the Medical Press. Speeches on general subjects were also made by Drs. H. W. Williams, G. H. Lyman, J. P. Reynolds and J. Collins Warren.

About one hundred gentlemen sat down at the tables, and the occasion was one of much enjoyment, as it is hoped it may prove of mutual profit. Among the medical men present besides those mentioned were Drs. E. N. Whittier, A. T. Cabot, M. H. Richardson, S. W. Langmaid, S. J. Mixter, O. B. Shreve, R. H. Fitz, J. W. Pratt and others.

Miscellany.

DESTRUCTIVE ACTION OF BOILING WATER ON TYPHOID BACILLI.

In order to test the destructive power of boiling water on typhoid bacilli, Dr. Vilchur, of St. Petersburg, according to the *Lancet*, made a number of pure cultures in broth, keeping them in a thermostat for two days at a temperature of about 33° C., and then mixed them with known proportions of boiling water, immediately afterwards sowing the mixtures in jelly. The results showed that, when the volume of boiling water equalled that of the culture, the bacilli were partially, but not wholly destroyed. When double the volume of boiling water was used, the bacilli were all killed. From experiments with typhoid stools, he found that all the bacilli, however numerous, were invariably destroyed by the addition of a volume of

boiling water equal to four times that of the stool. In this way, he suggests it will be easy to disinfect with certainty all the dejections of typhoid patients.

ILÆC OLIM MEMINISSE JUVABIT.

THE following extract is from the letter of a New York correspondent, a famous practitioner of many years' experience :

"What interesting letters those are from the pen of Brother Cotting! I have gone over so much the same ground — *haud passibus æquis* — that it seems to me I am reading my own experience. I never shall forget, years and years ago, how astonished Brown-Squard was when he read some trifles I had written for a non-viable medical journal, to show that pneumonia had, under certain conditions, a natural tendency to recovery, and how little 'heroic' treatment had to do, except in an undesirable way, in any case.

"Dr. Cotting's stories please me hugely. One of them recalled the following experience of my own : —

"In the early days of anæsthesia, I had quite a reputation as a giver of ether and chloroform. One day, a distinguished surgical friend asked me to give the anæsthetic for him to a great and rich General, whom he had promised to castrate for malignant disease of the testis.

"I kept my appointment, and found the instruments arranged in order, the operating table ready, and the warrior eager to have the ill-behaved gland removed. Out of courtesy, I was asked 'to look at it.' I happened to know the clinical history of the patient, and soon satisfied myself that syphilis had claimed him for her own in a constitutional manner, and that trenchant steel was not what he most needed.

"I so told my brother doctor, who, being a noble, conscientious man, made an excuse to defer the ablation, and completely cured him. In the course of time, my 'gentle reminder' found its way to the hero's hand. Looking at it for some minutes, he said : 'What a — outrage! That man just came to give me ether. It was found best by my surgeon to put off the operation, and Dr. M. didn't even give me the anæsthetic. He simply wasn't wanted, and went home. He must think I'm made of money, d—— him.'"

STONE IN THE STOMACH.

CONCRETIONS, or stones, are not often found in the human stomach, though the bezoar of the abomasum and intestines of ruminants is well known, and in olden days was very highly esteemed as a remedy against poisons and infectious diseases, being even worn as a charm. Human intestinal agglomerates are occasionally found in oatmeal-eating districts, and have sometimes been dignified by the name of "avenoliths." An enterolith was found by Laugier in a human subject, the nucleus of which was formed by a piece of liquorice root. True gastro-liths are, however, occasionally found in human stomachs; thus Schönborn was able to collect seven such cases, all of which appeared to have formed round a nucleus of hair; one of these weighed two kilogrammes. Quite

recently a Dutch physician, Dr. H. A. Kooyker, has described a case of a true gastric concretion weighing 885 grammes, in which there was no nucleus at all. The patient was a middle-aged man, who was so averse to examination and manipulation of all kinds that it was very difficult to form a diagnosis of his disease. He occasionally vomited blood, and gradually became more and more emaciated. A tumor was felt in the epigastrium, but its nature was not made out until the post-mortem examination revealed a stone measuring eighteen by eight centimetres, nearly filling the cavity of the stomach. There was also a smaller stone situated at the pyloric extremity. These stones were of a brownish color, and the large one contained several cavities. It had an offensive smell like that of faeces. A number of vegetable cells were found in it, but it was devoid of concentric or other structure. It does not seem to have been fully analysed. — *The Lancet*.

STRYCHNIA AS A HYPNOTIC.

DR. T. LAUDER BRUNTON in the *Practitioner* for January narrates his favorable experience with this drug. After alluding to the unfortunate results of the use of opium and chloral for inducing sleep, he says :

"In treating some cases of persons engaged in literary work who were suffering from sleeplessness and yet were obliged to have their brains perfectly clear during the day, it occurred to me that if I could convert the condition of over-tiredness into a condition of simple tiredness, the patient would naturally fall sound asleep without the use of any hypnotic. One can sometimes do this to a certain extent by giving some warm beef-tea or a teaspoonful of Valentine's meat juice in water either hot or cold, or by giving a little alcoholic stimulant, such as whiskey and water or brandy and water. It is probable that these substances have a double action, tending to dilate the vessels of the stomach and withdrawing blood from the head, as well as tending to exert what we may vaguely term a stimulant action on the nervous tissues themselves, without understanding what the exact nature of this stimulant action is. It occurred to me that as strychnine is one of the most powerful stimulants, if not the most powerful nervous stimulant that we possess, a small dose of it might have the effect of bringing the depressed nervous system up from the condition of over-fatigue to that of simple fatigue, and thus inducing sleep. I accordingly tried it, and was much pleased with the result. It acted exactly in the manner that I expected, and induced comfortable healthy sleep without any disagreeable effects next day. The way in which I have used it has generally been either in the form of the tincture of nuxvomica in doses of 5 to 10 minims or in the form of Schieffelin's granules, containing $\frac{1}{100}$ of a grain of sulphate of strychnine in each. One, two, or more of these granules were given at bedtime, and the dose was repeated if the patient happened to awake within one or two hours afterwards."

The author thinks it is very doubtful indeed whether strychnine would answer in other cases of sleeplessness than those arising from overwork or worry, and more especially from overwork. He has tried it, however in a case of sleeplessness occurring in anæmia, but as the patient at her next visit complained that

the medicine made her sleep rather too heavily, he is not quite sure how far mere suggestion may have played a part in effecting the result, and indeed admits that he cannot exclude this factor in some of the other cases, a factor which needs to be remembered as possibly operative in all experiments with new remedies.

"ABOUT THE SIZE OF A —."

AN "English physician who reads and values American periodical medical literature" writes to the *Philadelphia Medical Times* an entertaining, and at the same time, most apposite protest against the loose way in which physicians on both sides of the water describe the size of pathological objects. It is a point upon which this JOURNAL has already touched editorially, but it will bear repetition. The writer says:

"Such time-honored comparisons as a 'fœtal head' (I thought they varied a great deal) or 'a millet-seed' (I never saw a millet-seed, but I believe it to be about as big as a miliary tubercle), we cannot hope to get rid of before the millennium. But when it is a mere matter of length or breadth, could we not state the fact in inches or millimeters? I am moved to write to you by having been just now brought up by the statement that something or other was 'about the size of a dollar.' I was interested in this case up to that point, but I got lost then; the

only dollar I ever saw was a tiny gold coin, 'about the size of a three-penny bit'; I beg pardon, about fifteen millimeters in diameter. From the context, I think that the article mentioned must have been bigger than that, but I am not sure, and the statement bewilders me and destroys my interest in the case. Another time, I came across the statement that a tumor was 'about the size of a doughnut.' Now, as to a doughnut my mind is blank; is it a nut that grows on a tree—a coconut, or a walnut, or a hazelnut? or is it the other half—'dough' suggests it is a kind of cake—a 'bath-bun,' or a 'tea-cake,' or perchance, a cake 'about the size of a piece of chalk?' as the witness said in the famous trial.

"It is bad enough, Sirs, to have to learn two or three languages in order to keep ahead of the progress of medical science. Why should we, who speak the same language, throw these entirely unnecessary obstacles in each other's way? I hope you will lend your powerful influence to induce our American cousins to give their measurements in terms of some scale which can be mutually understood."

The writer adds in a postscript:

"P. S.—Since writing the above, a lady has told me that a 'doughnut' is a kind of bun about the size of an orange, brown outside, jam inside, very good to eat, and 'they cost three half-pence.' Upon this I wish to ask: (1) Tangerine or Seville orange? (2) Is she right? (3) Granting 1 and 2, is this a satisfactory way of arriving at a pathological fact?"

REPORTED MORTALITY FOR THE WEEK ENDING FEBRUARY 4, 1888.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diph. & Croup.	Diarrhœal Diseases.	Scarlet Fever.
New York	1,481,920	831	322	15.96	22.32	7.92	.84	3.24
Philadelphia	993,801	458	127	10.78	13.20	3.52	1.98	.66
Brooklyn	745,108	—	—	—	—	—	—	—
Chicago	725,000	—	—	—	—	—	—	—
St. Louis	420,000	—	—	—	—	—	—	—
Baltimore	417,000	186	61	14.04	15.12	2.16	1.08	1.08
Boston	400,000	209	85	8.16	23.12	5.28	.96	.96
New Orleans	242,750	118	27	15.30	18.70	5.95	5.95	.85
Buffalo	225,000	—	—	—	—	—	—	—
District of Columbia	210,000	107	38	8.37	6.51	—	.83	—
Pittsburgh	210,000	63	30	14.13	15.70	3.14	1.57	3.14
Montreal	186,257	—	—	—	—	—	—	—
Milwaukee	170,000	66	36	18.24	13.68	—	3.04	—
Providence	121,000	—	—	—	—	—	—	—
Richmond	100,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,000	17	3	11.76	11.76	—	4.76	—
Charleston	60,145	37	10	13.50	5.40	5.40	5.40	—
Portland	40,000	5	3	—	20.00	—	—	—
Worcester	63,583	20	6	20.00	20.00	15.00	—	—
Lowell	64,051	38	15	21.04	18.41	7.89	7.89	—
Cambridge	59,660	25	8	8.00	20.00	8.00	—	—
Fall River	56,863	26	11	11.55	15.40	3.85	—	3.85
Lynn	45,861	16	3	6.25	6.25	6.25	—	—
Lawrence	38,825	17	4	14.28	23.60	—	—	—
Springfield	37,577	17	4	14.28	—	9.52	—	—
New Bedford	33,393	8	2	—	—	—	—	—
Somerville	29,992	10	3	30.00	10.00	—	—	20.00
Salem	28,084	14	4	14.28	14.28	14.28	—	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	21	—	23.80	9.62	—	—	23.80
Taunton	23,674	9	3	11.11	33.33	—	11.11	—
Haverhill	21,736	4	4	6.66	15	6.66	—	—
Gloucester	21,713	11	1	9.09	18.18	9.09	—	—
Brocton	20,783	10	2	10.00	20.00	10.00	—	—
Newton	19,759	3	1	—	—	—	—	—
Malden	16,407	4	1	—	25.00	—	—	—
Fitchburg	15,375	5	4	—	60.00	—	—	—
Waltham	14,649	7	2	28.56	14.28	14.28	—	—
Newburyport	13,716	—	—	—	—	—	—	—
Northampton	12,896	—	—	—	—	—	—	—

Deaths reported 2,383; under five years of age 820; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 320, acute lung diseases 420, consumption 327, diphtheria and croup 128, scarlet fever 45, diarrhoeal diseases 36, typhoid fever 29, measles 25, whooping-cough 16, peripneumonia 15, erysipelas nine, malarial fever nine, cerebro-spinal meningitis eight. From typhoid fever, Philadelphia 14, Baltimore four, Lawrence three, New York and Milwaukee two each, New Orleans, Nashville, Charleston and Lowell one each. From measles New York nine, Baltimore seven, District of Columbia five, Milwaukee two, Boston and Pittsburgh one each. From whooping-cough, New York, Baltimore and Pittsburgh three each, Philadelphia two, Boston, Lowell, Springfield, Somerville and Waltham one each. From peripneumonia, Milwaukee five, New York four, District of Columbia three, Philadelphia, Baltimore and New Orleans one each. From erysipelas, New York seven, Philadelphia two. From malarial fever, New York five, Philadelphia two, Baltimore and New Orleans one each. From cerebro-spinal meningitis, New York three, Baltimore two, Milwaukee, Worcester and Fall River one each.

In 20 cities and greater towns of Massachusetts with an estimated population of 1,041,166, the total death-rate for the week was 23.15 against 25.16 and 23.87 for the previous two weeks.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending January 21st, the death-rate was 23.0. Deaths reported 4,145; infants under one year of age 847; acute diseases of the respiratory organs (London) 591, whooping-cough 193, scarlet fever 85, measles 56, fevers 50, diphtheria 36, diarrhoea 29, small-pox (Sheffield 25, Bristol three, Nottingham two) 30.

The death-rates ranged from 17.0 in Brighton to 28.8 in Portsmouth; Birmingham 21.0; Bradford 19.5; Hull 18.1; Leeds 19.2; Leicester 19.2; Liverpool 21.6; London 24.4; Manchester 26.8; Nottingham 25.3; Sheffield 25.0; Sunderland 20.2

In Edinburgh 23.8; Glasgow 23.3; Dublin 32.9.

The meteorological record for the week ending February 4, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole, of the United States Signal Corps:—

Week ending Saturday, Feb. 4, 1888.	Barom- eter.	Thermometer.			Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.		
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration Hrs. & Min.	Amount in Inches.
Sunday, . . . 29	29.95	3.0	12.0	6.0	77.6	70.0	75.0	74.0	W.	N. W.	W.	11	24	9	C.	C.	F.		
Monday, . . . 30	29.95	22.0	29.0	2.0	78.9	67.0	87.0	72.0	W.	N.	W.	6	12	8	O.	C.	O.		
Tuesday, . . . 31	30.03	24.0	29.0	18.0	82.0	78.9	79.0	80.0	N.	N.	N.	5	14	7	C.	F.	C.		
Wednesday, . . . 1	30.18	21.0	29.0	12.0	74.0	56.9	67.0	66.0	N.	N.	N. W.	10	9	11	C.	C.	C.		
Thursday, . . . 2	30.22	26.0	33.0	17.0	74.0	34.0	65.0	57.0	W.	N. W.	W.	12	20	7	C.	C.	C.		
Friday, . . . 3	30.23	29.0	38.0	23.0	72.0	60.0	70.0	67.0	W.	N. W.	N.	12	18	9	C.	C.	C.		
Saturday, . . . 4	30.12	28.0	36.0	15.0	75.0	95.0	100.0	90.0	N.	S. E.	S. E.	8	8	2	O.	N.	R.	10	.25
Mean, the Week.	30.097	21.7	29.0	12.0				73.0										10	.25

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 4, 1888, TO FEBRUARY 10, 1888.

JANEWAY, JNO. H., major and surgeon.

HOPKINS, WM. E., captain and assistant surgeon.

Detailed as members of the Army Retiring Board in San Francisco, Cal., convened by S. O. 168, A. G. O., July 22, 1886. S. O. 28, A. G. O., February 4, 1888.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE WEEK ENDING FEBRUARY 4, 1888.

CARMICHAEL, D. A., passed assistant surgeon. Detailed as attending surgeon and acting chief clerk, supervising surgeon-general's office. February 2, 1888.

IRVING, F. M., passed assistant surgeon. Granted leave of absence for twenty days, on account of sickness. February 3, 1888.

WILLIAMS, L. L., assistant surgeon. Ordered to examination for promotion. February 2, 1888.

APPOINTMENT.

Dr. E. M. Buckingham has been appointed Assistant Physician to the Boston Children's Hospital and placed in full charge of the Medical Out-patients with two assistants, Drs. Sherman and Townsend.

BOOKS AND PAMPHLETS RECEIVED.

The Treatment of Intermittent Fever. By Robert C. Kenner, A.M., M.D. Reprint. Louisville, 1888.

Nineteenth Annual Report of the Children's Hospital, Huntington Avenue, near West Chester Park. From December 28, 1886, to December 28, 1887.

The Bones of the Leg Considered as One Apparatus. By Thomas Dwight, M.D., Parkman Professor of Anatomy at Harvard University. Reprint. Boston: Cupples & Hurd. 1888.

The Nature of Contagion. By J. W. McLaughlin, M.D., Austin, Texas. Reprint.

A Year in California and a Contest with her Quacks. By A. O'Leary, M.D.

The Refraction of the Eye: A Manual for Students. By Gustavus Hartridge, F.R.C.S., Consulting Ophthalmic Surgeon to St. Bartholomew's Hospital, Chatham, etc. With 36 illustrations. Third edition. Philadelphia: P. Blakiston, Son & Co. 1888.

Bits of Knowledge taken from Alden's Manifold Cyclopaedia. Contents: Bavaria, Bear, Beaver, Beech, Bed, Beer, etc. N. Y., J. B. Alden, publisher.

Massachusetts Institute of Technology. President's Report, December 14, 1887. Boston, 1888.

Report of the Mortality and Vital Statistics of the United States, as Returned at the Tenth Census (June 1, 1880). By John S. Billings, Surgeon United States Army. Part II. Washington: Government Printing Office. 1888.

Plates and Diagrams accompanying Part II of Report on Mortality and Vital Statistics.

Contributions to the Study of the Heart and Lungs. By Jas. R. Leaning, M.D., Emeritus Professor of Diseases of the Chest and Physical Diagnosis in the New York Polytechnic, etc. New York: E. B. Treat. 1887.

Original Articles.

ON THE DANGERS OF SIMPLE EXTRACTION OF CATARACT.

BY BASKET DERRY, M.D.

THE question as to what operation should be performed in an ordinary case of senile cataract is once more a prominent subject of discussion. At the late meeting at Heidelberg, as well as at the one held at New London, this matter engrossed much attention. More recently, Professor Schweigger, of Berlin, has published in Knapp's "Archives" an article on the return to the flap operation, in which the performance of iridectomy, the "needless maiming of the iris," as the author expresses it, is strongly denounced.¹

Up to within a very few years, there has been but one form of extraction practically in vogue, the operation of Graefe, modified from the method originally laid down by the master by the departure from a linear cut, and the formation of a flap of appreciable height, but following his teaching in the routine removal of a portion of the iris previous to bringing about the expulsion of the lens. This is the only operation concerning which extended statistics have been published since the flap operation became obsolete; the methods of Liebreich and Lebrun having never met with general favor. They were supported by no reliable or extended tables of results, and the healing process after their performance was found to be attended, in many instances, with disagreeable complications.

One great drawback to the former flap method was the danger of corneal suppurative. Graefe's operation was much less liable to this complication; but besides this, two minor, though serious evils were largely obviated. The removal of a segment of the iris not only lessened the danger of prolapse, but, by exposing a large pupillary area, enabled the operator to ascertain the presence of, and generally to remove the fragments of cortical substance often left behind by the lens in its passage through the external wound. Other advantages of the new operation were the greater freedom of motion allowed the patient during convalescence, and the shortened period of after-treatment.

The almost universal abandonment of the corneal flap without iridectomy for the method of Graefe, first brought forward twenty-three years ago, was influenced not only by the above advantages, but also by the improved statistics. Those given by Graefe himself in 1868 were as follows:

After Flap Extraction (1,600 cases): ²		
Complete success	80 per cent.	
Partial success	12 to 15 per cent.	
Failure	5 to 8 "	
After the New Method (600 cases): ³		
Complete success	90.4 per cent.	
Half success	6.8 "	
Failure	2.8 "	

Dr. Knapp has just given us his own results in 1,000 cases operated on according to the method of Graefe:⁴

Good Results	85.4 per cent.
Moderate results	6.3 "
Failure	6.3 "

¹ Archives of Ophthalmology, Vol. XVI, p. 455.² Klinische Monatsblätter, 1868, p. 14.³ Klinische Monatsblätter, 1868, p. 17, note.⁴ Trans. Am. Ophth. Soc., Vol. IV, p. 422.

The statistics of simple extraction, the operation now proposed as the standard, are as yet limited. Schweigger reports 62 cases, no table of results being given.⁵ Knapp has operated 68 times, with 2 total failures, protrusion of the iris in 3 cases, incarceration in 2.⁶ Bull gives 24 cases of hard, senile cataract thus treated. These were all successful, although prolapse of vitreous occurred three times, the lens having to be removed instrumentally, and a secondary operation was necessary in 7.⁷ With such a paucity of observations, it is evident that any objections to the new method must be somewhat based on theoretical considerations.

As has been said, the two principal dangers after flap extraction were corneal suppurative and prolapse of the iris. The former of these would be lessened by a diminution in the height (and thereby extent) of the flap, and the employment of antiseptics; the second by the use of eserine, and the substitution of cocaine for the administration of ether or chloroform, at once avoiding the pain of the operation, and the dangerous strain on the eye incident to retching and vomiting. The question at present under discussion is, therefore, the following: Do the modern discoveries of a reliable myotic, of an efficient local anæsthetic, and the adoption of antiseptics, justify a return to the principle of extracting senile cataract without the performance of iridectomy?

At the New London meeting, Dr. Knapp expressed himself as follows: "On the whole, I may say this, that the so-called simple method of extraction seems to me as safe as that with iridectomy."⁸

I have been enabled to collect the notes of 48 cases of simple extraction performed in Boston within the last three years, all but three of them at the Eye Infirmary, and nearly all having occurred in the practice of two surgeons of that institution, both of whom had had a large experience in the Graefe operation. Of these 48 cases:

Central, movable pupil was left behind	31 times.
Pupil remained drawn slightly upward	5 "
Hernia of the iris occurred	12 "
Vision of one-tenth and more was gained in	40 cases.
Moderate success	5 "
Perception of light remained in	2 "
Still under treatment	1 "

These figures, it is true, cover but a small number of cases, and, as far as they go, compare most unfavorably with any that have as yet come under my notice. It is but right, however, to publish them as a definite record of experience. Doubtless a greater familiarity with the operation of simple extraction will diminish the percentage of accident. It will be observed that there was no case of absolute failure, as the patients who left the Infirmary with perception of light may subsequently be restored to sight by the performance of an iridectomy. My object is not to decry the operation performed, but to call attention to the main difficulties experienced in the performance and encountered in the after-treatment.

One familiar with the method of extraction, according to Graefe, need meet with no special difficulty in the performance of the preliminary steps of simple extraction. Using the narrow knife, the correct completion of the cut, without wounding the iris, demands, of course, a quick eye and a steady hand.

⁵ Loc. cit., p. 453.⁶ Loc. cit., p. 419.⁷ Trans. Am. Ophth. Soc., Vol. IV, p. 418 (table following).⁸ Loc. cit., p. 420.

With appropriate manipulation, the lens is made to readily emerge. But unless the crystalline has escaped entire, the removal of *debris* from the field of the pupil is certainly much more difficult than when an iridectomy has been performed. Professor Becker called attention to this fact in his remarks at the Heidelberg meeting, and laid stress on the increased facility with which the pupil might be examined and cleared over the region where an iridectomy had been performed.⁹

To this it may be replied that, by restricting the performance of simple extraction to cases in which the cataract is mature, the nucleus large, and but a small amount of soft cortical substance probably present, the danger of leaving portions of the lens behind is reduced to a minimum.

Such cases are, however, equally liable with others to the second danger that attends simple extraction, that of prolapse of the iris. This accident occurred twelve times with us out of 48 cases, an unusually large percentage, it is true, when compared with the results elsewhere published. And in speaking of the danger of prolapse of the iris, I do not refer to what may take place at the time of the operation. In most instances, after the cataract has been removed, the iris can be replaced, and the usual direct application of eserine made. Should the prolapse at this time persist in recurring, it is easy to excise it on the spot. The serious forms of this accident are those in which it occurs some time after the operation, without apparent cause, and without giving rise to any symptom of its presence.

Two such experiences are here given. Simple extraction had been performed on a female, aged forty-nine; the lens had emerged in its capsule, leaving a clear, black pupil, and the iris had gone back perfectly into place. Eserine was instilled, and the eye banded. On the fourth day, without any apparent cause, sudden and severe pain came on in the eye, and a large prolapse of the iris was found to have taken place. This was subsequently excised and a vision of five-tenths obtained, though at the cost of a somewhat tedious convalescence. The other patient was a woman of sixty-five, from whose eye a large, mature cataract had been removed without iridectomy, a clear pupil being left, and the iris resuming its natural position. As usual, eserine was instilled. The patient was perfectly quiet and docile, made no violent movement, experienced no subsequent pain, and had no swelling of the lids; and yet the removal of the bandage on the seventh day disclosed a large prolapse. In this, as in the other case, excision of the iris had to be performed, and the recovery was tedious. Both would probably have done better had the operation of Graefe been performed.

I call attention to these cases, and cite these dangers in order to show that simple extraction does not always prove, in the hands of others, the same simple and safe operation that recent eminent authority has claimed it to be; and that the recommendation of Professor Schweigger that it supersede the operation of Graefe is not, in the present state of our experience, to be unreservedly accepted.

May not the operation, however, be restricted to certain cases, and are not certain special rules to govern the after-treatment? The writer has laid down the following principles for his own guidance:

(1) He would reserve simple extraction for those cases in which the cataract is ripe, the nucleus large, the patient tranquil and amenable to discipline.

(2) After the operation, the application of the bandage should be slightly delayed, the object being to ascertain whether the iris, once replaced, shows any tendency to again prolapse. If it does so, it is to be at once excised.

(3) Eserine is to be applied directly to the eye immediately after the operation, and dropped in the inner corner of the eye, without separating the lids (as recommended by Schweigger) for the three following days.

(4) Greater quiet on the part of the patient is to be insisted on than has been the case after the operation of Graefe.

(5) The eye needs to be inspected much sooner, certainly by the end of the third day.

And even if these or similar rules be followed, I cannot resist the belief that for the average surgeon, and in the present state of our knowledge, simple extraction at the best involves an element of danger that is wanting in the method of Graefe. The successful extraction without iridectomy is unquestionably the more brilliant of the two methods, and the patient thus cured a more striking exemplification of surgical skill. A greater familiarity with the new operation may cause the risk to assume inconsiderable proportions. But some risk is likely to always remain. It is like the old question as to the relative advantages of ether and chloroform: the latter easier to transport, pleasanter to take, quicker in its effect, and occasionally, alarming in its consequences.

A CASE OF ACUTE DIFFUSE NEPHRITIS; URÆMIC CONVULSIONS; RECOVERY.¹

BY HAMILTON OSGOOD, M.D.

On the 4th of January, 1887, I was called at 11 P. M. to a young lady (aged twenty-five, single, heretofore in excellent health), whom I found in constantly recurring epileptiform convulsions, the seizures reappearing nearly every twenty minutes.

I learned that the patient had been slightly ailing for a few days, during which she had been in the hands of a homœopath, then present. The only symptom of moment had been a moderate œdema, chiefly of the face, and which had entirely disappeared before I was called. This symptom the attending physician had pronounced a combination of erysipelas and muscular rheumatism, and had not at any time examined the patient's urine.

At 12.30, noon, of the day on which I was called, the convulsions appeared suddenly, without warning, and up to the hour of my visit no form of relief had been attempted. Invaluable time had been lost, and the case had reached a condition of great danger. Shortly after my arrival the homœopath was dismissed.

To recapitulate: On January 4, 1887, a female, aged twenty-five, unmarried, heretofore in good health, was suddenly seized by convulsions of extremely violent character, recurring nearly every twenty minutes, and having existed *eleven* hours before I was called, nothing having been done to arrest them. The pulse was uncountable; heart in tumultuous

¹Read before the Boston Society for Medical Improvement, Monday Evening, January 23, 1888.

⁹ Kt. Monatsblätter, 1887, Beilageheft, p. 105.

action and threatened with paralysis; respirations irregular, temperature 104°; face livid; tongue and lips badly bitten and swelled; anuria nearly absolute; skin dry and rough. During the intervals between the convulsions the patient was totally insensible, and coma was imminent. The eyes were brilliant and staring, the head turned incessantly and with great rapidity from side to side with a spasmodic movement, and there were decided indications of nausea.

These symptoms, together with a history of œdema, now disappeared, made probable the diagnosis of acute nephritis with uræmic intoxication. The only symptoms preceding the convulsions had been the œdema six days, and a headache twelve hours previously. So far as could be learned by a subsequent careful search into the history of the case, the only causes had been great physical exhaustion and exposure to a current of cold air in a very warm chapel at a Christmas festival, followed by a moderate chill. The small amount of urine which was voided was passed involuntarily. I at once, however, was able with my catheter to obtain about half an ounce. An immediate test converted it into an almost solid, gelatinous mass.

The nurse was now directed to sponge the patient with hot vinegar (for it did not seem wise to put her into a hot bath), and then wrap her, nude, closely in a hot blanket, and cover with as many other blankets as were at hand. Ether was then administered. At the first inhalation, the patient was seized with the most violent convulsion which she had yet experienced. After its cessation ether was again applied, with success. Two light convulsions followed, the last and final one occurring at 1:30 A. M., on the 5th. The anæsthetic was administered three times.

By this time sweating had become very profuse, and was continued three hours. One-eighth of a grain of elaterium was then given, and repeated every two hours until eight pills had been taken. The impossibility of making the patient swallow was overcome by causing the fresh pills, as they were given, to adhere to the teeth. Thus they were not ejected, but, dissolving quickly, were swallowed, and soon created abundant watery dejections.

So soon as the patient would swallow automatically, the administration of a strong infusion of juniper berries containing one ounce of potassic bitartrate to the quart was begun, two pints being taken during the following twenty-four hours.

January 5th. After the unruly night just described the patient was still unconscious. Temperature nearly normal; pulse irregular, but in the vicinity of 100; urine strongly acid, very albuminous; specific gravity, 1036. The microscope revealed white and red blood-corpuscles, the latter largely predominating; abundance of renal epithelium, round cells, hyaline and granular tube-casts, etc. Treatment continued, patient being kept in a state of mild transpiration.

January 6th. During the previous night patient had been very restless, but without convulsive attacks. She was now sensible, but bewildered, and for a fortnight afterwards could not recall the week preceding my first visit, nor could she remember that a homœopathic had been in attendance. Urine had increased to six ounces in the twenty-four hours, the albumen rapidly lessening in amount. The infusion of juniper and potash was continued. The heart still being over-active, the tincture of digitalis was ordered in doses

of ten drops every six hours. Elaterium was renewed for the second and last time in doses of one-twelfth of a grain every two hours, twelve pills being taken with satisfactory results. Diet liquid, principally milk; the juice of one orange in twenty-four hours.

January 7th. Patient brighter. Mind clear as to present events. Pulse 96 to 102, and this count remained unchanged until the 13th. Temperature normal. Quantity of urine had increased to twenty-four ounces in the twenty-four hours. Amount of albumen decidedly diminished. Patient sleeping more quietly. Continued the infusion, and increased the tincture of digitalis to twelve drops, four times daily. Ordered Apollinaris water as a beverage. Added various meat-broths to the diet.

January 8th to 10th. The same general history of steady improvement. Albumen disappearing and urine increasing in daily quantity. Temperature, normal. Began the administration of one teaspoonful daily of comp. licorice powder which secured two loose dejections.

January 11th. One week after the cessation of convulsions. A comfortable day; treatment unchanged.

January 12th. Albumen only a trace. Pulse in the nineties. Temperature normal.

January 13th. Patient seems well. Specific gravity of urine 1024. Quantity between twenty-four and thirty-two ounces. Albumen, a cloudy trace.

January 14th, 15th. Steady improvement. Pulse 88, respiration 18, temperature normal. Urine forty ounces. Specific gravity 1018. Slight trace of albumen. Omitted the digitalis, and lessened quantity of licorice powder.

January 16th. Pulse 84, temperature normal. Tongue clean but intensely red. Circulation sluggish. Some pain in calves of legs. Bowels, three dejections. Specific gravity of urine 1014. Quantity forty ounces. Albumen, a cloudy trace by Heller's first method. Sponging with hot vinegar had been continued twice daily. Renewed the digitalis.

January 17th. Pulse 84, temperature normal, respiration 18. Tongue clean and less red. Specific gravity of urine 1010. Quantity in twenty-four hours fifty-six ounces. Not a trace of albumen either by Heller's first method or by picric acid. Bowels, three dejections.

January 18th. Specific gravity of urine 1010. Quantity fifty-four ounces. No albumen. Reduced the quantity of infusion, one pint of which had thus far been taken daily.

January 20th. Specific gravity of urine 1018. Quantity thirty-two ounces. No casts, blood-corpuscles, nor albumen.

January 21st. Tenderness on pressure over abdomen. Ordered spice poultice; stopped licorice powder for one day. Specific gravity of urine 1014. Quantity thirty-two ounces. No albumen.

January 22nd, 23d. Abdominal tenderness gone. Patient exchanged bed for easy-chair for first time. Further details are unnecessary. With the exception of the merest trace of albumen, the symptoms of nephritis actually disappeared seven days after my first visit, following which, careful examinations of the urine made during the next four weeks, and semi-monthly during the succeeding month revealed no trace of albumen nor of any other sign of renal disturbance. Since that time the patient has avoided

undue fatigue, has faithfully protected herself from chill, and to-day is in excellent health.

Acute nephritis is not a rare disease and is especially apt to appear in epidemics of scarlet fever and diphtheria, particularly in children. According to Eichhorst,² Rosenstein,³ Strümpell,⁴ Bartels,⁵ Tanner,⁶ Da Costa,⁷ Vogel⁸ and other writers, climatic changes, over-indulgence in alcohol, chill, heavy falls upon the back, poisonous effects of acrid diuretics, of carbolic and salicylic acids, potassic chlorate, mineral acids, may all cause acute nephritis. It follows infectious diseases and not infrequently appears in connection with syphilis, pulmonary consumption and malaria. It is a sequel of affections of the blood and is caused and favored by cardiac ailments. It sometimes appears as a very serious complication of pregnancy.

Traube⁹ reports a case in which it appeared as a complication of pleuro-pneumonia. According to Bartels¹⁰ the cause of its most dangerous form is undoubtedly scarlatina. Frequently the cause is completely obscure.

Of somewhat curious interest is the multiplicity of names which have been applied to this disease. Freichs called it: "The first stage of Bright's disease." Unusual abundance of white corpuscles in the urine led certain writers to describe the affection as "catarrhal nephritis." Other authors, notably Niemeyer,¹¹ because of the quantity of fibrous cylinders in the urine of some of their cases, applied the name "croupous nephritis." Johnson, of England, was the first to use the expression "desquamative nephritis," as best fitted because of the numerous epithelial cells cast off by the urinary tubules. "Epithelioid nephritis" has been the resource of other writers. "Acute tubal nephritis" is a term applied by Dickinson. Traube is responsible for the name of "hemorrhagic nephritis," for obvious reasons which naturally do not hold good in every case.

Strümpell¹² mentions a variety of this disease which he considers rather characteristic and which has been described by Klebs, Friedländer and Ribbert, under the name of "glomerulo-nephritis," and in which the renal changes are found chiefly in the glomeruli, the same condition being denoted by Traube¹³ as "capsulitis." Bartels¹⁴ prefers "acute parenchymatous nephritis," which, as Eichhorst¹⁵ remarks, does not answer, because the renal anatomical changes by no means confine themselves to the epithelial investiture of the tubules, and he adds, wisely it seems to me, that since nearly all the various terms applied to this disease are descriptive merely of irregular and almost accidental results of the inflammation, the name which best expresses the general pathological condition of the kidney in this affection is, "acute diffuse nephritis," all other terms being subordinate.

PATHOLOGY.

The effect upon the kidney of this form of nephritis is not less varied than the nomenclature. Sometimes the renal organs are found macroscopically perfectly intact, far-reaching anatomical changes being discov-

erable only by means of the microscope. When the kidneys are visibly changed in structure they generally assume one of two forms, namely, that of the acute inflammatory hyperemic kidney or that of the acute inflammatory white kidney. In the one the organ is usually much enlarged, even to double its normal size. The capsule is tensely stretched, springs back under the knife, and probably releases oedematous fluid. The surface of the kidney should be much congested and clearly show distended venous stars. The cut surface still better exhibits the hyperæmia. The cortex has a bluish or very dark red color, making a good background for distinctly visible malpighian tufts, which, as red points, make their surface uneven to the finger or to the eye by refracted light. The medullary substance is still more intensely injected. Almost constantly there are minute hemorrhagic spots which are especially confined to the cortex. In consistence this species of kidney is friable.

The white kidney, the other form frequently created by this disease, is also enlarged, but differs from the other variety in being yellowish-white in hue, the cut surface of the cortex having an especially cloudy look. Fatty degeneration is indicated by yellowish spots and stripes. Scattered hemorrhagic flecks are generally observed on the exterior as well as upon the cut surface of the organ, though they sometimes are wholly absent. Writers on renal disease think this probably secondary to the more active hyperemic condition. Eichhorst,¹⁶ however, says he has found the white kidney in very acute cases and quotes one, fatal in eight days, in which Klebs found the white kidney; but Eichhorst admits that stages intermediary to the hyperemic and the white kidney sometimes exist.

The urinary tract may show evidences of inflammation. Oedema of the skin and fluid in the serous cavities are frequently found; dilatation and hypertrophy of the heart have lately been observed by Friedländer after scarlet fever; by Leyden after typhoid fever, both being complicated by acute nephritis, and by Eichhorst in a case of so-called rheumatic nephritis.

Various writers hotly dispute the indications of microscopic evidence in the affection in question. Some declaring the malpighian corpuscles to be the seat of origin of the disease; others that the epithelium of the cortical tubules is first affected; still others, that interstitial inflammatory changes are the cause.

The malpighian corpuscles are said to be particularly obnoxious to scarlet fever. The epithelium of the cortical tubules, it is claimed, are the common centre of inflammation following diphtheria. In many cases circulatory changes create, very early in the disease, a disturbance in and finally fatty degeneration of, the epithelium of the loops of Henle thus giving warrant to Bartels¹⁷ term of acute parenchymatous nephritis.

The various names given to this disease are thus explained.

The bloodvessels are frequently found in a changed condition, either widened by hyperæmia or compressed by oedema, and evidence of hemorrhage is common in the interstitial tissue, partly in the urinary tubules, and even in the corpuscles of malpighi.

The epithelium cells may show a cloudy swelling after infectious diseases, fatty degeneration following acute infection and poisoning by phosphorus. Ne-

¹ Handb. der Spec. Path. u. Therapie.

² Nierenkrankheiten.

³ Spec. Path. u. Therapie.

⁴ Ziemssen's Cyclopæd., Vol. XV.

⁵ Practice of Medicine.

⁶ Med. Diagnosis.

⁷ Virchow's Handbuch der Path. u. Therapie, B. 6, II. Abth.

⁸ Gesammelte Beiträge.

⁹ Loc. cit.

¹⁰ Lehrbuch der Spec. Path. u. Ther.

¹¹ Loc. cit.

¹² Loc. cit.

crisis is a sequel of toxic irritation. Countless hyaline and granular, perhaps blood casts, are found in both straight and looped tubules of the kidney; likewise cellular exudation, white and red blood corpuscles, blood pigment, necrotic and fatty epithelial cells, etc. These evidences are of great value especially in those cases in which the microscopic testimony is at fault.

This rude outline of the pathological changes in this affection is all that seems admissible in the hasty report of a single case with the exception of the farther statement of Axel Key, in connection with cases which end in recovery, that under increasing fatty degeneration of the epithelial cells, also to a certain extent in the same process in the round cells of the interstitial stroma, resorption occurs, necrotic and fatty cells are carried away by the urinary current and regeneration of the epithelium is effected by emigrated white blood corpuscles, according to Strümpell, from the epithelial cells which still remain.

Of the symptoms of acute nephritis enough has already been said to make it seem needless to add other details.

DIAGNOSIS.

The diagnosis of acute nephritis in average cases is not difficult. The cause is a helpful assistance, but the quality of the urine is generally characteristic, being more or less bloody, of high specific gravity, very acid, small in quantity, containing much albumen, the sediment being rich in blood corpuscles, cylinders, in a variety of tubal epithelium, etc.

Traumatic hæmorrhage of the kidney would be made apparent by the history and the small amount of albumen in the urine.

Embolic hæmorrhage would be explained by suddenness of onset, pain, chill and vomiting, together with a concurrent valvular lesion of the heart.

Venous hyperæmia of the kidney is excluded by the great predominance of the characteristics of the urine already cited and by the fact that hyperæmia is usually associated with lesions of the heart or respiratory organs.

It is often difficult to decide between an idiopathic acute nephritis and an acute exacerbation in chronic nephritis. The course here would be the attempt to discover whether symptoms of a renal affection have existed long before the present attack. In some cases it would be useful to leave the diagnosis open in order to give time for acute symptoms, especially hæmaturia, to cease.

After making the diagnosis of acute nephritis certain, Eichhorst¹⁴ lays great emphasis on the necessity of discovering the cause, since upon it the treatment to be adopted may depend, as for example, in syphilis or malaria.¹⁵

PROGNOSIS.

The prognosis in many cases naturally depends not only upon the degree of the renal affection, but also upon its primary cause.

Bartels¹⁶ says that in complete suppression of the urine the prognosis is absolutely bad, he never having seen such a case recover. Eichhorst¹⁶ asserts that an especially unfavorable prognosis is to be pro-

nounced when the quantity of urine is small and uræmic symptoms appear.

Vogel¹⁷ expresses the opinion that the appearance of uræmic symptoms is serious and often quickly cause death. Tanner¹⁷ thinks the prognosis may be favorable, the chief points to be feared being the occurrence of uræmia and diminution of the urine. Traube¹⁷ reports a fatal case in which death occurred during coma, no convulsions having appeared; and makes the interesting *post-mortem* statement that oedema of the brain, as in this case, may exist without convulsions. Da Costa¹⁷ states that uræmic intoxication is invariably followed by death unless the urinary secretion be freely re-established. Flint¹⁸ says that coma and convulsions denote imminent and great danger to life, but that recovery sometimes occurs notwithstanding these effects of uræmia.

Strümpell¹⁹ thinks the prognosis in many cases, in addition to the renal affection itself, depends, first, much upon the primary cause, especially if this be another disease; second, upon the uræmia, especially in the severe convulsive form with high temperature and concurrent paralysis of the heart; and third, upon the inflammation of internal organs in which secondary pneumonia is not a rare cause of death, while secondary pericarditis and peritonitis are observed only in isolated cases.

Eight to fourteen days is the average duration of the disease after which time appears recovery, death or chronic nephritis.

Of treatment, it seems necessary to say only that the course or one similar to that which was successful in the case in question, would probably answer in all cases in which there were no coincident ailments, especially syphilis, malaria or poisoning. These would suggest their own specifics.²⁰

ON THE USE OF LANOLIN AND BORACIC ACID IN CERTAIN DISEASES OF THE SKIN IN CHILDREN.¹

BY RUSSELL STURGIS, M.D.

I wish, this evening, to call attention to the use of an agent with which I have been much pleased, and hope that I can induce those who have more opportunities of treating the skin than I to give it a more extended trial. I have used lanolin (with which agnine, manufactured by T. Metcalf, plus fifty per cent. water is said to be identical), in the Children's Room at the Boston Dispensary during last winter and this. Those cases in which I have found it of use are facial eczema and eczema of the head, eczema squamosum, eczema rubrum and intertrigo, the mild form of seborrhœa often seen on the temples and about the chin, and lastly, chronic urticaria.

In eczema of the face and head, where there is on the face a more or less raw surface from scratching, with papules, vesicles, and pustules, and, on the head, a similar condition of things existing under a dry, dirty, yellow crust; I first direct that the head and face shall be cleaned of the crust in the usual

¹ Read before the Boston Society for Medical Improvement, January 23, 1888.

¹⁴ Loc. cit.

¹⁵ *Prac. of Med.*

¹⁶ Loc. cit.

²⁰ The writer purposely refrained from the use, in the case reported, of pilocarpine, because of already existing nausea which he did not care to take the risk of increasing in a case of such gravity.

¹⁴ Loc. cit.

¹⁵ In an attempt to decide between acute and chronic nephritis hypertrophy of the left cardiac ventricle, as suggested by Dr. F. C. Shattuck during the discussion upon this paper, would be useful as signifying the probable existence of the chronic form of nephritis.

¹⁶ *Lehrbuch der Spec. Path. u. Ther.*

way. Should the exposed surface be weeping copiously, I prescribe boracic acid in very fine powder, to be dusted on for the first forty-eight hours, night and morning, and not to be washed off.

The first effect of the acid is generally to increase considerably the serous flow, but, after twenty-four hours, to diminish it. After forty-eight hours I direct that the boracic acid, as much as may be left mixed with the dried serum, shall be washed off with warm water. The surface is now seen to be less inflamed, and not discharging as much as when the crusts were first washed away. I now direct that the boracic acid shall be applied night and morning, washing off each time the acid applied the time before. As soon as the skin is in condition to bear an ointment, I use one of boracic acid, $\mathfrak{z}\text{ii}$, to lanolin, $\mathfrak{z}\text{i}$, by which the acid is kept in contact with the skin better than if used in powder.

Boracic acid alone or with lanolin acts in a very satisfactory manner in alleviating the intense itching of eczema: much less restraint being necessary to prevent the child from damaging the skin by scratching. In cases where the eczematous patch is so situated that it is not rubbed by the bed-clothing, as on the vertex and anterior aspect of the cheeks, I prefer to use no covering, because there is not so much danger of tearing away the crusts that may form and become adherent to such covering. Agnine, being rather stiff, constitutes a covering itself which is not easily removed. When the patch is on the neck or about the ears, I use absorbent cotton kept in place by a bandage or cap. Unruptured vesicles and pustules near the margin of a patch I slit myself, reducing them to the same condition as the unprotected skin in the centre of the patch.

In eczema of the face, after most of the redness and evidence of acute inflammation have subsided, I treat the induration which is left by daily inunction, morning and night, with pure agnine. My directions are to rub on enough to give the skin a brown color; then rub this in till the surface scarcely feels greasy, and until the brown color is replaced by light yellow, or has disappeared. If the rubbing is as vigorous as directed, the induration soon disappears. I do not know whether the lanolin is the beneficial factor, or whether it is the massage with lanolin as the emollient.

In cases of eczema squamosum in which there is considerable induration, with scaly surface, accompanied by cracks or not, I first clean off the scales with plenty of hard rubbing with sweet oil, and washing with castile soap. If one scrubbing is not enough to clean the patch, I keep on till it is clean. Then, night and morning, I direct brisk, hard rubbing with an ointment of 5-15 grains of salicylic acid to the ounce of lanolin, according to the degree of induration. This treatment will, I think, restore the skin to its normal condition in less time, and with less discomfort to the child than the more painful application of oil of cade and the stronger alkalies. The advantage is, that when lanolin is used I have not been compelled to use this harsher treatment. I have not been obliged to use any stronger irritant than fifteen grains of salicylic acid to the ounce to get the effect that I wanted. My impression is that this is due to the fact that probably an irritant is brought into closer contact with the deeper layers of the skin by the means of lanolin, than if it were applied more to the surface, without lanolin being used. In this con-

nection, it may be mentioned that in infants and young children, with their delicate skins, induration and scaling probably yield to much milder remedies than the tough, old cases in adults, in which strong irritants are called for.

In cases similar in appearance to eczema squamosum, but which are really seborrhœa, which I have mentioned before as common on the faces of children, where there is no induration, and little or no change in color of the surface, an ointment of five grains of salicylic acid to the ounce of lanolin, used night and morning, is enough to remove the scales. After the disappearance of the scales, I use lanolin alone once a week or oftener to keep the skin in good condition, as such scaly patches are prone to return, particularly in winter.

In chronic urticaria, I am inclined to think that we have in lanolin a reliable application to alleviate the itching, which is usually so difficult to control. I have had the opportunity of using it in three cases only. In a case which I hoped to show here to-night, the urticaria had lasted for three weeks before the child came to my room, on January 7th. I directed the mother to use lanolin on the right side only, leaving the back and left side alone. I gave no internal treatment, as the general health of the girl was perfect, nor could I learn of any article of food that was likely to cause the trouble in her case. I saw her again on the 11th. Her mother reported that since the application of lanolin there had been no itching of the side treated, the other side had itched as much as before, particularly in the evening, and welts made their appearance, as usual. I directed the ointment used as before, on the right side only, which now was much improved in appearance. On January 14th all signs of scratching had disappeared from the right side, and the left looked better and felt somewhat greasy. I taxed the mother with using the ointment on the left side: she denied it. January 18th, I saw the child only; she reported all the itching, back and front, to have gone, and owned up to using the lanolin otherwise than as directed. I had hoped to be able to show this case with symptoms of urticaria on one side, with a well-marked line of demarcation between the sound and affected side.

In regard to the antiseptic properties of lanolin, Dr. Goutstein, in an article which appeared in the *Berliner Klinische Wochenschrift*, November 28, 1887, and which is reviewed in the *British Medical Journal* of December 24, 1887, states that lanolin is absolutely inimical to the growth of micro-organisms, of whatever kind they may be. In this connection, it may be mentioned that Liebreich has shown that cholesteroline fats, which are chemically the same as lanolin, are a normal constituent of the epidermis in man and the lower animals, thus constituting the most powerful protection against infection from without. In the employment of lanolin, therefore, we are using not only a superior emollient, but also are saturating the skin with a substance upon and in which it is impossible for micro-organisms to exist.

I had occasion to use boracic acid first some three years ago, in a case of often recurring eczema behind the ears, which had resisted most successfully other modes of treatment. The case did so nicely that I have since used it whenever I have had occasion to treat eczema rubrum and intertrigo in children. I direct that the pure, finely-powdered acid shall be

dusted over the parts night and morning, and, when about the genitals, whenever the napkins are changed. Each night and morning, the acid previously applied should be removed before more is put on. Since employing this treatment I have had no occasion to use zinc and starch powder or zinc ointment, which I used before as routine treatment. When now their use is indicated I use pure boracic acid, or boracic acid with lanolin.

In regard to internal treatment, I am guided wholly by the general condition of the case, regarding the skin disease in eczema as entirely local. In conclusion, I would say that I have found, in general, boracic acid of value where there is much serous oozing; boracic acid and lanolin where there is less; lanolin alone where there is moderate scaling and induration, and in urticaria; salicylic acid and lanolin where there is considerable scaling and induration.

REPORT ON OBSTETRICS.

BY CHARLES M. GREEN, M.D.

THE CONTRACTIONS OF THE UTERUS THROUGHOUT PREGNANCY, AND THEIR VALUE IN THE DIAGNOSIS OF PREGNANCY, BOTH NORMAL AND COMPLICATED.

BRAXTON HICKS (London) contributed a paper on this subject to the Obstetric Section of the recent International Congress in Washington. In the fifteen years since he had first directed attention to this phenomenon, the diagnostic value of these contractions had been amply demonstrated. He pointed out that before the fourth month the contractions could not be detected without bimanual palpation, but after that time they could be appreciated by external palpation alone. The deductions¹ from his paper were:

"1. That the uterus contracted at intervals of from five to twenty minutes during the whole of pregnancy, remaining contracted for from three to five minutes.

"2. The uterus is firm when contracted, and the fœtus cannot be distinctly felt, though when the uterus is soft the fœtus is easily mapped out.

"3. By noticing the contractions we are often enabled to diagnose normal pregnancy from other conditions.

"4. The contractions have the physiological use of emptying the uterine veins of the carbonized blood.

"5. The carbonized blood probably excites the contractions."

POSTURAL TREATMENT IN DYSTOCIA FROM SHORT OR COILED FUNI.

KING² (Washington) again calls attention to the postural treatment of dystocia due to short funis, whether the cord is absolutely shortened or simply coiled round the fetal neck, the conditions being the same in either case. He was led to suggest this method of treatment by noticing in three cases of this condition "a persistent desire on the part of the patient to assume a sitting posture." Of course with the patient on her side the fœtus must in a certain degree be forced by the uterine contractions *upwards*, the fundus lying on a lower plane than the pelvic

outlet, and at the same time the parturient canal is to some extent lengthened with the patient in a latero-prone position. On the other hand, with the patient in a sitting, squatting or kneeling posture, gravity forces the uterus and its contents deep into the pelvis and shortens to some extent the parturient canal, and thereby in many cases (without extreme shortening of the cord) a sufficient space is gained to enable the head to be born, or to come low enough to admit of the easy reaching and cutting of the cord if it cannot be uncoiled. The suggested method is a reasonable one, and worthy of remembrance and trial.

THE VALUE OF THE GENU-PECTORAL POSITION IN DIFFICULT VERSION.

CUTTS³ (Washington) recalls attention to the value of the knee-chest posture in certain cases of version, this position having been originally suggested by Deventer, recommended by Snellie, and among Americans by Bard, Shippen and Maxson, the latter showing its advantages in cephalic version. Of course the object of the position is chiefly to take advantage of the force of gravity to assist in the disengagement of the presenting part. As stated by Cutts, quoting largely from other writers, the advantages of the posture are:

"1. The downward pressure of the atmosphere upon the fundus uteri is, at least in part, equalized by the admission of air into the vagina.

"2. We have the force of gravity to aid us. The weight of the child naturally drags the presenting part from the os uteri and pelvic cavity, and by so much relieves the impaction.

"3. The abdominal cavity is elongated, putting the vagina upon the stretch, thereby giving it a cylindrical character, thus aiding to throw the head into line with the superior strait.

"4. The woman cannot, in this position, to any extent exert her voluntary muscles in bearing down.

"5. The uterus with its contents recedes from the spine and by force of gravity tends to relax the abdominal muscles and hence favors our manipulations.

"6. It is more than probable that in this position the uterus will be found physiologically to contract less violently and relax more readily than when the patient is on the back or side."

The great difficulty of this posture is in keeping the patient in position when she is etherized, and several assistants would always be necessary: for cephalic version, however, an anæsthetic might generally be dispensed with. If for any reason this posture is inadvisable, many of its advantages may be attained by a considerable elevation of the hips. [As suggested by Cutts and others, this expedient is worthy of trial in those cases of occipito-posterior position with the head above the superior strait, where engagement fails to take place owing to disproportion between the biparietal diameter and the sacro-iliac arch. In such cases, gravity, assisted perhaps by external manipulations, would often bring the fœtus to an anterior position.]

"NORMAL FORCES."

LAZAREWITCH⁴ (St. Petersburg) has devised a new forceps having parallel blades and without pelvic curve. The cephalic curve is less than usual, and is

¹ Amer. Jour. of Obstetrics, Oct. 1887, p. 1068.

² Jour. Amer. Med. Assn., Sept. 24, 1887.

³ Amer. Jour. Obstet., Nov. 1887.

⁴ Centralblatt für Gynäk., No. 28, 1887.

swept on a 20 cm. radius; when applied the forceps is locked by a sort of bolt passing through oval openings in the handles and fastened with a screw. The inventor claims as the advantages of these modifications,—greater ease of application and use, and a diminished risk of injury to the maternal soft parts and to the foetal head. The critic in the *Centralblatt* says that this instrument is only a modified reproduction of Chamberlen's original forceps, and therefore a step backward.

Professor Lazarewitch exhibited his forceps at the Washington Congress⁸ last September and described in detail the advantages he believed his instrument to possess. It is certainly courteous to abstain from adverse criticism until the forceps has been fairly tried, even though it may seem probable that the instrument is in no way superior to any straight forceps of equal length and strength. [It is a matter of local interest that Professor Lazarewitch presented the forceps he had exhibited in Washington to the Obstetrical Society of Boston, and that Society will doubtless hereafter publish by Committee the results of an extended trial of the instrument.]

DEVENTER'S METHOD OF DELIVERING THE AFTER-COMING HEAD.

BARTLETT (Chicago) has brought this old method to modern attention in a paper⁶ read at the recent Congress. Deventer's method, which was mentioned with approval by Smellie, differs radically from the Prague and Smellie-Veit methods, in that in the former the child's body is carried back against the perineum, so that the anterior surface of the neck rests against it, while the occiput is turned out from under the pubes. The arms are not to be drawn down, but left on each side of the head, thereby protecting the neck and funis from pressure. The method is only applicable to cases with occiput anterior, and backward traction is to be supplemented by supra-pubic pressure. [It would seem that by this method the perineum must inevitably be badly lacerated: it is stated, however, by those who have tried it that such is not the case. Certainly the method is worthy of careful trial.]

HYPNOTIC ANALGESIA DURING LABOR.

DUMONT-PALLIER⁷ hypnotized a young woman during labor whom he had already proved during her pregnancy to be an easy subject: he brought her into a condition of somnambulism. During this state she felt the uterine contractions, but suffered no painful sensations, so that after each awakening from her trance she begged to be again hypnotized. With increasing strength of pains, however, the uterine analgesia ceased, and finally it was no longer possible to bring her into the hypnotic state.

According to an observation of Pritzel (Vienna), women in labor, if brought into the hypnotized condition, are said to feel no pain even to the end of their labor: and the pains are said to decrease neither in force nor frequency.

THE VALUE OF COCAINE IN OBSTETRICS.

MR. JOHN PHILLIPS has published in the *Lancet* for November 26, 1887, an analysis of the more im-

portant contributions to this subject, and has considered the action of the drug under five heads:⁸

1. *The Vomiting of Pregnancy.*—Cocaine has been used for this affliction by many observers: the experience of WEISS and of BOIS has been previously noticed in these Reports,—the former giving the drug by mouth every half-hour in $\frac{1}{16}$ grain doses in solution, the latter using a two per cent. admixture with vaseline and placing a tampon smeared therewith against the cervix morning and evening. FRAIPONT has reported several successful cases, and has employed the drug by subcutaneous injection (20 minims of a four per cent. solution) into the epigastrium. ENGELMANN reports an obstinate case in which he was successful in two days, giving thrice daily by mouth ten minim doses of a ten per cent. solution. PHILLIPS has used the drug in two cases,—once with marked success: in his second case it was uncertain whether the cessation of vomiting could be fairly attributed to the use of cocaine.

2. *During the First Stage of Labor.*—Here it is reasonable that cocaine should alleviate the pain resulting from the stretching of the nerves of the cervix and from the more or less laceration of cervical tissue. DOLERIS and DEBOIS experimented with eight cases, with a favorable result in six: they painted the cervix through a speculum with a four per cent. solution of hydrochlorate of cocaine in glycerine. JAENNEL applied cotton tampons soaked in a five per cent. solution to the cervix and posterior cul-de-sac, and was successful in three out of five cases: he cautions against the use of corrosive sublimate douches after the application of cocaine, as he found that the sublimate rapidly decomposed the alkaloid. FISCHER was successful in three cases with a two per cent. solution applied to the cervix on a tampon; but in two other cases a similar application of a four per cent. solution gave a negative result. PHILLIPS disbelieves in the use of a speculum for several reasons and prefers to administer the drug by suppository: he was successful by this method in three out of four cases.

3. *During the Expulsive Stage of Labor.*—From the complex nature of the pain of this stage, any certain or marked relief by cocaine is out of the question. PHILLIPS tried the drug in six cases, either by inserting a saturated tampon (five per cent. solution), or by painting the vulva, with practically no amelioration of pain. FRANKEL concludes an elaborate paper on this subject as follows: "It is little probable that cocaine can be used as a local anæsthetic in labor, because anæsthesia and analgesia developed under this drug are essentially superficial, while the pains of labor are the result of distension and stretching of the tissues through their whole thickness."

4. *In Obstetric Operations.*—It has been suggested that cocaine may be useful in hyperæsthetic patients to anæsthetize the vulva prior to the introduction of a catheter for inducing premature labor, for the application of short forceps, for removing an adherent placenta, or for passing the catheter in a recently delivered patient. But while possibly of occasional value, it is obvious that the use of cocaine must have a very limited application.

5. *In sore nipples.*—In this condition cocaine has been frequently tried, but with doubtful results. HERCOTT used a four per cent. solution in nine cases

⁶ See Report in *Amer. Jour. Obstet., Oct., 1887.*

⁷ Abstract in *Amer. Jour. Obstet., Oct., 1887, p. 1082.*

⁸ Journal d'Accouch., 1887, No. 6.

Centralblatt für Gynäk., 1887, No. 13.

⁸ *Therapeutic Gazette, January 16, 1888.*

and found that the mother could then suckle without pain, that cauterization of the nipple with nitrate of silver was painless, and that the fissures rapidly healed. PHILLIPS tried a six per cent. solution in four cases, and was disappointed with the result: the anesthesia produced was more or less deep, but lasted only two minutes, and the fissures did not tend to heal more quickly. He found that infants did not hesitate to take the nipple after the application of the drug, and that they were not injuriously affected thereby.

The following conclusions may be drawn from Mr. Phillips's paper: "1. That cocaine in whatever way administered for uncontrollable pregnancy vomiting, is a valuable adjunct, and in some cases a superior drug to those at present in vogue. 2. That during the painful earlier stages of labor, especially in primiparae, it materially assuages the pains, but neither quickens them nor retards their onset, and hence has no effect on the actual dilatation. 3. That it is useless in mitigating the pains of expulsion, and those caused by pressure on the perineum. 4. That in the case of sore nipples it relieves the pain attendant on suckling, though the duration of its effects is not sufficiently long to be of material service. It is, however, without any apparent detrimental effect upon the suckling."

RUPTURE OF THE FUNIS FROM SUDDEN EXPULSION OF THE CHILD WITH THE MOTHER IN HORIZONTAL POSITION.

That the funis may tear, if the child is suddenly born with the mother in a standing or kneeling position, is a well-known fact; but that this accident could happen with the woman lying down would appear very doubtful. Such cases have been reported by Nargoll, Späth, and others, in which rupture occurred owing to undue shortness of the funis: but hitherto only two cases have been reported of rupture of a cord of normal length,—one by Späth (fetus macerated) and one by Dupuy. To these BODIN⁹ (Paris) adds two cases. In both cases (one a *ii-para*, one a *i-para*) the forcible and sudden expulsion of the child resulted in a rupture of the funis,—in one about 3 inches, in the other about 4 inches, from the naval of the child. In the case of the *ii-para* the torn cord bled freely from both ends; but in the other case the funic hemorrhage was very slight.

[Such cases are of great medico-legal importance, but we fear their citation may sometimes embarrass the administration of justice in certain cases of suspected infanticide, in which the plea in defence is: precipitate labor unattended, with rupture of the funis and consequent fetal death.]

Clinical Memorandum.

A CASE OF SARCOMA OF THE TONSIL REMOVED BY EXTERNAL INCISION. RECOVERY.

BY M. H. RICHARDSON, M.D.,
Surgeon to the Massachusetts General and Carney Hospitals, Assistant Professor of Anatomy, Harvard Medical School.

The following case presents several points of interest. The diagnosis was based upon the gross appearances and confirmed by the microscopic examination.

The tumor was removed by a dissection from the outside, and a complete and thus far permanent recovery followed.

Mrs. E. H., aged sixty, came from New Brunswick to the Massachusetts General Hospital, April 9, 1886. She said that she had noticed a swelling back of the angle of the jaw on the left side for two years. It was of slow growth except that it had seemed to increase rather more rapidly for a short time before coming to the Hospital. Externally there was only slight deformity, a small swelling being visible under the left ear. Internally the left tonsil was pushed with the pharynx quite to or beyond the middle line. The appearance of the mucous membrane of the pharynx was normal. The growth was indurated and could be felt under the edge of the jaw from the mastoid process half-way to the chin.

April 13, 1887, the tumor was removed by an incision three inches in length along the anterior border of the sterno-mastoid muscle. A careful dissection was made to get under the parotid behind which the new-growth was found encapsulated. The tumor was lobulated, and had finger-like projections running in various direction. It partly surrounded the styloid process and was attached to it, and from there extended inwards to the middle of the pharynx. It was covered in the throat by the mucous membrane alone. A large portion of the tumor was shelled out, and the rest removed by dissection. The portion projecting into the pharynx was thoroughly removed, leaving nothing but the mucous membrane of the pharynx between the fingers when one was in the pharynx and the other in the wound. The tumor was situated in the place of the left tonsil. It was impossible to say either from the location or the microscopic examination whether the growth started in the tonsil or directly adjacent to it. There was no tonsillar structure discovered by the microscopic examination, or at least none reported. In effect, however, it was a tumor occupying the tonsillar region and interfering with deglutition and respiration. The upward growth of the mass in and between the pterygoid plates, and its attachment to the base of the skull made its complete removal very difficult, and the probability of return very great. After the operation there was a very little venous oozing from the deep parts which was controlled by pressure. The wound was closed with silk and drained. Corrosive sublimate irrigation, and iodoform gauze dressings. During the evening the throat became swollen and ecchymosed on the left side, causing slight dyspnoea. The pressure on the outside was therefore removed. The next day the ecchymosis had extended to the frænum of the tongue and down on the neck. There was paralysis of the left lower lip.

Three days after operation she could eat and talk without trouble. Dressings changed to phenyle pad on account of slight suppuration along track of tube.

April 29th. Throat normal in appearance.

May 5th. Discharged.

November 23, 1887. A letter received from the husband states: "She got quite well in three weeks time, and has not felt any effects of it since, and her health is good." Microscopic examination of the tumor made at the Harvard Medical School was to the effect that it was a round-celled sarcoma.

This case is interesting from its rarity, and from the fact as yet, there is no sign of a return. I was of the

⁹Progrès Méd., 1887, No. 17. Centralblatt für Gynäk., 1887, No. 18.

opinion at the time that there would be a speedy reappearance of the disease, and wrote to the husband to ask the date of death, with the above reply. With regard to the feasibility of removing such growths from the tonsillar region it seems to me to be quite a practical operation if the dissection is carried on carefully and there is free respiration. The pharynx not having been opened made it much less difficult than it would have been otherwise.

The question of diagnosis is also interesting. If the tumor involved the tonsil throughout, I do not see how it could have been as thoroughly removed as it was without opening the pharynx. The mucous membrane over the tonsil is so thin that it does not seem possible that the whole gland could have been removed. Yet at the close of the operation there was so thin a partition between the wound and the pharynx that the mucous membrane covering tonsil was translucent.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

E. M. BUCKINGHAM, M.D., SECRETARY.

JANUARY 9, 1888, the President, Dr. O. F. WADSWORTH in the chair.

Dr. M. H. RICHARDSON read a paper entitled

CASES OF NERVE STRETCHING, NERVE SECTION AND NERVE SUTURE; AND OPERATION TO RELIEVE PRESSURE ON NERVE TRUNKS.¹

Dr. J. C. WARREN said that the subject of nerve section is interesting, because of the wide range that may be given to this mode of treatment. Operations for *tic* are very satisfactory. He referred to a case of trephining for the incision of the inferior dental, reported and illustrated by a picture in the first volume of the *Boston Medical and Surgical Journal* for 1828. He has twice done Wagner's operation on the infraorbital nerve, cutting down on the edge of the orbit, lifting the periosteum of the orbit with a periosteal elevator. With a small spoon bent at an angle, the whole contents of the orbit can be lifted up and the infraorbital canal exposed. The nerve can be separated easily from the artery, drawn out from the foramen and divided from the terminal branches. Laugenbeck used to cut this nerve subcutaneously on the cadaver. Dr. Warren had operated about eighteen months ago, upon the infraorbital (?). The only return of trouble had been some pain at the angle of the jaw, not enough to give serious discomfort. In this case union was by first intention. For stretching the spinal accessory he recommends an incision through the steno-mastoid near its posterior border, rather than Dr. Richardson's incisions.

He had seen one tumor in connection with the musculo-spinal nerve; it had been easily removed, with a good result. He had stretched the nerve for sciatica with good result. It is done easily and without any hemorrhage, through a free incision, and the wound heals readily. He would, however, hesitate to do this in an old subject with chronic sciatica, notwithstanding that old people do well after operation on the face. Nerve-suture has not been looked upon with

favor until lately, but it is now considered a valuable operation.

Dr. G. L. WALTON thought that nerve-stretching will not have such a future as other nerve operations, such as section, removal of tumors, etc. Stretching when done for spasm, has sometimes not relieved it, and has sometimes caused troublesome paralysis. He had seen four cases of sciatic nerve-stretching in Leipzig, done for relief of the gait in locomotor ataxia. This seemed to him a more unreasonable undertaking than stretching on account of pain. Could pain be relieved the speaker thought the result would justify the operation, but the outlook was not promising.

Operations for the removal of cicatrices in which nerves are involved are important. He had seen three within a few months. One case was peculiar. An ice pick had been driven into the thigh and spasms resulted in the calf. This might be called reflex for want of a better name. As a rule, pain caused by a cicatrix is peripheral from the cicatrix. The speaker mentioned a case where a knife had been thrust into the wrist, over the median nerve, causing paralysis of the thumb. Pressure over the median nerve caused tingling in the area supplied by this nerve. Here he had used galvanism every day. Almost complete recovery followed in a few weeks. If, after waiting a month or six weeks, there should be no improvement he would then operate in such a case.

Dr. P. C. KNAPP said that he had been much interested in Dr. Richardson's cases, for they had given him much information in regard to the success and advantages of surgical treatment in a class of cases where medical treatment was often unavailing. He was also glad to hear Dr. Walton condemn nerve-stretching. He had seen it tried in only a few cases, but from the result of these cases and others reported he had felt very doubtful as to the benefits derived from it. Some years ago nerve-stretching was urged as of great benefit in *tabes dorsalis*, but now every neurologist, except Benedict, has abandoned it. He did not consider it a justifiable operation, not only from the lack of benefit derived from it, but from its injurious effects on the spinal cord. In animals whose sciatic nerves had been stretched with the same relative force as in nerve-stretching for therapeutic purposes, it had been found that the stretching produced vacuolization in the motor cells of the anterior cornua, and also more or less sclerosis of the posterior columns, a condition as serious often, as the one which the physician sought to relieve.

January 23, 1888. The President Dr. O. F. WADSWORTH in the chair.

Dr. RUSSELL STURGIS read a paper on

THE USE OF LANOLIN AND OF BORACIC ACID IN CERTAIN AFFECTIONS OF THE SKIN IN INFANTS AND IN YOUNG CHILDREN.²

Dr. J. C. WHITE asked if the reader had used pure lanolin, or had it been mixed with water.

Dr. STURGIS answered that it was supposed to be pure. If too stiff, from ten to fifteen per cent. of water had been added. The lanolin used had been furnished by the Dispensary.

Dr. WHITE asked if any comparative experiments had been made with lard, and remarked that it

¹ See Journal, No. 6, page 139.

² See page 193 of this number of the Journal.

would be interesting to treat the opposite sides of the same child, one with lard and one with lanolin, the other ingredients of the ointments being the same. In no other way could definite knowledge be got. He had used lanolin to some extent and had not seen any difference in the results as compared with vaseline or cold cream. It has an unpleasant odor, and is occasionally irritating. The experience of one or two of his friends has agreed with his own. He is willing to admit, because of statements made by Liebreich and others, that it penetrates deeper than some other fats, but it does not follow that it has a better effect on eczema. He had had no experience in the use of lanolin alone in the treatment of chronic indurated eczema. He had rarely used boracic acid alone, but had often used it with starch or in ointments, and agreed with the reader that it has value.

DR. STURGIS said, in reply to Dr. White, that in the forty-one cases reported, lanolin had been used during the time mentioned. During the same time lard had been used as an ointment basis in other cases, but had not proved in his hands as satisfactory as lanolin. He also draws attention to the fact that pure lanolin was of little use where there was considerable induration. In those cases it was combined with salicylic acid.

DR. B. F. DAVENPORT said that it is very possible that the varying satisfaction which wool grease has given to those who have just spoken concerning it, may be largely due to the different composition of the commercial varieties which have been dispensed by their druggists. As shown in last July number of the *Pharmaceutische Rundschau*, different samples bought in this city, have been found to contain from 1.25 to 22.12 per cent. of free fatty acids. The preparation of wool grease to which the name of lanolin was originally applied, was one into which a large percentage of water had been worked, just as is the case with the preparation popularly known as cold cream. Another preparation not containing any water is known as agnaine. The large percentage of cholesterine contained in wool grease allows of its taking up a larger proportion of water than any other known commercial form of grease. Samples bought in the city have been found to contain from 0 to 23.74 per cent. of water.

DR. WHITE said that the presence of water is often of material consequence. Experience shows that many skins bear an ointment better if water is mixed with the fat.

DR. HAMILTON OSGOOD read a paper on

A CASE OF ACUTE DIFFUSE NEPHRITIS WITH CONVULSIONS. RECOVERY.³

DR. MINOT said that an interesting feature of the case was its rarity, since acute nephritis was in a large proportion of cases secondary to other diseases, such as the essential fevers, diphtheria, etc., and to pregnancy. He spoke of the favorable effect of pilocarpine injected beneath the skin in alarming cases complicated with stupor, convulsions, and oedema of the lungs, and alluded to two cases in which its administration was quickly followed by the happiest results. One of these was that of a child, two years old, with scarlatina. The other patient was a woman in whom threatening symptoms appeared soon after delivery. In both cases the urine, which previously

contained a large amount of albumen, became normal in the course of a day or two, and the patients recovered perfectly.

DR. GEORGE B. SHATTUCK thought Dr. Osgood's case a very fortunate one, not merely as regards the recovery, but especially as regards its frank response to treatment, and the prompt and steady disappearance of symptoms without relapse or delay. When convulsions and coma present themselves in the course of a nephritis, an anæsthetic is an obvious means of immediate relief, especially if supplementary to the more radical action of some one or more of the rapid eliminative agents. Ether is probably the anæsthetic which would be almost invariably resorted to in this community, on account of its greater reputation for safety. On the other hand, chloroform was probably less irritating to the kidneys, and, in the abstract, better under the circumstances. With regard to the choice between pilocarpine, the hot-air bath, and rapid cathartics, the speaker thought it difficult to lay down positive rules. Individuals varied very greatly in their response to the first two of these agents certainly, and in a less degree to the third. Sometimes pilocarpine was ineffective for elimination, and objectionally active as a depressant, when the hot air-bath was not so, and *vice versa*. There need not ordinarily be any great difficulty about giving the hot air-bath; the wet pack could, of course, always be applied. Digitalis was almost always indicated. He could not consider so-called idiopathic acute nephritis as a very rare disease. Many cases are met with, and he had himself seen an unusually large number this winter, in which no other exciting cause than exposure to cold could be arrived at, and he thought exposure to cold must be accepted as such a cause.

A considerable number of adults had entered the City Hospital this winter with acute nephritis, the result of previous scarlet fever during the late epidemic, the scarlet fever having been unnoticed at the time, or not considered of enough consequence to lay up for. The speaker agreed with Dr. Osgood in deprecating the introduction of new names to describe the disease, or even the retention of most of the old ones — parenchymatous and diffuse nephritis were sufficient.

DR. T. M. ROTCH remarked that he believed that as our knowledge of the symptomatology of infantile renal disease, and the renal disease of young children became more extended, we should find that idiopathic nephritis; that is, a nephritis not incited by the usual recognized causes, as scarlet fever, etc., is not so uncommon a disease as it was formerly supposed to be. He had no doubt that many cases are overlooked, and are considered instances of nutritive disturbance from the absence of certain adult symptoms, notably oedema, and yet where a careful examination of the urine would at once clear away obscurity from the diagnosis, and definitely pronounce the disease to be acute or subacute nephritis.

DR. F. C. SHATTUCK said that the distinction between acute nephritis and an acute exacerbation of a chronic nephritis, a distinction which it may be impossible to make for a time from the urine alone, can usually be made by the presence or absence of notable left ventricular hypertrophy, the nearly constant accompaniment of every chronic nephritis.

In a case recently under observation, this point was relied upon in determining the duration of the disease;

³ See page 190 of the Journal.

and it was very interesting, later, to see the enlargement of the left ventricle develop. This patient had repeated uræmic threatenings, which were always as promptly relieved by a vapor-bath, all the requirements of which were met by an alcohol lamp, chair, blankets — and patient.

On his arrival at the Massachusetts Hospital, one morning last summer, the speaker was told by his interne that there was a case of uræmic coma requiring attention. A large man, in the prime of life, was brought into the Hospital the afternoon before entirely unconscious, without any history, and free from œdema. Urine drawn with a catheter was highly albuminous. He was violent during the night, requiring restraint, and toward morning had several severe convulsions, in spite of pilocarpine, a diuretic which started the flow of water, and a purge, all wisely ordered by the interne. When the speaker saw him he was alternately comatose and wildly delirious; the face was much flushed; the respiration stertorous; the arteries hard and bounding. He was bled thirty-six ounces on the spot, two drops of croton oil were given, and later, a vapor-bath. The action of the bowels and skin were extremely free. That evening the patient woke up, spoke a few rational words, and recovered promptly in a week or ten days. It was found that three years before he had been in the Hospital with acute nephritis and dropsy: that his recovery from this attack had been apparently complete, certainly so far as symptoms were concerned; that he was a hard drinker of beer and a hard-working longshoreman; that for three days previously to the above-described attack he had been standing in water up to his arm-pits, transferring paving-stones from one boat to another, and freely imbibing beer. One reason for mentioning this case is that venesection was used, a remedy which has not yet been spoken of to-night, but one which is clearly indicated in some cases.

Dr. OSGOOD, in reply to Dr. Minot, said he had purposely not used pilocarpine in this case, because the patient had shown a tendency to vomit, and knowing that pilocarpine frequently causes intense nausea, he did not think it advisable in a case of such gravity, to take the risk of irritating the stomach still more. The patient was naturally strong, and he therefore opened all the doors of escape for the uræmic poison, by following a course which in the result proved successful.

In reference to Dr. G. B. Shattuck's query concerning ether as preferred to chloroform, Dr. Osgood said he would not use the latter in any case, simply because through its use he had once nearly lost a valuable life, and had then and there determined never to use it again. In regard to the hot air-bath mentioned by various speakers, Dr. Osgood said he thought it must be extremely difficult to manage where a patient was seized by a violent convulsion every twenty minutes.

In reply to Dr. F. C. Shattuck's allusion to hypertrophy of the left ventricle as a means of diagnosis between an acute nephritis and an acute exacerbation of chronic nephritis, Dr. Osgood considers it a most excellent point.

Dr. E. G. CUTLER said that Dr. Osgood was remarkably fortunate in the excellence of the action of his drug, in that though he had given eight pills of one-eighth grain each of elaterium there had been no vomiting by his patient. His own experience had

been that such doses were very likely to produce severe and prolonged vomiting, though there was free catharsis at the same time.

In reference to the remark of Dr. F. C. Shattuck that hypertrophy of the left ventricle is diagnostic between acute and chronic nephritis, he would agree that in the main this was so, but cases have been observed and reported, where in acute diffuse nephritis following scarlet fever, both hypertrophy and greatly increased arterial tension had been observed. The latter being frequently an early and marked symptom. The hypertrophy has been observed to occur in four days or even less, and has been carefully noted in its progress.

Dr. C. F. FOLSON called attention to the fact that a considerable amount of albumen may be found in the urine of patients who have had repeated convulsions at short intervals of whatever origin; and these convulsions may precisely resemble those seen in Bright's disease, so that a positive differential diagnosis is not always possible from convulsions, coma and albuminuria only.

Dr. H. W. WILLIAMS said that his experience in the use of pilocarpine had been that the effect varies in different individuals. He uses it tentatively, at first in small doses. The action is usually rapid, and repeated small doses can be given until the desired effect is produced.

Dr. PRINCE stated that in his experience; cases of coma, the result of chronic Bright's disease, were always fatal, whatever the treatment.

Dr. F. B. HARRINGTON advocated venesection, especially in plethoric cases, stating that forty-eight ounces or more might be removed. The removal of that amount of blood, if followed by the introduction of an equal amount of inert salt solution, would greatly change the character of the blood. This method of treatment was followed by excellent results in cases of very profound poisoning by illuminating gas.

PERI-PANCREATIC HÆMORRHAGE.

Dr. J. J. PUTNAM showed a specimen of peri-pancreatic hæmorrhage which had proved fatal in four days. He said that the case would be reported at another time at greater length, and regretted the absence of Dr. Whitney and Dr. Fitz, who made the examination, and could demonstrate the preparation better than himself.

The patient was a middle-aged man who had suffered for five years from a severe form of hemiplegia. His final symptoms consisted in severe epigastric pain, varying in intensity, but not easily controlled by remedies, associated with epigastric tenderness, nausea and vomiting, excessive pallor with a bluish tinge, feebleness of the pulse, and eventually cardiac paralysis. For eight hours or more before his death the patient had been almost pulseless, breathing very rapidly and excessively cold, but consciousness had remained unimpaired up to a few minutes before the final termination.

— A stuttering son of Ham, whose wife was threatened with a miscarriage, rushed into a doctor's office, and in an excitable manner, demanded his immediate attention. "What is the matter, Pompey?" queried the doctor. "My-my-wi-wi-wi-wife is-is-a-a-about to-to-mis-mis-mis-mis-construe." — *Medical and Surgical Reporter.*

MEDICAL SOCIETY OF THE STATE OF NEW YORK.¹

FIRST DAY.—EVENING SESSION.

THE HISTORY OF ABDOMINAL SECTION IN ALBANY, WITH A REPORT OF SEVENTY-FIVE CASES.

Dr. ALBERT VANDERVEER prefaced his paper with remarks on the importance of physicians reporting every case of abdominal section which occurred in their neighborhood, together with the results, whether good or bad. The first case of the list of seventy-five in Albany was one of Dr. Marsh, and the patient recovered. Six other cases were also those of Dr. Marsh. It was a noteworthy fact that in his report of the case Dr. Marsh said sponges should not be used, and the peritoneum should be interfered with as little as possible. Dr. Vanderveer traced a relation between the greater success of later operations and improved methods of operating and cleanliness. He paid a warm tribute to Mr. Tate, whose qualities as a man, and labors as a surgeon had not, he thought, been fully appreciated in America.

DISCUSSION ON SALPINGITIS.

Dr. WILLIAM GOODELL and Dr. PAUL F. MUNDÉ, who were to discuss the subject of pathology and symptoms, sent letters expressing regrets at their inability to be present.

Dr. CHARLES CARROLL LEE opened the discussion with remarks on

CAUSES OF SALPINGITIS.

He spoke of catarrhal salpingitis and true salpingitis, meaning by the former term inflammation of the mucous lining, and by the latter an inflammation involving all the tissues of the tube. Catarrhal salpingitis was the less serious, and occurred from any condition which would give rise to endometritis. It was rarely primary, but when it did occur as a primary affection it was due to cold, to repression of menstruation, and the usual causes of peri-uterine inflammation or congestion. True salpingitis was also due in its formative stage to extension of endometritis, and was more frequently due to septic influences than was the catarrhal form. The most severe form often occurred after abortion, when membranes remained to decompose and set up septic infection.

THE PROGNOSIS OF SALPINGITIS.

Dr. GEORGE SEYMOUR, of Utica, in discussing this subject, said the simpler and more common forms of salpingitis, whether acute or chronic, might all be said to have a tendency, under favorable conditions, to recovery, to return to a normal state of physiological action. But that a very considerable percentage of cases of salpingitis had reached a stage at which the condition was very serious, must be admitted from the reports of many distinguished observers.

Dr. FREDERIC A. CASTLE, of New York, discussed the

MEDICAL TREATMENT OF SALPINGITIS.

In most of his cases treated medically the patients had been seen by eminent specialists, who were unable to relieve them by drugs. Among measures which Dr. Castle had found beneficial, were to have the patient occupy a room separate from her husband, and relief of constipation by saline purgatives and

enemata. The tendency of enemata to lessen venous congestion would be enhanced by adding some saline substance to increase the specific gravity above that of the blood, so that osmosis would be into the cavity of the bowel. There should be absolute rest in bed, and restriction in the amount of food and drink. Among drugs which he had employed to meet different symptoms were veratrin, calomel, sulphuret of iron; instead of morphine for painful affections, a mixture of hyoscyamus and one of the bromides was safer. In massage, there was as much likelihood of forcing the fluid within the tube into the peritoneal cavity as into the uterine cavity. Besides, if the inflammation were severe, the patient would not submit to the massage treatment. It might be said that the medical treatment of salpingitis was not distinct from the treatment of inflammations of the pelvic tissues generally. To be of service, it should be employed early in the case. Owing to the difficulty of diagnosis, it was important that all pelvic inflammations should be treated judiciously from the first.

Dr. WILLIAM M. POLK, of New York, discussed the

SURGICAL TREATMENT OF SALPINGITIS.

Dr. Polk said this part of the subject had often been gone over, and the most that he could do was to again review what he had said on former occasions. After some general remarks, he spoke of three forms of salpingitis which went on to collections in the tubes, pyo-, hamato-, and hydro-salpinx. Pus in the tubes should be treated as elsewhere in the body, cut down upon and removed. What had prevented surgeons doing so formerly was fear of the peritoneum; that is, fear that the operation would be exposing the patient to more danger than to allow the pus to remain. Improvements in the treatment of the peritoneum had rendered the operation almost as safe as when the pus collection was just beneath the skin. In pyo- and hamato-salpinx the opening should, in general, be made in the direction of pointing. Without such special indication, the central abdominal opening should be chosen. In parenchymatous salpingitis, that form in which there was great thickening of the walls of the tubes, the indications for treatment were less plain than in pyo- and hamato-salpingitis; yet, as we could not say that it would readily undergo resolution, and inasmuch as the patient's life was in danger, he thought we should operate. The next condition was that in which one tube contained pus, and the other, so far as the eye could detect, was sound. Many surgeons had been disposed to extirpate the former and leave the latter. Dr. Polk thought it might be shown that both tubes should be removed. At any rate, they should both be removed unless the surgeon wished to run the risk of having to open the abdomen twice, for the apparently well tube was very apt, after removal of the diseased one, to become filled with pus within a period varying from six months to a year. If there were present active endometritis, it certainly would be unsafe to leave the other tube. If the endometrium were sound, we might leave the second tube, especially if we were anxious not to unsex the patient.

Regarding removal of the tubes for catarrhal inflammation, he was of the opinion at present that it should not be done, for doubtless every man present had seen such cases go on to absolute recovery.

¹ Continued from page 181.

There was a class of cases in which the tubes, while not closed, were bound down by adhesions, could not expand properly at the menstrual period, when they naturally became engorged, and they then caused much pain. In this condition, Dr. Polk thought we were justified in opening the abdomen and breaking up the adhesions, freeing the uterus and tubes, so that they could undergo their monthly physiological change without causing the patient so much suffering. He thought this might be done, and the risk of re-formation of adhesions be avoided by measures which he could not then discuss.

Dr. Castle had very properly pointed out the dangers attending Schurz's method of massage in collections of fluid in the tubes.

Dr. W. GILL WYLIE discussed

THE RESULTS OF OPERATIVE TREATMENT.

He first made some remarks on papers previously read, and said that in his experience the great majority of cases of salpingitis demanding operative interference were caused by sepsis following abortions and labors, and that it was a mistake to say the majority, at least, of those demanding operations, were due to gonorrhoea and catarrhal inflammations.

In his paper, Dr. Wylie showed that since strict cleanliness had come to be observed, the results of operations for salpingitis had been much more favorable. In his paper he gave the results of seventy-eight laparotomies, all told, which he had performed during the year: eight hysterectomies for uterine fibroids, one death; fifteen laparotomies for large ovarian tumors, one death from nephritis; forty-one for disease of the tubes or fibroma, one death from nephritis. Altogether, he had operated for removal of the uterine appendages in one hundred and fifteen cases, six deaths. In pyo-salpinx it was the only treatment. In hydro-salpinx, it alone would often relieve pain. About three per cent. of all cases menstruated after removal of both tubes, but in general these were the cases in which there were the greatest adhesions, and it was doubtful whether all of the tube had been removed.

Dr. ALBERT VANDERVEER also discussed briefly the results of operative treatment, and said we should not lead our patients to expect too much in the way of immediate results after removal of the uterine appendages for pyo-salpinx. His own experience regarding hystero-epilepsy was that this symptom had not been cured by removal of the uterine appendages. When the operation was done the appendages should be removed thoroughly.

TREATMENT OF COMPLETE PROCIDENTIA OF THE WOMB BY ALEXANDER'S OPERATION.

Dr. CHARLES CARROLL LEE read the paper, and expressed the hope that by the aid of Alexander's operation we might cure the most extreme conditions of procidentia.

Dr. W. POTTER, of Buffalo, read a paper on

THE MANAGEMENT OF PELVIC INFLAMMATIONS IN WOMEN,

in which he made general remarks on pelvic inflammations, and then considered the management of their residue. In the paper he underscored the following points:

(1) The importance of early attention to even minor pelvic inflammations.

(2) Suggested a simpler classification; namely, into simple pelvic inflammation, or pelvic cellulitis; second, compound pelvic inflammation, or cellulitis-peritonitis; and third, complicated pelvic inflammation, in which the appendages were involved.

(3) The influence which the inflammatory remains exerted on the health of the woman.

(4) The great value of support and pressure in their treatment.

(5) A thorough trial of all other measures before resorting to surgery.

Dr. W. M. POLK then read a paper on

VAGINAL HYSTERECTOMY, WITH A REPORT OF EIGHT CASES.

He had performed the operation in the eight cases for cancer of the uterus, and it was only for this disease that he discussed the operation. Statistical arguments were based on the seven hundred and thirty-two cases collected in a Philadelphia journal. We had reason to believe that the next like series of cases would show a much smaller death-rate. The results were best shown by the statistics of Martin and Fritz. Dr. Polk then described in detail his method of operating. The great danger was from shock caused by a prolonged operation.

SECOND DAY.—MORNING SESSION.

Dr. WILLIAM H. THOMPSON, of New York, read a paper entitled

DISTINCTION BETWEEN FUNCTIONAL AND ORGANIC DISEASE OF THE NERVOUS SYSTEM.

in which he drew the following distinction between an organic and a functional nervous disease: the former is accompanied by characteristic, invariably present, and recognizable organic change or changes in nerve-texture; the latter is a disease in which there is no such invariable organic change which has yet been made out.

Examples of the former were myelitis, meningitis and peripheral neuritis. Of the latter were chorea and epilepsy. True functional diseases presented the grand distinctive feature of intermittency. For brevity, and to make his views understood, he confined his remarks to the causation of an epileptic fit. A peripheral irritation excited central structures and caused a fit. The irritation again arising, a second fit occurred. In the intervals between the fits there was no change in the central nerve structure, and the fit arose from temporary disordered function. The habit might become more or less fixed, just as one could contract a mechanical habit, which was easy of repetition when the peripheral or external stimulus was presented, yet there was no structural lesion. This was true even of those cases of epilepsy in which the afferent impulse proceeded from a tumor within the cranial cavity. True functional nervous disorders were invariably peripheral in their origin, never central.

For treatment of functional nervous disorders, search for the point of afferent irritation.

THE DIETETIC TREATMENT OF GOUTY DIATHESIS.

Dr. WILLIAM H. DRAPER, of New York, read the paper. After defining the terms diathesis, gout and gouty diathesis, he briefly referred to the lesions and then took up the subject of dietetic treatment. Often a distinction could not be made clinically between the rheumatic and the gouty diathesis, while the so-called

lesions of the two diseases might justify such a distinction. It had come to be a common impression that nitrogenous foods were inappropriate for the gouty, while hydro-carbons should be used. Dr. Draper's experience went to prove the contrary, and he forbade the use of fats, sugars and starches, while he recommended nitrogenous articles. It was also the common belief that fruits were good for these patients, but he had found them unable well to digest them. The theory of uric acid being the essential cause of the disease, had led to the false treatment by exclusion of nitrogenous foods. Beer and wine should be avoided. If spirits were used, dry champagne would be found among the least harmful for these patients.

REPORT OF THE COMMITTEE ON HYGIENE.

DR. E. V. STODDARD read the report. The Committee had, during the year, given its principal attention to organizing local committees, consisting of from three to five, in the several counties, which should act in concert with the State Committee. They did not favor the view that Local Boards of Health should be composed entirely of physicians; two or three physicians were sufficient, while the remaining members of the Board should be composed of energetic, intelligent business men. Boards of Health and Health Officers should not be under political influence. A communication from the Medical Society of the County of New York treated of the evil of long tubes in nursing bottles, also of measures to prevent the sale of adulterated milk.

TREATMENT OF PENETRATING GUNSHOT WOUNDS OF THE CRANIUM.

DR. JOSEPH D. BRYANT, of New York, in this paper considered only local treatment. The commonly accepted indications for local treatment were: arrest of hemorrhage, elevation of depressed bone, removal of foreign bodies, establishment of good drainage, combatting inflammation.

Should the ball be removed from the brain? In statistics of 236 cases, it was not removed in 170, and was removed in 66. Of the former 54 per cent. died; of the latter 43 per cent. died. Of the former, again, only 20 per cent. recovered without sequelæ; of the latter 41 per cent. made a complete recovery.

Force should never be used in probing. The induction balance and telephonic probe were instruments which best enabled us to definitely locate the ball. If the ball could not be located it should be permitted to remain unsought for. Fragments of bone in the course of the wound should be removed. The bullet should be removed as soon after the wound as the patient's condition would permit. If symptoms developed in an old case one should seek to remove the ball.

The wound should be so placed as to facilitate drainage. Drainage could be best secured by making a counter opening, and by enlarging somewhat the bony rim at the point of entrance. In one case Dr. Bryant used numerous horse-hairs as a drain.

DR. JOHN H. GIRDNER, of New York, made a

DEMONSTRATION WITH THE INDUCTION BALANCE AND TELEPHONIC PROBE.

He had so far perfected the induction balance as to be able to detect a metallic substance in the brain an inch and a half distant from the scalp, and he hoped to be able to make the instrument still more perfect

in the future. The telephonic probe was already a perfect instrument; when it came in contact with the piece of metal in the body it invariably gave a signal. It was a curious fact that the sound given forth by the probe when it came in contact with metal in the human body differed in intensity in different persons, and in the same persons in different states of health, but it was in all sufficiently intense to be plainly noticeable.

EXTENSIVE CRANIAL FRACTURE; CONSIDERABLE LOSS OF BRAIN SUBSTANCE COMPLICATED WITH FUNGUS CEREBRI.

DR. A. ROSS MATHESON presented a young man who, when a boy, was tramped upon by a horse, causing the injury indicated in the title of the paper. He was now engaged as a compositor in financial statistics, which required a good deal of mental work. He showed no effects from the injury.

FRACTURE OF THE SKULL WITH DEPRESSION.

DR. HENRY FLOOD, of Elmira, read the paper, in which he gave, among other observations, the results of experiments going to prove that fracture of the outer plate of the skull without injury to the inner table was of so rare occurrence that it was hardly worth considering in practice. The frontal sinus occupied a smaller space than was generally supposed.

DR. GLASS related the case of a street car driver who shot himself in an attempt at suicide, the ball passing to the opposite side of the head. Within two months he resumed his ordinary occupation. The ball could still be located by the induction balance about an inch from the skull. He asked Dr. Bryant whether he would, under the circumstances, the man being well, cut down and remove it.

DR. BRYANT said that if the induction balance should show that the ball was changing its position, he would, through fear of its interference with important nervous centres, remove it, but if it was shown to remain stationary he would leave it.

DR. CHARLES STOVER, of Amsterdam, then read a paper entitled,

THE INTERDEPENDENCE OF LOCAL, STATE, AND NATIONAL HEALTH BOARDS; A PLEA FOR THEIR UNIFICATION.

(To be continued.)

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON PEDIATRICS.

STATED MEETING, January 25, 1888.

DR. A. CAILLE presented a

CASE OF GENERAL MUSCULAR CONTRACTURE

in an infant of six weeks, which had been seen by him for the first time that afternoon, and said that it seemed to him that the condition present was probably due to an arrest of development *in utero*. The parents were both healthy, and this was the third child of the mother. The other two children were strong and well-developed in every way. This infant was born at full term, and the head was comparatively large, with a decided flattening on one side of the cranium; but the rest of the body was small and shrunken in appearance. The jaw, which was turned somewhat to one side, could be opened to only a very limited ex-

tent, so that the child was not able to suckle, and there was general contracture of the muscles of both the upper and lower extremities.

Dr. A. JACOBI, after an examination of the child, (which was exhibited to the section), said that he could not see any evidence of arrest of development, and that the condition present appeared to him to be the result of a meningo-encephalitis occurring during fetal life. The contracture of the jaw somewhat resembled that seen in incipient trismus, although the spasm was not so marked as in that affection. The appearance of the cranium was very much like that met with in cranio-tabes, in children a year or more old. He thought it was doubtful whether galvanoelectric treatment would be of much service in such a case, and that an unfavorable prognosis must be pronounced; although a certain proportion of children presenting the condition noted in this infant, which was undoubtedly very rare, recovered.

The chairman, Dr. J. LEWIS SMITH, exhibited a

CASE OF INFANTILE PARALYSIS.

which, in his opinion, was the result of polio-encephalitis. The child was two years old, and had always been perfectly healthy, with the exception of an attack of diarrhoea, up to May last, when, at the age of sixteen months, while apparently quite well, it was seized with violent convulsions, which lasted from 6 P. M. to 3 A. M., and were accompanied with considerable febrile movement. After the stupor commonly following severe eclampsia had passed off it was found that the child had complete paralysis of the muscles on the left side of the body, including the facial muscles on that side. The recovery from the facial paralysis was complete, and took place rapidly, while there had been a gradual improvement as regards the muscles of the upper and lower extremities. At the present time the child was able to walk, though partly dragging the left leg, and there was still a spastic condition of the toes on the affected side.

Dr. Smith said that it seemed to him that some of the cases resembling this which had been reported as due to cerebral inflammation were in reality instances of cerebro-spinal meningitis. Since 1871 epidemic cerebro-spinal meningitis had obtained a permanent foothold in this city, and New York children are, therefore, constantly liable to be attacked with it. In the present case, however, the patient resided on Long Island, and, consequently, not being subject to influences giving rise to cerebro-spinal meningitis, he thought the latter might be excluded here. It was thus evident that the condition noted must have had a local cause, and, judging from the history of the case and the symptoms described, particularly the fever accompanying the sudden attack of eclampsia, he was inclined to the opinion that it was one of infantile cerebral paralysis or polio-encephalitis, described by Strümpell. One of the characteristics of this affection, according to the author named, was that tendon reflex was not only not impaired, but became exaggerated, and this was found to be the case in the present instance.

Dr. B. SEARS said that it appeared to him that simple meningeal hemorrhage would offer a more satisfactory explanation of the phenomena noted in this case than polio-encephalitis. As a result of the latter condition there almost always followed more or less mental impairment, while after meningeal hemorrhage

the condition of the intellectual faculties, as a rule, remained unaffected. Still, it was by no means certain what the exact diagnosis was here, and he thought it would be impossible to arrive at any definite conclusion until an investigation of the electrical relations of the case had been made.

Dr. A. JACOBI said that after hemorrhage the presence or absence of mental impairment would depend, first, on the size of the clot, and, second, upon the amount of consecutive inflammation. When there was mental impairment it was to be inferred that there had been considerable encephalitis following the hemorrhage. In this case he said he was very much inclined to think that the severe convulsions gave rise to the hemorrhage, which caused the paralysis. As to the advantage of studying the electrical relations here, he did not believe it could throw much light upon the diagnosis.

Dr. SMITH stated that it was the marked febrile movement described as accompanying the eclampsia which had principally led him to decide in favor of polio-encephalitis.

Dr. FRANCIS P. KINNICUTT said that he believed that many cases like this were due to embolism. Abercrombie, in reporting a number of cases of infantile paralysis recently in one of the English medical journals, had expressed the opinion that a certain proportion of them depended on embolism, and Goodhart, while acknowledging other sources of origin in many instances, also ascribed some of the cases to this cause. It seemed to him, therefore, that the possibility of embolism should always be taken into consideration, and particularly where the children were in an asthenic condition, as after attacks of the exanthemata.

Dr. JACOBI said that in debilitated states resulting from the eruptive fevers we should expect thrombosis, rather than embolism. If there were heart-disease, or even a broncho-pneumonia, we might believe that an embolus was the cause of the paralysis, but otherwise he thought this was to be excluded. Thrombosis, however, was a very common result after exhaustive diseases.

Dr. KINNICUTT said that he should have explained that in embolism occurring in the asthenic conditions referred to, he should attribute the embolism to thrombosis located in some distant part.

Dr. SMITH said that in this case thrombosis and embolism could be excluded on account of the previous good health of the child.

Dr. LANDON CARTER GRAY, of Brooklyn, said that the exact diagnosis of hemiplegia in children was attended with much obscurity. Personally, he was very doubtful whether the condition described by Strümpell occurred very often, and he believed that the statements which this authority made, were founded to a large extent on mere speculation. The most that we could say was that in children the site of the trouble was apt to be in the cortex of the brain, and usually in the motor region. It was generally impossible to make a differential diagnosis, and at autopsies he had more than once had occasion to congratulate himself that he had not attempted to decide between encephalitis and meningitis during life. The whole matter was entirely uncertain, and in the present state of our knowledge, on account of the great liability to make mistakes, he thought it was more scientific not to venture upon a precise diagnosis in such cases.

DR. A. JACOBI was to have read a paper on

SEPSIS IN THE NEWLY BORN,

at this meeting, but in consequence of the nature of the cases just presented and discussed, and their intimate connection with the subject of the paper of Dr. Seibert, also announced for the same evening, he asked to be excused, and expressed the opinion that it would be more advantageous to devote the whole session to the subject of infantile paralysis.

DR. A. SEIBERT then read a paper entitled

A CONTRIBUTION TO THE STUDY OF CEREBRAL PARALYSIS IN INFANCY.

After a few introductory remarks he said that in 1885 he was called upon to examine an infant two-and-one-half months old. It was the seventh child of its mother, all the others having been healthy children, and there was no evidence of syphilitic or tubercular trouble. The mother stated that during the pregnancy when she was carrying this child, she scarcely ever felt lye, and that when the infant was born it was asphyxious and had the cord tightly wrapped twice around its neck. It was very different from her other children, being small and flabby, and for two months it never stirred or cried. When two-and-one-half months old it had an attack of capillary bronchitis, and it was at this time that it first came under Dr. Seibert's notice. At the end of ten months it is still practically in the same feeble condition. It lay quietly on its back, the skin was wrinkled, and the respiration was noted to be very largely diaphragmatic in character. There was no evidence of cranio-tabes. The pupils were narrow and equally dilated, and the constant expression on the child's face was that of a dreamy, vacant stare. When the body was raised to an upright position, the head would fall to which ever side on which there was the greatest incline. The intercostal spaces were very narrow, the intercostal muscles evidently took but little part in the act of breathing, and there was a deep furrow in the diaphragm. The muscles of the neck were but mere strings, and there was in general an almost complete absence of muscular power. The infant never had any convulsions.

From the phenomena thus presented, there could be little doubt that there was an atrophied condition of the brain, and Dr. Seibert endeavored to find out the cause of this. As the condition noted had existed from birth, meningitis was at once dismissed; for if it had been due to meningitis, the latter must have occurred during fetal life, and so far as he was aware, this was something which had never been met with. Neither did he believe that the trouble was due to hemorrhage. The child was small, flabby and atrophic when born. All the symptoms denoted an atrophic condition of the whole body, including the brain, at the time of birth and after birth. The muscles of the neck were more completely atrophied than any others, and in this connection it was significant that the infant had been born with the cord wound twice about the neck.

In this constriction of the neck by the cord, it seemed to him, was to be found the solution of the problem presented. By means of this constriction the blood-supply of the head and brain had been to a great extent cut off, and this would fully account for the cerebral atrophy and the general lack of nutrition in the child's body. At the time of birth the blood-

vessels of the head, which had long been comparatively empty from the pressure of the cord around the neck, suddenly became filled when this was removed, and hence the asphyxia noted.

At fourteen months of age the child died from another attack of capillary bronchitis, and when the brain was examined after death it was found that the layer of white matter was very thin, and the diagnosis of cerebral atrophy was abundantly confirmed. In the course of his experience, he said that he had met with four cases altogether in which there was congenital atrophy of the brain, but this was the only one in which he had been able to secure a full clinical history, and verify the diagnosis by autopsy.

The second variety, he went on to say, was more common than the first, just treated of, and of this he gave a detailed description of two cases. In one of these a post-mortem examination was made, but not in the other. In this second class of cases the symptoms were similar in character to those met with in the first: but here they were brought about by pathological changes; namely, meningitis with exudation, arachnoid thickening, and sometimes moderate hydrocephalus. The results of the meningitis caused atrophy of the brain. The symptoms of defective innervation always remained the same whether the cerebral atrophy were congenital, or was the result of subsequent meningitis.

The third class of cases mentioned was characterized by incessant crying and moaning, with muscular contractures and sometimes permanent opisthotonos, though there were no general convulsions. The condition was due to chronic meningitis, steadily increasing, and causing abundant exudation over the cortex, but running its course without febrile movement. He related two cases of this kind, occurring in a brother and sister, and in one of them the diagnosis was confirmed by autopsy. After lasting for several months, the affection terminated in heart-failure; the temperature in one case falling to 96° F., and in the other to 94°. In the case in which the post-mortem was made there were no tubercles nor tubercle-bacilli found.

In conclusion, Dr. Seibert said that in these three classes of cerebral paralysis of infancy the clinical manifestations are all due to atrophy of the brain, although, in the first, the original cause of trouble was insufficient blood-supply; in the second, acute meningitis; and in the third, chronic meningitis.

—The total amount of life insurance in force in the world at the end of 1886 is reported by an expert to have been seven and a quarter billion dollars. Of this the United States had over one-third, more than either Great Britain and Ireland, or the whole continent of Europe. Up to 1883, Great Britain and Ireland headed the list.

—The *Pacific Record* figures it out that of one thousand graduates from collegiate institutions, seventy-five only make for themselves a name and prominence in their calling. About two hundred, having business qualifications, become rich by their practice, and by judicious investments. Four hundred abandon, in whole or part, their profession, for some more lucrative business, and the balance struggle with mediocre ability for a bare subsistence, and a wearying effort to keep up an appearance before the people.

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A NEW TEST FOR THE PRESENCE OF HYDROCHLORIC ACID IN THE GASTRIC JUICE. THE RECENT DISCUSSION BEFORE THE ACADEMY OF MEDICINE.

PROFESSOR GERMAIN SÉE, who considers all true dyspepsias as functional disturbances due to a perturbation in the chemical processes of stomachal digestion, has lately read a long communication before the Academy of Medicine, Paris, in which he reiterates the views expressed in his work on "The Dyspepsias," published in 1881. A large part of the indigestions being due to lack of the natural acid of the gastric juice, he would designate this kind of dyspepsia by the name *anachlorhydria*. This deficiency in hydrochloric acid is especially noticed in carcinoma of the stomach with or without dilatation, and in certain dyspepsias called *mucous*, and especially in those which result from inanition or marasmus. Where it has been clearly determined by repeated examinations of the contents of the stomach removed by the siphon that hydrochloric acid is lacking, (and such examinations Professor Sée always makes, before he undertakes the treatment of a difficult case of gastric disease), there is a clear indication for the medicinal administration of this acid, with or without pepsin. The best test for the presence, in however feeble quantities, of hydrochloric acid in the contents of the stomach is that recently proposed by Günzburg, and which, Professor Sée thinks, ought henceforth to settle the long dispute as to whether in normal stomachs the free acid of the gastric juice is hydrochloric or lactic.

Günzburg's phloro-glucine-vanillin test is as follows: A strong alcoholic solution of phloro-glucine and of vanillin is prepared in the proportion of two parts of the first to one of the second. In adding hydrochloric acid to this solution, there is a precipitate of scarlet red crystals. If the hydrochloric acid is very dilute it is well to employ only a few drops of the test liquid and the fluid under examination. This is evaporated in a watch-glass or porcelain crucible, by means of a gentle heat. At the sides of the liquid undergoing evaporation, there is observed a slight

rosy tint, which is also quite perceptible by lamp-light. This is a very delicate test, for while litmus requires the presence of at least one per cent. of the acid in the liquid under examination in order well to respond, Günzburg's test reveals the presence of hydrochloric acid if the solution is not stronger than 1-5000, and is not at all influenced by the presence of organic acids, such as lactic and acetic acids.

In the acid dyspepsias, characterized by heat in the stomach, pyrosis and cardalgia, hydrochloric acid can only aggravate the symptoms; here an azotized diet, inert powders and alkalies are indicated. Professor Sée does not recognize any other form of dyspepsia but those of a chemical nature; the other kinds are "pseudo-dyspepsias," and comprise what he treats of in his works under the head of "nervous and motor dyspepsias," "constitutional and toxic dyspepsias," and "gastro-intestinal atony."

At the second meeting of the Academy, held January 24th, the paper of Germain Sée was discussed by Dujardin-Beaumetz, Constantin Paul, Laborde and others.

Dujardin-Beaumetz was not disposed to place much stress on the chemical examination of the contents of the stomach in dyspeptics, with reference to determining the minimum or maximum amount of hydrochloric acid secretion. Many causes, apart from digestion, modify the production of this acid. Thus the acidity of the gastric juice is diminished by abundant perspirations, and in females by menstruation; renal and nervous perturbation also markedly modify the gastric juice. He believed, moreover, that the word dyspepsia had no more right to be retained in treatises on Practice of Medicine, as a nosological entity, than the word vomiting, both being only symptoms of a variety of morbid states.

Constantin Paul alluded to the valuable discoveries of Debove and Bonchard, on dilatation of the stomach and its consequences, as throwing light on the pathogeny of many forms of dyspepsia, and referred to the value of Rommelere's urea test in diagnosing simple from malignant forms of gastric disease.

Laborde maintained that the view which he had entertained from the commencement of his physiological studies, and which had been confirmed by experiments of his own, namely, that the stomach in the normal state contains lactic and not hydrochloric acid, had not been overthrown. The phloro-glucine-vanillin test, which he was disposed to make little account of, in no way invalidates this conclusion.

Professor Sée, in closing the debate, admitted the presence of free lactic acid in the gastric juice, but affirmed that hydrochloric acid predominates in the stomach during digestion, as can easily be determined by analyzing the contents of the stomach removed half-an-hour or so after a meal of azotized substances.

—A relatively large number of cases of typhoid fever has occurred recently in the Royal Barracks, Dublin.

REPORT OF NEW YORK STATE BOARD OF HEALTH.

THE annual Report of this State Board of Health is now ready for transmission to the Governor. It gives the total number of deaths in the State during 1887, as 96,453. Of this number 35,114 were of persons under five years of age. Phthisis caused 11,609 deaths; diseases of the nervous system, 9,957; typhoid fever, 1,327; and small-pox, 175. The aggregate population upon which the figures given are based is 3,500,000, the death-rate being 23 per 1,000 inhabitants; indicating, it is said, an average longevity of 43.74 years. The other vital statistics for 1887, excluding New York, Brooklyn, Yonkers, Albany and Buffalo, are given as 46,857 births and 22,966 marriages.

The report embodies the recent report of the Board to the Governor, in regard to the condition of the Quarantine Station of the port of New York, and recommends that the Health Officer, in conjunction with the State Engineer, be directed to prepare plans for such remodelling of the station as is required for its more thorough efficiency, and that these plans be submitted to the Board for approval. Also, that in case a bill is passed by the Legislature appropriating moneys for repairing the Quarantine Station, it so read that such repairs are to be made on plans and estimates prepared and approved as above.

Among the other recommendations made in the report are the following: That power be given to the Superintendent of Public Instruction to enforce through trustees the sanitary improvement of schools; that the Supreme Court, as well as County Judges, be empowered to approve regulations of the Board as to the water-supply for cities; and that a more thorough organization of local health boards be provided for.

PLEURO-PNEUMONIA IN CATTLE IN NEW YORK.

Professor Law, chief inspector of the Bureau of Animal Industry in the State of New York, states that there is no unusual ground for the alarm which is said at present to prevail among dairymen and other owners of cattle in regard to pleuro-pneumonia. Owing to the active exertions of the deputies and inspectors in endeavoring to stamp out the disease, however, more than the usual number of cases are being reported; and this has created the impression that it was rapidly spreading. As a matter of fact, there has been an actual decrease in the number of affected animals, owing to the work of the Bureau in purchasing and causing to be slaughtered all cattle that have been exposed to the contagion. The quarantine system now established in the counties of New York, Westchester, Kings, Queens and Richmond, is absolute. Not an animal can be moved from one stable to another without a permit from the Bureau, nor can an animal be sent to an abattoir for slaughter, until such a permit has been obtained. Even then the butcher is

not allowed to kill the cattle except in the presence of an inspector, who takes possession of the lungs for purpose of determining whether the animal had been diseased. Almost every head of cattle in the five quarantined counties has been registered upon the books of the Bureau, and within a few days the registry of the stock will be complete; each animal having attached to its ear a tag bearing a number which corresponds with a number on the books. As a rule, owners are said to be satisfied with the terms made by the Bureau's agents; but on Long Island there is some dissatisfaction among certain advocates of inoculation. Professor Law is opposed to this system, believing that it would never eradicate the disease, and since the Government is willing to pay for the slaughtered animals, he thinks the owners should be glad to assist in stamping out the disease, rather than wish to perpetuate it by means of inoculation. He is confident that under the system now in operation, the disease will disappear within a few months.

TREATMENT OF TYPHOID FEVER BY SMALL DOSES OF CORROSIVE SUBLIMATE.

CORROSIVE sublimate has the reputation of being the best germicide yet known, and typhoid fever is now generally regarded as a germ disease. Therefore, it is natural that clinical experimenters should have endeavored to avail themselves of the parasiticide properties of this mercurial salt in typhoid fever. Unfortunately, however, the doses in which the mercuric chloride is fatal to bacteria are rather hazardous for internal administration, by reason of the irritation which they occasion in the alimentary canal, as well as by reason of the depression of the vital forces sometimes consecutive to therapeutic mercurialization.

In a communication to the Paris Society of Biology, October 29th, Roger and Charrin offer reasons for believing that the bichloride retards the growth and development of the typhoid bacillus (Eberth's bacillus) in much smaller doses than has been supposed; one part to twenty thousand markedly hindering the multiplication in nutrient media of these microbes. "Moreover," says M. Charrin, "in starting with a minimum dose of an antiseptic capable of arresting life in a micro organism, one may diminish this quantity by a third, even by one-half, and consequently, diminish in this proportion the noxious action which might be exercised on the patient by the antiseptic employed, while, at the same time, a considerable influence is retained on the infectious agent which it is desired to combat, for its life, development, and function are to some degree impeded thereby." The same writer argues further, that if the vitality of these microbes is not compromised by the solutions of 1-30,000 to 1-60,000 of the corrosive chloride, which he recommends for internal administration, their functions will, nevertheless, be in a measure annihilated by subjecting the bacilli to the presence of the toxic agent; and among these functions, it is now held,

since the researches of Gautier, Bouchard, and others, that the secretion of poisonous ptomaines has an important place.

Dr. Edouard Rondot has published in the *Gazette Hebdomadaire des Sciences Médicales* the results of his hospital experience with typhoid fever, as treated the past year by small doses of corrosive sublimate often repeated; the daily quantity of this salt prescribed for an adult patient not exceeding five milligrammes, or about one-twelfth of a grain. He reports twenty-three cases thus treated, all of which were characterized by their gravity, and all of which, except two, recovered, these two having been brought to the hospital in an advanced stage of the malady. In the twenty-one cases that got well, there was, he affirms, a shortening of the term of the disease, and a marked attenuation in the intensity of the principal symptoms under the sublimate treatment. There was no unfavorable complication, such as diarrhoea, salivation, or debility—complications which have often been imputed to mercurial treatment. Rondot prescribes the bichloride in an alcoholic potion, with balm water, syrup of punch, and extract of cinchona. This formula, which, as it stands, would be impossible of execution in this country, may be thus rendered:

Anise cordial	40 grammes.
Simple elixir	30 grammes.
Extract of cinchona	2 grammes.
Bichloride of mercury	2 to 5 milligrammes.

Dose, a tablespoonful every two hours.

Concurrently with this medicinal treatment, he gives plenty of nourishment in the form of milk and broths, and vinous lemonade. He also gives quinine in fractional doses "to slow the movement of disintegration, without diminishing the oxidations." The average duration of the disease under this treatment has been fifteen days."

Rondot believes that his sublimate potions do good principally by attacking the microbes in the blood, where, however, they are relatively few in number. For a local effect on the alimentary canal, it would be well, he thinks, to employ, besides, a microbicide which is almost completely insoluble, like naphthol.

We are not disposed to expose ourselves to disappointment by expecting precise specific results from this bichloride treatment of typhoid fever, not having yet realized our very moderate expectations from the treatment by naphtholine. Are we to arm ourselves with a different weapon for the pursuit of this microbe according to the nature of his lair, whether in the blood, in the alimentary canal, or in the tissues themselves, as the spleen, mesenteric glands, etc.? Under such circumstances, the last state of the patient, we cannot but fear, runs a chance of being worse than the first.

MEDICAL NOTES.

—The accounts in regard to the condition of the German Crown Prince are far from reassuring and

lead us to expect a not very distant confirmation of the unfavorable prognosis already plainly expressed in our editorial of November 17, 1887.

BOSTON AND NEW ENGLAND.

—Both branches of the city government have passed without a dissenting vote an order requesting the Trustees of the City Hospital to present estimates for an Out-patient Building.

—On the night of the 15th inst., a gentleman, aged sixty-eight years, residing at Oak Knoll, Danvers, Mass., left his bed while asleep, and walked forth from his house clad only in his night-shirt. He was found the next morning frozen to death, about a quarter of a mile from his house. The thermometer marked from eight to ten degrees below zero that night. The same man, who had been afflicted with somnambulism for some years, is said to have nearly perished in a similar way once before. He went from his house one cold night, but was observed and brought back, having, however, to suffer the amputation of a finger that was frozen.

—The late Gardner S. Burbank, in his will, made generous provision for the establishment of a hospital in Fitchburg, Mass. After providing for certain bequests, he leaves the income of the residue of his estate to Mrs. Burbank during her life. After her decease, the property goes to found and maintain a hospital for care of the sick. The money is left without restriction, but with two suggestions only. First, that at least \$100,000 be devoted to the purchase of necessary land, and the erection of a substantial and commodious hospital building. He also requests that those who are able to pay for services rendered in the hospital be subjected to such reasonable charges as are usual in similar charitable institutions, but those who are in poverty and sickness shall ever be received and cared for kindly and tenderly, "without money and without price," and without regard to color or nationality. In closing, he states that provision for the foundation of the hospital is made "by request of my wife, whose good judgment has so greatly aided me in all my affairs and purposes of my life." The estate is mostly personal property, and the amount is not yet known.

NEW YORK.

—A letter of Dr. A. E. MacDonald, superintendent of the city insane asylums, written in response to a request from the Mayor for information upon the subject of the causes of insanity among certain artisans, having been referred to the president of the Board of Health, the latter has prepared a statement, in the course of which he says: "The question of cigar-making in tenements is so intimately connected with certain commercial and social problems that the statement is hardly credited as an honest one that there are absolutely no trustworthy facts of any kind, other than assertions, to show whether cigar-making in tenements is more injurious to the health of the

workman than cigar-making in large shops, or the contrary; and yet this is the truth. . . . As regards the statistics of insanity furnished by Dr. MacDonald, it is to be noted that the so-called 'contemplative trades,' in which the workmen lead a sedentary life, and are engaged in some mechanical operation which leave their minds free to muse on other subjects while they are at work have always furnished a large proportion of cases of insanity. This was noticed among shoemakers and tailors a hundred years ago, and with the immense recent growth of cigar manufacture the cigar-makers may fairly be classed with those trades, it being far more probable that the monotony of these occupations brings about insanity than the sleeping, cooking, and working in the same room, which many an artist or literary worker also does. . . . I feel justified in saying that all the information now before the Board leads us to believe that there is nothing in the business of cigar-making which renders it especially objectionable in tenement houses. Personally, I am inclined to the opinion that if any trade should be excluded from the tenement houses it is that of tailoring, owing to the greater liability of textile fabrics to carry contagion than exists in the case of any other articles of manufacture."

— On a single day, February 13, ten cases of small-pox in cheap lodging-houses were reported in Brooklyn, and of these nine from one house. The building was thoroughly fumigated by the sanitary authorities, and thirty of the other inmates were vaccinated and locked up until it could be seen whether any further cases would be developed. On the 15th of the month there were eighty cases of small pox in the county hospital at Flatbush, and it is said that when full it is capable of accommodating only one hundred patients. In the future all the cheap lodging-houses in Brooklyn will be inspected daily by officers of the Health Department. They have been found, as a rule, to be dirty and over-crowded, and this step is a wise precaution.

Miscellany.

THE HUMAN BREATH A POISON.

The Paris correspondent of the *Medical Press and Circular* reports that at the last meeting of the Académie des Sciences, Professor Brown-Séquard referred to some experiments he had conducted with a view to determine what, if any, were the toxic effects of the human breath. In condensing the watery vapor coming from the human lungs, he obtained a poisonous liquid capable of producing almost immediate death. This poison is an *alkaloid* (organic), and not a *microbe* or series of microbes, as might have been imagined. He injected this liquid under the skin of a rabbit, and the effect was speedily mortal. The animal died without convulsions; the heart and large vessels were engorged with reddish blood, contrary to what is observed after ordinary death, when the quantity of blood is moderate and of a dark color.

In conclusion, this eminent physiologist said that it was fully proved that respired air contained a volatile toxic principle far more dangerous than the carbonic acid, which was also one of its constituents, and that the human breath, as well as that of animals, contained a highly poisonous agent.

MASSACHUSETTS MEDICAL SOCIETY.

COUNCILLORS' MEETING, FEBRUARY 1, 1888.
REPORT OF COMMITTEE ON MEDICAL DIPLOMAS.

At the meeting of the Councillors in October last, Dr. Bowditch stated that a physician who had received his diploma from a Homœopathic Medical School, had renounced homœopathy, and was desirous to become a Fellow of the Massachusetts Medical Society. He was willing to submit to the examination for membership, but was informed by the Censors that he was ineligible thereto in not having a diploma from a "recognized" school. He could only obtain this diploma by a prolonged and expensive attendance at such a school.

The following questions proposed by Dr. Bowditch, were referred to the Committee on Medical Diplomas:

First, The papers relative to Dr. Hipkiss and what action, if any, can be taken thereupon.

Second, The Question of Fellowship in this Society, as embraced in Articles I. and II. of the By-Laws.

The desire having been expressed that the reports of the Committee on Medical Diplomas, which were adopted by the Councillors at their meeting, February 1st, should be printed in full, they are here given to the readers of the JOURNAL.

BOSTON, January 26, 1888.

The Committee on Diplomas would report in reference to the papers relative to Dr. George Hipkiss, which were referred to the Committee at the last meeting of the Council, that the By-Laws of the Society, as restricted in their application by a resolve passed by the Councillors, October 7th, 1874, with the concurrence of the Society, forbid the Censors from examining an applicant for admission to the Society who has received a degree of Doctor of Medicine from a Homœopathic College. No action can therefore be taken in the case of Dr. Hipkiss without a concurrent vote of the Council and the Society, and such an act of special legislation the Committee do not advise.

WM. L. RICHARDSON.

A. H. COWDREY.

EDWARD J. FORSTER.

BOSTON, January 26, 1888.

The Committee on Diplomas, to whom was referred the question of Fellowship in this Society as embraced in Articles I. and II. of the By-Laws, would report that at present an applicant for admission to the Society must, among other qualifications, possess a diploma or its equivalent from an authorized medical school which is recognized by the Council. Having such credential he is obliged to pass an examination, a part of which must be in writing. Not possessing such diploma, or its equivalent, he cannot come up before the Censors for examination. The Council has adopted by vote a list of eighty-nine schools in this country whose diplomas shall be recognized. From the list are excluded all eclectic and homœopathic schools. A graduate therefore of an eclectic or homœopathic school, who becomes convinced by experience of the fallacious character of the tenets taught in those schools and who practices and believes as the members of this Society do, is not permitted to pass an examination before the Censors of this Society because he happens to be graduated from a school whose teachings, in a few respects only, we believe to be erroneous. In other words, the preliminary requisite for admission to-day, rest more on the diploma than on the knowledge, as shown by an examination, possessed by the applicant for admission. The Society would, in the opinion of the Com-

mittee, gain more if the diploma was considered of secondary importance, and the examination made the real test.

To prevent any misunderstanding and determine what schools should be recognized, the Council, October 7, 1874, and the Society, by its concurrent action the same day, voted:

That tickets or diplomas of Botanic, Eclectic or Homœopathic colleges, or of colleges devoted to any peculiar or exclusive system of medicine, are considered irregular, and will not be recognized under any circumstances;

And, That certificates from teachers, who practise any peculiar or exclusive system of medicine, who advertise, or who violate in any way the code of ethics adopted by the profession in this State, will not be taken, even though the teacher himself be a regular graduate in medicine.

It seems evident to the Committee that, without such a vote of restriction, the Council could, if they saw fit, recognize the diploma of any eclectic or homœopathic school as evidence of such an education as is required by By-Law I.

The Committee are of the opinion that the present policy of the Society is as illiberal as it is unjust and unwise. They believe that any physician apparently well educated should have the right, at least, to be examined as to his educational qualification in the branches specified in By-Law I. The education furnished by some of the eclectic and homœopathic schools in these branches is equal in its character and thoroughness to that furnished by many of the schools now recognized by the Council, and superior to some of them. The text-books used are, with few exceptions, identical. It does seem, therefore, unjust to require a graduate from these prescribed schools, without exception, to spend three years more in acquiring another diploma. Such a requirement must practically be a bar to admission to the Society. The Committee believe that a graduate from any school which the Council may recognize as furnishing the required education, and who proposes to renounce eclecticism, homœopathy or other exclusive dogma, should have the right to be examined for admission, and, having passed the required examination, should be admitted to the Society, fulfilling of course the other requirements for membership, as stated in the By-Laws.

It seems to the Committee that any well educated physician, whatever his previous belief or affiliations may have been, who renounces his past errors and wishes to adopt the truer and more rational practice of this Society should not be debarred by an iron rule, but rather welcomed and encouraged. Such liberality and wisdom of action on the part of the Society will commend itself not only to the profession at large, but to the community, and deprive the advocates of homœopathy and eclecticism of the role of martyr, which has done so much to promote and perpetuate homœopathy and eclecticism in this country. With this end in view the Committee recommend the repeal of the second and third paragraphs of the vote just read.

Should these paragraphs be repealed, the Committee will report at the next meeting of the Council the names of such eclectic and homœopathic schools as, in their opinion, furnish the required education, and which should therefore be recognized by the Council.

WM. L. RICHARDSON.
A. H. COWDREY.
EDWARD J. FORSTER.

Correspondence.

DR. H. O. MARCY AND THE MURDOCK LIQUID FOOD HOSPITAL.

116 BOYLSTON ST., BOSTON, February 15, 1888.

MR. EDITOR,—Permit me in the favor of your columns to inform any interested that I am not connected with the Free Surgical Hospital for Women, supported by the Murdock Liquid Food Company. I gave much time without compensation to its organization, with the understanding that it should be a great charity, worthy of the approval of

the most critical, conducive alike to the relief of suffering and the proper teaching of Gynecology, both clinically and in journalistic form. Having failed to secure that which I thought the profession demanded, after consultation with eminent medical men, I felt it obligatory to withdraw last July.

Very respectfully,

HENRY O. MARCY, M.D.

SANITARY CONDITION OF WATERTOWN ARSENAL.

WATERTOWN ARSENAL,

WATERTOWN, MASS., February 13, 1888.

MR. EDITOR,—Your editorial on the required sanitary improvements at this arsenal, found in the number issued February 9th, does not do justice to Dr. Alfred Hosmer, late Post Surgeon here, who held that office for eight (8) years with entire satisfaction to the authorities; and it reflects injuriously upon the efficient Contract Surgeons at the Watervliet and Frankford Arsenals.

Without detracting from the merits of the present Post Surgeon, Dr. McKee, who has been active in the matter, it is due to Dr. Hosmer to say that it is through no fault or neglect of his that a better system of sewerage does not exist at this post. The original report on the subject was made by him, and he pointed out that while the sanitary condition of the post was now good, the existence of numerous open cesspools endangered it, and he made efforts to effect the improvements needed.

Respectfully, your obt. servant,

F. H. PARKER,

Lt.-Col. Ord. Dept. U.S.A., Commanding.

[The editorial in question recognized previous reports on the sanitary condition of the Watertown Arsenal. It had not occurred to us that it would be interpreted as reflecting upon the Contract Surgeons. We had in mind especially the dilatoriness of Congress, and the difficulty of procuring congressional action upon such a matter as this.—ED.]

THE NEED OF A NEW HOSPITAL AT RAINSFORD ISLAND.

BOSTON, February 19, 1888.

MR. EDITOR,—The Directors of Public Institutions, in their report of a year ago, asked for an appropriation for a new hospital at Rainsford Island, in Boston Harbor. The request attracted no particular attention, and was passed over by the City Government. The Directors now renew it, and speak of the need in strong terms. As I have been a member of the Board, and know from personal observation how crying the need is, I am anxious to add my testimony, in the hope of awakening the attention of the profession, and of the community in general to this matter, so that it may not be ignored a second time.

The institution at Rainsford is for male paupers. The chief building is fairly good, but the hospital is outrageously bad. It is one of the familiar landmarks of the outer harbor, a caricature of a Grecian temple. I do not know how long it has been used as a hospital, but, unless I am greatly mistaken, for upwards of thirty years. It is old, unventilated, dirty, crowded, and absolutely repulsive. I do not think I am using too strong language in calling it a disgrace to the city. I have not been inside the building for some two years, but I am credibly informed that it has not improved during that time. When I was on the Board an effort was made to remedy the overcrowding, but the gain was not very great, and, I believe, not permanent. The building is so old and bad that any attempt at renovation would be a mere waste of money. A new building is needed. The Directors in their recent report speak plainly; but it is to be feared that if no general interest is taken in the matter they may again speak in vain. I am sure that if the public appreciate the state of affairs their

request will meet with the success it deserves. Common humanity demands better provision for the sick paupers.

THOMAS DWIGHT, M.D.

"FOURTH YEAR" GRADUATES HARVARD MEDICAL SCHOOL, 1886-87.

ALLSTON, February 18, 1888.

MR. EDITOR,—I notice in the *Boston Medical and Surgical Journal* of February 16th, on page 183, an editorial article entitled, "Annual Report of the Harvard Medical School, 1886-87," in which you state that the fourth year class of 1886-87 numbered twenty-one, that eleven of them applied for the degree, and that five received it.

I have before me the catalogues of the Medical School for that year, and also the last commencement programme, which contains a list of those upon whom degrees were conferred. I find on this programme, on page 6, the name of but one member of the above class, which seems to declare that he was the only one of that class on whom that degree was conferred.

I have a copy of the official report of examinations, as posted on the bulletin boards of the Medical School, which shows that but one man of the fourth year class, viz., No. 17, was properly entitled to the degree. Now, then, can the president report that five received it? As I was the No. 17, you will pardon me for calling attention to this statement. It is not justice to me that such a misleading statement should be published in so accurate a paper as the *JOURNAL*, and I am sure that if those who spend four years in working for a special degree are not to receive due credit for their work, it cannot be expected that others will spend their time in a similar manner.

I do not know the five to whom reference is made, but I do know that only one from my class was properly entitled to the degree.

I trust that this correction will find a place in your next issue.

Very truly yours,

E. SCOTT DOW, M.D.

[*The ipsissima verba* of the President's report were given in our editorial. If there be any error it is his. There seems to be a confusion between the fourth year degree, and the same *cum laude*.—ED.]

A CASE OF HÆMATURIA.

LOWELL, February 14, 1888.

MR. EDITOR,—A case of hæmaturia occurring in my practice may throw a little light on Dr. Beane's case, [*JOURNAL*, Feb. 9th, p. 148]. A man fifty years old came to me on account of finding blood in his urine. He had had the same trouble two years previous, and had been treated with ergot, tannic acid, etc., by our best practitioners without benefit. The first attack ended after a month's duration. The attack began four days before I saw him. Examination of the last urine showed nothing abnormal except blood and slight trace of albumen. Physical examination of patient negative. I concluded that the hæmaturia was functional, analogous to certain cases of nose-bleed, and decided to give him a general tonic and a renal stimulant. On the evening previous to his appointment with me he attended a Masonic supper, and took, contrary to custom, some rum pudding, which cured his hæmaturia completely, and prevented me from prescribing. He has remained well since.

Very truly yours,

J. ARTHUR GAGE, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING FEBRUARY 11, 1888.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diph. & Croup.	Diarrhoeal Diseases.	Scarlet Fever.
New York	1,481,920	740	318	20.58	25.06	9.94	2.80	4.06
Philadelphia	983,801	428	114	9.89	16.56	3.45	1.84	.69
Brooklyn	745,108	—	—	—	—	—	—	—
Chicago	725,000	—	—	—	—	—	—	—
St. Louis	420,000	—	—	—	—	—	—	—
Baltimore	417,000	165	49	9.76	17.08	.61	1.83	.61
Boston	400,000	213	64	9.40	23.38	4.23	.47	1.41
New Orleans	242,750	102	31	7.84	15.68	3.92	.98	—
Buffalo	225,000	—	—	—	—	—	—	—
District of Columbia	210,000	100	38	1.50	.50	.01	—	.02
Pittsburgh	210,000	66	28	7.60	28.81	6.08	—	—
Montreal	186,257	—	—	—	—	—	—	—
Milwaukee	170,000	69	33	21.75	10.15	11.60	—	—
Providence	121,000	—	—	—	—	—	—	—
Richmond	100,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,000	13	3	7.69	15.38	—	—	—
Charleston	60,145	36	9	5.56	5.56	2.78	—	—
Portland	40,000	24	9	4.16	—	4.16	—	—
Worcester	68,383	26	11	23.10	15.40	7.70	—	—
Lowell	64,051	32	12	15.65	25.04	9.39	3.13	—
Cambridge	59,660	24	7	4.16	20.80	4.16	—	—
Fall River	56,863	20	8	—	20.00	—	—	—
Lynn	45,861	12	4	16.66	25.00	8.33	—	—
Lawrence	38,825	25	12	8.00	24.00	—	—	4.00
Springfield	37,577	—	—	—	—	—	—	—
New Bedford	33,363	10	2	10.00	—	—	—	—
Somerville	29,992	9	3	29.22	33.33	22.22	—	—
Salem	28,084	14	1	21.42	7.14	14.28	—	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	9	3	44.44	11.11	11.11	—	33.33
Taunton	23,674	10	3	—	10.00	—	—	—
Haverhill	21,795	10	2	—	40.00	—	—	—
Gloucester	21,714	5	1	—	—	—	—	—
Brockton	20,783	5	2	20.00	20.00	20.00	—	—
Newton	19,759	6	1	—	—	—	—	—
Malden	16,407	4	1	—	—	—	—	—
Fitchburg	15,375	8	2	—	12.50	—	—	—
Waltham	14,609	3	1	—	33.33	—	—	—
Newburyport	13,716	6	0	—	33.33	—	—	—
Northampton	12,896	—	—	—	—	—	—	—

Deaths reported 2,402: under five years of age 783; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 277, acute lung diseases 425, consumption 285, diphtheria and croup 128, scarlet fever 42, diarrheal diseases 24, typhoid fever 25, measles 16, erysipelas 15, whooping-cough 14, cerebro-spinal meningitis 11, malarial fevers nine, small-pox (New York) one. From typhoid fever, Philadelphia 10, District of Columbia three, New York, Baltimore and Boston two each, New Orleans, Pittsburgh, Milwaukee and Nashville one each. From erysipelas, New York eight, Baltimore three, Boston two, Worcester and Lowell one each. From whooping-cough New York seven, Boston three, Philadelphia two, Baltimore and New Bedford one each. From measles District of Columbia seven, Baltimore four, New York three, Philadelphia and Lawrence one each. From cerebro-spinal meningitis, Worcester three, Philadelphia and Milwaukee two each. New York, District of Columbia, Lynn and Salem one each. From malarial fever, New York three, New Orleans two, Philadelphia and Charleston one each.

In 22 cities and greater towns of Massachusetts with an estimated population of 1,057,621, the total death-rate for the week was 22.50 against 25.16 and 23.87 for the previous two weeks.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending January 28th, the death-rate was 22.5. Deaths reported 4,056; infants under one year of age 904; whooping-cough 214, scarlet fever 61, measles 47, diphtheria 46, fevers 39, diarrhoea 32, small-pox (Sheffield 37, Leeds and Bristol one each.) 39.

The death-rates ranged from 14.3 in Brighton to 31.9 in Manchester; Birmingham 23.5; Bradford 15.9; Hull 20.6; Leeds 22.1; Leicester 21.7; Liverpool 21.1; London 21.1; Newcastle-on-Tyne 21.7; Nottingham 21.0; Sheffield 26.3; Sunderland 20.2. In Edinburgh 22.4; Glasgow 23.2; Dublin 33.1.

The meteorological record for the week ending February 11, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole, of the United States Signal Corps:—

Week ending	Barom-eter.	Thermometer.			Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.		
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Saturday, Feb. 11, 1888.																			
Sunday, ... 5	29.67	44.0	50.0	35.0	100.0	68.0	68.0	76.0	S. W.	S. W.	W.	12	14	6	C.	F.	O.	2	.11
Monday, ... 6	30.06	27.0	40.0	19.0	71.0	43.0	71.0	69.0	N. W.	N. W.	N. W.	18	12	9	C.	C.	C.	5	.02
Tuesday, ... 7	30.10	25.0	33.0	14.0	59.0	34.0	100.0	81.0	N.	E.	N. E.	4	6	5	C.	O.	R.	5	.02
Wednesday, ... 8	29.63	35.0	49.0	27.0	100.0	100.0	61.0	87.0	N.	N. W.	W.	8	3	18	G.	R.	C.	5	.02
Thursday, ... 9	30.00	14.0	32.0	7.0	63.0	44.0	78.0	62.0	W.	W.	W.	21	30	18	C.	C.	C.	6	.10
Friday, ... 10	30.35	7.0	14.0	1.0	71.0	82.0	79.0	97.0	N.	N.	N.	10	12	16	F.	C.	N.	24	.57
Saturday, ... 11	29.96	29.0	35.0	6.0	93.0	86.0	94.0	91.0	N.	N.	N.	15	16	16	N.	N.	N.		
Mean, the Week.	29.967	24.3	37.0	15.0				76.6										42	.82

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 11, 1888, TO FEBRUARY 17, 1888.

ARTHUR, WM. H., captain and assistant surgeon. Leave of absence extended two months. S. O. 35, A. G. O., February 13, 1888.

JARVIS, NATHAN S., first lieutenant and assistant surgeon. Ordered from Fort Lewis, Colorado, to Fort Leavenworth, Kansas. S. O. 30, A. G. O., February 7, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING FEBRUARY 18, 1888.

OLCOTT, F. W., assistant surgeon. Detached from the "Minnesota" and to the "Atlanta."

HEYL, T. C., surgeon. Ordered to the receiving-ship "St. Louis."

MARTIN, H. M., surgeon. Detached from "St. Louis" and to the "Swatara."

WEBSTER, CHAS. F., assistant surgeon. Ordered to the receiving-ship "Vermont."

FIELD, JAMES G., assistant surgeon. Detached from the "Vermont" and to the "Swatara."

WHITING, ROBERT, passed assistant surgeon. Detached from the "Iroquois" and to the Coast Survey.

TRACY, ELOKER C., assistant surgeon. Resigned, to take effect immediately.

SOCIETY NOTICES.

AMERICAN MEDICAL ASSOCIATION.—The Thirty-ninth Annual Session will be held in Cincinnati, Ohio, on Tuesday, Wednesday, Thursday and Friday, May 8th, 9th, 10th and 11th, commencing on Tuesday, at 11 A.M. A member desiring to read a paper before a Section should forward the paper, or its title and length (not to exceed twenty minutes in reading), to the Chairman of the Committee of Arrangements at least one month before the meeting. Committee of Arrangements, W. W. Dawson, Cincinnati, Ohio, Chairman.

WM. B. ATKINSON, M.D., Permanent Secretary.
1400 Pine Street, Philadelphia.

NORFOLK DISTRICT MEDICAL SOCIETY.—A meeting for Scientific Improvement will be held at the Hall of the Roxbury City Guard, 67 Warren Street, Roxbury, February 28, 1888, at 7.45 P.M. Communications: I. "Syphilis as a Cause of General Paralysis," Walter Channing, M.D. II. "Syphilis and Marasmus," James C. D. Pigeon, M.D. III. "Pathological Specimens," W. P. D. Bolles, M.D., S. A. Potter, M.D. Dr. H. R. Sedgman is expected to open the discussion of the first subject.

S. ALLEN POTTER, M.D., Secretary.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A Regular meeting of the Society will be held Monday, February 27, 1888, at the Medical Library, 19 Boylston Place, at quarter of eight, P.M. Dr. A. T. Cabot will show "A Series of Cases of Excision of the Ankle." Reader: Dr. Charles Harrington. Subject, "The Value of So-called Diabetic Foods."

F. B. HARRINGTON, Secretary.

DEATH.

Died in Cambridgeport, Mass., February 17, 1888, Charles Berwick Wellington, M.D., M.M.S.S., aged twenty-eight years.

BOOKS AND PAMPHLETS RECEIVED.

Traumatic Hematoma of the Larynx. By J. W. Gleitsmann, M.D., Professor of Laryngology and Rhinology in the New York Polyclinic. Reprint, 1887.

Hypertrophy of the Tonsil of the Tongue, with History of Cases. By J. W. Gleitsmann, M.D., Professor of Laryngology and Rhinology, New York Polyclinic. Reprint, 1887.

The Use of the Curette for the Relief of Hemorrhage Due to Uterine Fibroids. By Henry C. Coe, M.D., New York. Reprint, 1888.

The Significance and Localization of Pain in Pelvic Diseases. By Henry C. Coe, M.D., New York. Reprint, 1888.

An Analysis of Four Hundred and Twenty-two recent, unselected American Laparotomies. Tables Reprinted from First Volume, Pittsburgh Medical Review. Pittsburgh, 1888.

Report of the Commissioner of Education for the Year 1885-86. Washington Government Printing Office. 1887.

A Practical Treatise on Diseases of the Skin. By John V. Shoemaker, A.M., M.D., Professor of Skin and Venereal Diseases in the Medico-Chirurgical College and Hospital of Philadelphia. With colored plates and other illustrations. New York: D. Appleton & Co. 1888.

Original Articles.

POSTERO LATERAL SPINAL SCLEROSIS [GENERIC ORIGIN]; OR GENERIC ATAXIA.

A NAME SUGGESTED IN PLACE OF HEREDITARY ATAXIA OR FRIEDREICH'S DISEASE.¹

BY W. EVERETT SMITH, A.B., M.D., BOSTON, MASS.

The great desideratum in nomenclature as applied to diseases is that the name of each disease shall express the morbid condition involved and its situation. — *Flint's Practice of Medicine*.

Scientific nomenclature should be itself scientific, not founded upon accidents. However anxious we may be to honor individuals, we have no right to do so at the expense of the convenience of all future generations of learners. — *Gowers: Diagnosis of Diseases of the Spinal Cord*.

THE system of naming diseases after individuals or symptoms possesses so few advantages and leads to such misunderstandings and confusion in diagnosis that it cannot upon any ground be commended. How many general practitioners recognize, for example, in the columns of Türck, the anterior pyramidal tracts of the spinal cord, or in the columns of Goll, the postero median column, or in the columns of Burdach, the postero external column or under the name of the Romberg symptoms, the well-known inability of an ataxic person to stand without staggering when the eyes are closed? So too the disease first described by Friedreich and commonly called Hereditary Ataxia has been so little understood and so often confounded with the more common and pathologically speaking, less complex disease, locomotor ataxia, that I cannot help feeling that much of this inaccuracy and confusion is due simply to a faulty nomenclature.

A brief sketch of this nomenclature may prove instructive. Friedreich observing two ataxics in one family and four in another which seemed to him to present symptoms radically different from those ordinarily classed under the name of locomotor ataxia, reported them in 1861 before the forty-second meeting of German naturalists and physicians held at Spire but did not publish them until 1863. He classified them simply as degenerative atrophy of the posterior spinal columns. Meanwhile, however, Carre in Paris had published a record of seven cases of ataxia in a single family under the common, but in his cases particularly vicious, name of "progressive locomotor ataxia." And yet I grant there may seem to be some excuse for his term, since with a stronger element of direct heredity than have any other recorded ataxic cases, his patients unquestionably combined some of the classic symptoms of the ordinary locomotor ataxia. Following Carre came Topinard in 1864, Carpenter in 1871, Kellogg in 1875, and D'Arcy Power in 1882, all reporting family groups of ataxic cases under the names of locomotor ataxia and hereditary locomotor ataxia.

In 1882, also, Dr. William A. Hammond reported under the title hereditary locomotor ataxia, six cases, two in one family and four in another, which, however, instead of presenting symptoms of ataxia, as one might suppose from the title of the paper, presented no incoördination at all but only loss of motion in the legs. In commenting also upon Friedreich's cases, he says, "the first symptom observed was weakness of the lower extremities, and this gradually extended so as to involve the upper extremities. Here was, there-

fore, a true paralysis." This I take to be an entire misinterpretation of Friedreich's cases, so that while there may be good reasons for the conclusion that Friedreich's cases were not locomotor ataxia, I fail to see why Hammond's cases should be classed as ataxics of any form since in no instance are they recorded as presenting the slightest trace of any incoördination of movement.

Now although it is true, as Ormerod has said, that there have been cases of Friedreich's disease, so-called, where paralysis of the lower limbs has been reported, "in no case has it been observed until the disease had existed for a period of years, and in some very carefully observed cases there has been no paresthesia at all, but simply ataxia. Again, although in some cases diminution of sensibility has been noted, it is usually for the earlier periods, in quite an insignificant degree, and in many cases every abnormality of sensation has been thoroughly excluded. We have, therefore, in this disease an illustration of ataxia pure and simple, apart from motor or sensory paralysis."

Clinically speaking, the difference between the classic locomotor ataxia and the so-called hereditary ataxia may be distinctively arranged into three general groups. In the first place, ordinary tabes does not run in family groups, while Friedreich's disease clearly does. Yet the cases are few where, even in the latter disease, a strict heredity can be claimed. It attacks, as a rule, members of the same generation in the same family, although occasionally successive, as well as simultaneous, outbreaks have been observed in the same family, as, for example, in Carre's cases, where the mother of the seven ataxic patients, her brothers and sisters to the number of eight, and her mother were all ataxic; in Brousse's case, where the mother was ataxic; in one of Rüttemeyer's cases, where a male ancestor five generations back was ataxic; and in my series of cases,² where the father of the five affected girls clearly developed the disease late in life. More often, however, a remarkable proclivity to other forms of disease has been observed in these family forms of ataxia: "on the side of the nervous system, to chorea, paralysis, hysteria, mental affections, intemperance; on the side of general diseases, to phthisis."

Secondly, ordinary tabes is a disease of middle age or of later life, while the family form of ataxia develops usually in early childhood. Friedreich held that its development was connected with the changes of puberty, and that females were particularly prone to it; while Ormerod believes that the onset of an acute disease may have a possible influence in its production. The disease is unquestionably due to a lack of proper development of the nervous elements of the cord and their consequent atrophy, and it is worthy of notice that the ataxic families are generally large, so that it may be that the rapid production of children may have caused an imperfect development of some of them. At any rate, enough cases have now been reported to show that sex has nothing to do with either the development or the occurrence of the disease.

Nor do I believe that puberty is a potent or a common cause.³ The majority of cases thus far reported began to show an evident lack of development at as early an age as five or seven years, and I very much

¹ Suggested by the writer at a meeting of the College of Physicians, Philadelphia, February 1, 1888, which he attended by the invitation of Prof. Wm. Osier.

² Boston Med. and Sur. Journal, October 15, 1885, p. 361.

³ Boston Med. and Sur. Journal, February 16, 1888, p. 175.

suspect that if these cases had been more carefully watched, they would be found never to have been as steady in their movements as were other children. At the age, however, when they would naturally begin to romp and run, the parents may possibly observe that they cannot carry themselves as well as their playmates can, but, think little of it perhaps, until the onset of an acute disease, or the extra demands which puberty makes upon the system has allowed the incoordination to develop to such an extent that it can no longer be unnoticed.

Thirdly, the absence of sensory derangements in the hereditary forms of ataxia is of great diagnostic value. In typical tabes, as is well known, the lancinating pains are usually a prominent symptom, especially in the early stages, and are rarely absent throughout the entire history of the disease, while other sensory disturbances, such as numbness and local anæsthesia, frequently accompany the incoordination of movement. But in the majority of cases of family or 'hereditary' ataxia pain is conspicuous by its absence, until at least, the disease is very far advanced, although it is true that cases have been observed, such as those of Carre and Dreshfeld, where it occurred as an initial symptom. The absence of the knee-jerk is, indeed, common to both of the forms of ataxia which we are discussing, but the curvature of the spinal column, which occurs so early and so markedly in the family form of the disease, does not belong to the history of locomotor ataxia. Another critical diagnostic symptom is the affection of the speech in the hereditary form of ataxia. "From a mere drawl, stammer, undue confluence, or undue separation of syllables, the affection may advance till speech becomes wholly unintelligible."

The highest level to which the hereditary disease extends is marked in its clinical aspect by the symptom of nystagmus. Bilateral and transverse in its action, it is observed only when the patient looks at or follows an object intently. Being a very late symptom, its absence in a given case need not tell necessarily against the diagnosis of the family form of the disease. Bed-sores and visceral disturbances never occur, as they so commonly do in locomotor ataxia.

Seeing, then, how marked the contrast is between the two diseases, it is not in the least surprising that some authors should have denied altogether the existence of relationship between them. Thus, on the one hand, Hammond maintains that Friedreich's cases are not examples of primary disease of the cord at all, but of disease of the medulla or cerebellum, extending secondarily to the cord; while, on the other hand, Vulpian, Charcot, and Bourneville regard them to be simply a variety of disseminated sclerosis. Although the affection of speech and the nystagmus would seem to lend some plausibility to the latter theory, the morbid anatomy of the cases, as revealed by autopsies, must be our final test, and by this we find conclusively that the disease is spinal, and not cerebral, in its origin; that whatever cerebral degeneration there is, is late and entirely secondary in its development; and that, moreover, the spinal sclerosis is systematic, and not disseminated, in its character.

Nor does the suggestion of Erb that cases of tabes may be grouped under two types, the classical type and the type described by Friedreich, seem entirely appropriate when we come to look at the pathology,

although the occurrence of forms apparently transitional between the two, may give some reasonable support to the idea. Such cases are those reported by Carre, where there was a well-marked affection of the speech, and a distinct heredity, yet where the disease began with pains and numbness in the legs and feet, and those reported by Dreshfeld where there were pains from the onset, and no affection of the speech reported. In three of Friedreich's own cases, also, these early pains were noticed, and in Powers' case there appear to have been vomitings at an early period. Other aberrant forms are the two cases of Seeligmüller which Friedreich refused to recognize as of the same type as his own cases, chiefly because of some mental peculiarities and the persistence of the knee-jerk.

The disease first described by Friedreich does indeed differ so materially from the classic locomotor ataxia as to deserve and demand a separate classification and a distinctive name, but as it seems to me, not in the manner I have just outlined. The autopsies which have been made are unfortunately few. Deaths have occurred as a rule from some intercurrent disease and rarely, if ever, in the early stages of the spinal degeneration. Our pathological knowledge therefore rests entirely upon eleven post-mortem examinations (Friedreich, four; Schnltze, one; Kahler and Pick, one; Brousse, one; W. E. Smith, one; Gowers, one; Rüttemeyer, two; but these fortunately agree in the main upon several essential points.

In all of them there has been found an atrophy and degeneration of nerve-fibres throughout the entire length of the posterior columns, especially in the dorsal and lumbar regions, a similar, although less marked process in the lateral columns, affecting the periphery of the cord in the lumbar region chiefly, together with a degeneration, to a certain varying extent, of the anterior columns in the neighborhood of the median fissure in the cervical and dorsal regions. The posterior nerve-roots were also diseased but the anterior were relatively healthy. The meningeal mantle of the cord was somewhat thickened and the cord itself diminished in size. In Brousse's case and in my own, there was a well-marked inflammation of the central canal which was full of small, deeply-staining cells. Upon this Brousse lays great stress, considering that by this means, the disease spreads from the posterior columns to the other parts of the cord. He holds that the sclerosis of the posterior columns is primary and systematic, while the sclerosis in other parts is secondary to it and diffuse, that is, not limited to nor propagated along particular tracts of fibres.

A careful study of the cord will, I think, convince every one that the sclerosis of the posterior columns is indeed primary, while that of the lateral and anterior columns is secondary to it. But I cannot grant that this secondary degeneration is diffuse in its character. On the contrary, in all the sections which I have examined from this disease, the degeneration is clearly limited to and propagated along definite, systematic tracts of fibres.

To settle the point decisively whether the spread of the degeneration has taken place by simple contiguity, by meningitis, or by the medium of an inflammation extending along the central canal, we need, as Ormerod suggests, further examinations, and especially examinations at early stages of the disease. My opinion is, however, that it extends by means of a meningitis.

We have seen that the disease under consideration occurs distinctively in family groups, yet is rarely hereditary in the strict acceptance of the term, and we have studied its accurately-determined clinical and its fixed pathological peculiarities. We have seen, too, that the names commonly applied to the rare affection are both confusing to exact diagnosis and undesirable as scientific terms. The disease may, however, be fairly and distinctively represented by the degenerations which occur in the posterior and the lateral columns. The name I therefore present for consideration as an exact, pathological and altogether more appropriate one than any of the names now commonly applied to the disease, is "Postero Lateral Spinal Sclerosis of Generic Origin." With such a nomenclature as this, we can clearly and intelligently contrast and compare the disease both with posterior spinal sclerosis (locomotor ataxia), and with other forms of spinal degeneration. As a colloquial term for ordinary use, moreover, I would suggest "Generic Ataxia." And I have chosen the name "Generic" because it seems to me to convey fully the idea of a family grouping, and if we please, family transmission, without involving the vexed question of a strict inheritance from ancestor to descendant. The term "Sclerosis" I adopt, it should be said, under a mild protest, since it does not seem to me an altogether happy term. Its rejection, however, would involve a complete revision of the accepted scientific nomenclature of nervous diseases.

THE VALUE OF WALL-PAPER GUARANTEES.

BY CHARLES HARRINGTON, M.D.,
Instructor in Hygiene and Assistant in Chemistry in the Harvard Medical School.

In the discussion of a recent report of a case of poisoning from arsenical wall paper read by Dr. W. E. Smith before one of the sections of the Suffolk District Medical Society, the question was asked as to "what degree of reliability may be placed on the testimony of paper manufacturers, or dealers, as to the absence of arsenic in their manufactured fabrics." To this question it may be answered that the degree of reliability of such testimony depends greatly upon the character of the person or firm giving it, upon the character and ability of the chemists employed for the analysis, and upon the amount of mental reservation which may be made at the time of sale. There are business houses in this city which, when requested, and frequently without solicitation, give an absolute guarantee that the papers sold are either strictly non-arsenical, or contain insignificant, harmless traces. These houses, as a rule, employ competent, reputable chemists, upon whom the responsibility for the accuracy of the analysis rests. There are others who give their patrons, in place of a guarantee, a statement that their goods are all examined by their chemists, and are perfectly safe; the value of which statement is not clearly perceptible.

Some dealers when asked for a guarantee, reply that the papers are guaranteed by the manufacturers, which statement is usually sufficient to relieve the intending purchaser of all doubt. When, however, after some time, symptoms attributable to arsenical poisoning appear, and the papers are found to be highly arsenical, and the innocent purchaser demands redress of the dealer, he is very likely to be informed that

the papers were guaranteed, not by the dealer himself, but by the manufacturer, to whom (in another State, or in a foreign country) the victim must apply. There are others who treat inquiries as to safety with withering contempt, descent upon cranks and other offensive persons, show themselves as lusty specimens of manhood brought up in the business, handling the alleged poison day in and day out without the slightest injury, and frighten their customers, who may not wish to be considered imbeciles into buying without a guarantee of any sort.

But even the honestly made guarantee of a reputable dealer is not always safe from a sanitary, though perfectly so from a pecuniary point of view. It has happened not infrequently in the experience of several of our most reputable dealers, that they have been obliged to suffer extensive pecuniary loss in replacing papers sold on the certificates of incompetent chemists. In fact, one of these dealers informed the writer that the worthless certificates of a certain chemist had cost him more than five hundred dollars in a single house.

But what about the "manufacturers' guarantees," about which one hears so much? It is perfectly obvious that to the individual purchasing through a retailer such guarantees are hardly worth the effort of demanding them. But, it may be said, the dealer may demand a guarantee of the manufacturer, and then give his own to the customer. This is precisely what is done in certain cases, and not always with advantage to the dealer; for, having given his personal guarantee, he is bound for the sake of his own reputation for honest dealing, if indeed for no other reason, to make good any loss to the customer, while at the same time he may be left in the lurch by the manufacturer, who may refuse to accept any certificate of analysis presented by the dealer, or meet the same with another of different, and it is needless to say, more favorable import. Illustrative of this point the following case may be related: Some months ago a well-known house in this city, with a reputation for fair dealing, imported from England under a "manufacturer's guarantee" a large lot of expensive papers, samples of which, on the arrival of the goods, were submitted to the writer for analysis, with the result that eight of the papers were condemned. Upon this the manufacturers were notified that the paper must be taken back; but they were equal to the emergency, as the following letters will show. The names of the dealers on both sides are suppressed for obvious reasons.

LONDON, S.W., May 25, 1887.

MESSRS. ———, Boston, America.

Dear Sirs, — Since writing you on the 5th inst., we have submitted the eight samples of wall-papers that you describe as arsenical to Prof. John Atfield, one of the highest authorities as a practical chemist in London (who has preserved the test-tubes), and he pronounces each to be free. We send copy of his report. Professor Atfield is the chemist employed by Messrs. ———, and his examinations may be considered as perfectly reliable. . . . Our colors are bought under a guarantee, and the red color of which you complain was manufactured by Lewis Berger Sons, Ltd., under a guarantee. We thoroughly believe that these papers are non-arsenical in the ordinary sense of the term.

We trust, under the circumstances, you will have every confidence in the goods, and find a ready sale for them.

We remain, yours respectfully, ———

The report on the eight samples which accompanied the above was as follows:

REPORT OF AN ANALYTICAL EXAMINATION FOR ARSENIC, IN EIGHT SAMPLES OF MESSRS. WALL-PAPERS.

BY PROFESSOR ATTFIELD, PH.D., F.R.S., F.I.C., F.C.S.,

Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain, Author of a Manual of Chemistry and a Handbook on Water Supplies, etc.

LONDON, 17 Bloomsbury Square, W.C.,
May 13, 1887.

The samples were marked as follows: Iberia, 60,500; Monkshood, 60,334; Coniston, blue, 60,474; Wentworth, on white, 58,572; Wentworth, on yellow, 58,572; Brandon, 60,063; Chatsworth talc, 60,156; Malines, 60,144.

Not one of these samples is an arsenical wall-paper: that is to say, not one of the pigments or color-giving substances on the papers is arsenical, and the paper itself of these paper-hangings is not arsenical.

Pseudo-sanitarians sometimes report non-arsenical wall-papers as containing some ridiculously minute trace of arsenic. These alarmists might just as truly report some samples of common table salt as containing arsenic, for the delicacy of certain of the tests for arsenic is so great that traces can be detected in many things. But such traces are absolutely without significance from any sanitary point of view, either in salt, wall-paper, or anything else. Arsenical wall-papers have well-defined arsenical characters, were formerly common, and may now occasionally be met with. Neither of these samples is an arsenical wall paper.

(Signed) JOHN ATTFIELD.

Accompanying this report was a printed circular setting forth that "every care is taken to produce papers that are quite free from injurious compounds," etc., etc., and containing copies of reports by "two eminent authorities" that certain papers, including some of the above mentioned, are free from arsenic.

The letter, accompanied by such a report from so distinguished an authority, could not but have a deterring influence on the Boston house. But in spite of the warning against the baleful influence of all pseudo-sanitarians and alarmists, the papers were again submitted for analysis, and again were they condemned. The condemnation, on the one hand, and the refusal to receive the papers back on the other, left the dealers but one course to pursue, and that was to sell the papers as arsenical. So much for the value of a "manufacturers' guarantee."

The remarks concerning pseudo-sanitarians made by the distinguished London chemist in his report show that the English conception of pseudo-sanitarians is somewhat different from ours. Our pseudo-sanitarian is prone to find no arsenic where it may exist, though he may, if reasonably skilful and employing pure chemicals, find it where it is not. But with absolutely pure chemicals and clean apparatus it would be extremely difficult, and indeed impossible, to detect even traces of the poison in substances where it does not exist, no matter how much of a pseudo-sanitarian one may be. In order to clear up the matter of accuracy, the writer forwarded samples of the papers in question to Professor Henry B. Hill, Professor of Chemistry, Harvard College, Cambridge, and to Dr. Charles R. Sanger, Professor of Chemistry in the United States Naval Academy, at Annapolis, Maryland, with requests for quantitative estimation of the arsenic, if any were found to be present; at the same time undertaking the same estimation himself. In their reports to him the writer is informed that

none but absolutely pure chemicals were used, and that blank experiments with the apparatus used resulted in blank results. In the following table may be seen the results of all the chemists concerned:

Name of Paper.	Manufacturer's No.	Amount of Arsenic in grs. per sq. yd.			
		Hill	Sanger	Harrington	Attfield
Chatsworth talc	60,156	4.66	4.68	4.40	0.00
Brandon	60,063	0.85	0.73	0.90	0.00
Malines	60,144	0.93	0.13	0.82	0.00
Iberia	60,500	0.63	0.71	0.78	0.00
Coniston, blue	60,474	0.21	0.23	0.18	0.00
Monkshood	60,334	0.12	0.04	0.14	0.00
Wentworth, on white	58,112	0.10	0.08	0.13	0.00
Wentworth, on yellow	58,172	0.21	0.22	0.22	0.00

It is, it must be conceded, somewhat remarkable if the papers are non-arsenical that the results of the three American chemists should bear such a close resemblance. The results are not in absolute agreement, it is true, but the slight differences are doubtless due in part to the fact that the papers are figured, and in part to the universally recognized possibility of chemical fallibility.

It is interesting to note that all of these papers contain more than the permissible limit recommended to the National Health Society of England by its committee, which was composed of men whom we in America recognize as true sanitarians—Professor F. de Chantmont, H. C. Bartlett, and Charles Heisch.

What is the value of a guarantee? The writer trusts that it has been made clear that it depends upon the guarantor.

ANTISEPTIC MIDWIFERY.¹

BY H. F. ADAMS, M.D., NEWBURYPORT, MASS.

THE recent progress of medical knowledge towards that precision and completeness which shall justify the term scientific medicine, has in no direction been more encouraging than in that of the study of bacteriology.

No more promising field has ever been entered, and now, even in the infancy of the study, the results are brilliantly successful. At last we can see, in some diseases at least, the mysterious and dreaded primary cause of the pathological changes which we seek to cure.

A most remarkable illustration of the fact that practical results must follow the modern keen and searching investigation into this formerly hidden department of natural history, is presented to us in the now generally accepted views regarding puerperal septicaemia, its prophylaxis and its treatment.

The old puzzle of puerperal or child-bed fever is now solved. Only a very small and constantly diminishing number of obstetric authorities still refuse to believe that this fearful scourge of the past, second in its deadliness, among women of the child-bearing age, only to tuberculosis, is simply septicaemia, attacking the wounded lacerated parturient, as it does the surgeon's patient, solely through local infection from external sources of contagion.

Forty years ago, Semmelweis, of Vienna, after magnificent reasoning upon facts under his keen and close observation, proclaimed the absorption of septic

¹ Read before the Essex North District Medical Society, January 4, 1888.

matter to be the cause of this disease. His conclusions, ridiculed and rejected then, only needed the light of the bacteriological knowledge of this later day to force acceptance.

The ideas of medical men regarding puerperal fever have been very varied and very vague. Physicians who have often seen, in their practice, severe "milk fevers," "milk legs," lymphadenitis, cellulitis, metritis, peritonitis, abscesses, pericarditis or similar inflammatory febrile complications of the puerperal state, have gravely stated that they never met with puerperal septicæmia. Often, indeed, has the nature of child-bed fevers been entirely overlooked, and some typhoidal state, or nervous condition, or malarial poisoning, or exposure to cold, been considered the cause of the sad results.

But at last the light has come. The reason for the terrible mortality from these mysterious and dreaded fevers has been discovered. And better still, with the new knowledge has come the successful method of prevention; a simple means by which such fearful records are now matters only of history.

The investigations of Pasteur into microbic life, and the consequent reform in surgery based upon the views and practice of Lister, inspired in obstetricians, who accepted the teachings of Semmelweis, earnest endeavors to secure similar prophylaxis in midwifery. So slow has been the progress that many have doubted the soundness of the new theories. Discussions upon the nature of puerperal fever, like the one in the Obstetrical Society of London, in 1875, have shown great diversity of belief, and many of our text-books yet teach in a guarded and even doubtful way. Practical duty has constantly arisen from the inefficiency or harmfulness of antiseptic measures used, and for a time the results, though encouraging, were after all, only indifferently successful.

The investigations of Dr. Robert Koch in 1879-80, upon bacteria and germicides, are to be remembered as a most important advance. From that time carbolic acid, then generally used in obstetric practice both in Europe and America, has been gradually superseded by the more powerful and convenient antiseptic, bichloride of mercury. And the methods of its use have been much improved, under the stimulus furnished by that concise knowledge of the parasitic or germ origin of this disease, for which, also, we are largely indebted to the same eminent Dr. Koch.

What particular variety, or varieties, of bacteria are the dangerous ones, we do not yet definitely know. But that some form of microbe is responsible, no longer admits of doubt.

Dr. H. C. Ernst, instructor in bacteriology at the Harvard Medical School, has furnished a clear statement of our present knowledge, for a paper by Dr. William L. Richardson, professor of obstetrics in the Harvard Medical School, published in the *Boston Medical and Surgical Journal*, for January 27, 1887. I quote a few selected sentences:

"A woman passing through the puerperal state with no untoward symptoms, has never been found to have bacteria in the system, whilst those attacked by 'puerperal fever' are invariably found to have bacteria in the tissues, bloodvessels or lymphatics of the affected part." . . . "The vagina contains bacteria in health, like the mouth, and like the bacteria in the mouth, those in the vagina do no harm." . . . "It is only by the entrance of pathogenic bacteria that a dis-

turbance is produced." . . . "The first condition necessary for the hurtful activity of bacteria to become manifest, is that there should be a solution of continuity, a wound of the skin or mucous membrane." . . . "The bacteria make their way in from outside. They are not born from nothing in the uterine tissues. There is no spontaneous generation about it." . . . "The problem is unquestionably how to keep the bacteria out of the body. Without them there will be no puerperal fever or septicæmia."

This statement, defining the positive knowledge of to-day, and not based upon theories simply, is worthy of thorough comprehension, and vivid remembrance. A complete acceptance of its teaching, aided by the powerful stimulus given by the fearful history of puerperal fever in the past, must give to every physician a lively sense of personal responsibility in the care of all confinements. Viewed from this position, how easy it is to see the origin of the deadly poisoning in cases previously inexplicable. The lacerated surfaces of the uterus and vagina after parturition present wounds typically dangerous for harmful absorption. Retained blood-clots, fragments of placenta or injured and dying tissue, furnish the best of soil for the propagation of septic germs.

Some unobserved collections of dirt, in creases of the skin or under the finger-nails of the physician or nurse, or upon the instruments or towels used, harbor the invisible bacteria. These become dissolved off during some slight manipulation, and the inoculation is done. Or perhaps the faithful efforts of the nurse to secure cleanliness, by bathing the patient's genitals with a common sponge or by giving vaginal douches with an apparently clean syringe, serve to communicate the subtle germs to the soil so especially adapted to their growth in rapidly spreading colonies.

Strict methods for preventing such infection are now almost universal in the Maternities abroad.

To Paul Bar, of Paris, is due much credit for the development of the technique of protection. A translation of his work, "Antiseptic Methods in Obstetrics," was published in Philadelphia in 1887.

In this country, great success has followed the adoption of these measures in the lying-in hospitals of our medical centres. In New York, Dr. H. J. Garrigue, in October, 1883, introduced the present method in the New York Maternity, and the mortality from septicæmia fell at once from over 6% for the preceding year to 0.59%. And for the following years, 1885 and 1886, it was only 0.02%. He has published explicit details in a small hand-book on "Antiseptic Midwifery." Lusk, in his classical work on midwifery, states that since adopting efficient antiseptics in the New York Emergency Hospital in 1883, there has been no death from sepsis up to the date of his last edition, May, 1885. Also, there has been a nearly uniform absence of even trivial temperature variations. He, in common with other antiseptists, now considers the so-called "milk fever" pathological and of septic origin. Dr. Robert Kocher, of New York, published, in 1886, a valuable work entitled "Puerperal Convalescence and the Diseases of the Puerperal Period," in which he treats ably of the principles and practice of antiseptic midwifery, his views growing largely out of the accepted practice of the Vienna Lying-in Hospital.

In Boston, in October, 1885, Dr. William L. Richardson, in the Boston Lying-in Hospital, introduced

practically the same measures as those so successfully used by Garrigues. The results are shown best by these charts, from the paper by him, already referred to.² The mortality for the year 1886 from septic diseases was nothing.

In Philadelphia, Dr. B. C. Hirst, although omitting the pad, is carrying out essentially the same antiseptic plan, in the Maternity Hospital. From May, 1885, to May, 1887, there was only one death from septicaemia, and this occurred before the thorough adoption of the system now in use.

Facts like these, from such authorities, justify the statement that confinement is now less dangerous to the diseased and miserable women of our charity hospitals, under strict antiseptics, than to healthy patients supplied with luxuries in comfortable homes, if treated upon the old plan. To appreciate something of the greatness of the advance, it is only necessary to compare the percentages of mortality just given with those of earlier years. Playfair says that in London, in 1760, 1768, and 1770, in some lying-in institutions, nearly all the patients died. In the Edinburgh Infirmary, in 1773, "almost every woman was seized with it, and all of them died." In Paris, Berlin, and Vienna, periods of a year at various times in the first half of the present century, gave mortality records, in hospitals, of more than 15%.

When Semmelweis announced the true nature of puerperal fever in 1847, the mortality in the Vienna Hospital was seldom less than 10%. Nearly twenty years later, the elegant Lariboisiere Hospital in Paris, while new, had an average mortality of almost 8%. At the same time, in the Paris Maternity, it was 10% for a period of nine years. For the following nine years, under Tarnier's efforts by the use of antiseptics, it fell in this same institution to 3.7%. To-day, in Germany and France, the mortality in hospitals is only a fraction of one per cent.

The method of application of the principles of antiseptics to the conduct of labor is really very simple, as carried out by leading obstetricians to-day. Good ventilation is, of course, insisted upon. Thorough cleanliness of the room, bed, and all attendants, is important. In hospitals and in private practice among the lower classes, the patient should be given a preliminary full bath. The rectum should be emptied by an enema of soap-suds. The external genitals, genito-femoral grooves and anal folds, thighs, and lower abdomen, are to be carefully washed with a solution of bichloride of mercury in water, strength 1-1000. This solution is most conveniently made by carrying in the obstetric bag a box of powders, each containing 1 gm., or gr. xv, of corrosive sublimate, and dissolving one of these in one litre, or one quart, of hot water. The hands of both physician and nurse must be thoroughly scrubbed with plenty of soap, using a stiff brush about the nails and the creases of the skin. When apparently perfectly clean, they must be washed, or soaked, in the above solution for, at least, one minute. This use of the disinfectant must be repeated previous to every examination or manipulation in the genital region. If instruments are called for, they are best cleansed in a saturated or five per cent. solution of carbolic acid just before use. The mercury solution corrodes and injures them. For lubrication of hands or instruments, an ointment composed of one part oil of eucalyptus and seven

parts vaseline, is recommended by Dr. Richardson. Dr. Garrigues uses nothing at all, except when introducing the whole hand or using instruments. For these he recommends glycerine, with three per cent. of carbolic acid.

During the first stage of labor, before making any digital examination, the vagina should be thoroughly disinfected by an injection of the corrosive sublimate solution, diluted to 1-3000. About three pints is a proper quantity. It should be given upon the back, in order to distend the folds of the vagina, and to reach, thoroughly, the upper parts. It is well to have the patient sit up or turn upon the side immediately afterwards, that no quantity may be retained in the vaginal pouch. If the labor is prompt and perfectly natural, no further injection is needed; but if the first stage is very much delayed, the douche should be repeated from time to time, in order to secure asepsis of the canal during the second and third stages of labor.

During the second stage, the external genitals and region about should be kept perfectly clean; all blood, urine, or fecal matter being carefully removed by means of pieces of absorbent cotton or charpie dipped in the prepared solution. The removal of the placenta should be by Crede's method, more than usual pains being taken to avoid unnecessarily passing the hand or fingers into the vagina. It is of great importance to secure subsequent firm uterine contraction. After delivery is complete, the woman is to be thoroughly cleansed externally, using the disinfectant. Any perineal rupture should be sought and closed at once with antiseptic sutures. No post-partum injections are advised, except after instrumental or manual interference. In such cases, as an additional safeguard, a vaginal douche may be rapidly given. If fœtus or placenta be decomposed or offensive, an intra-uterine injection is necessary. For these uses, a weaker solution, 1-4000 or 1-5000 will prove sufficient. Stronger solutions have caused poisoning, being absorbed by the fresh vaginal lacerations. It is desirable to wash out the last of the corrosive sublimate by a small quantity of two per cent. carbolic acid solution.

There has been some difference of opinion as to the best plan of dressing the external genitals after labor. Some advise and use nothing whatever, simply spreading disinfected cloths underneath to absorb the lochial discharge.

But the latest and best method is the use of the occlusion dressing, or the antiseptic pad. The object of this is to seal the entrance to the vagina and uterus, by a germ-proof protective, against the attacks of septic bacteria from the air or other external objects.³ These pads are found by experience to be easily prepared and not very expensive. They give the greatest comfort to the patient from their warmth, softness, cleanliness, and support, and they absolutely prevent all disagreeable odor.

It is now generally believed that all danger from septic diseases, contagious diseases, autopsies, etc., occurring in the physician's practice, may be removed by sufficient thoroughness in disinfection of the person, clothing, and other carriers of infection, previous to entering the lying-in room. Many conscientious practitioners have, for a long time, felt bound to

² See Boston Medical and Surgical Journal, January 27, 1887.

³ For the method of making and using the pad, see Journal, Vol. CXVI, p. 76.

decline all midwifery practice during attendance upon cases of erysipelas, scarlatina, diphtheria, typhoid fever, etc. The masterly pioneer work done by Dr. Oliver Wendell Holmes in 1843, in his paper, "Puerperal Fever a Private Pestilence," proved too convincing for their peace of mind when any fever among their patients followed disregard of his wise caution. If for no other reason than the safeguard it offers against the annoyance and anxiety caused by these dangers, which exist in every physician's practice, we should welcome the new method.

The measures best adapted to destroy the septic germs, when once they have unfortunately gained a foothold during the puerperium, I have not time to discuss. But for treatment of cases of puerperal septicæmia demanding intra-uterine disinfection, I wish to call special attention to a new method free from the dangers of injection of liquids, and apparently much more effective. I refer to the use of Ehren-dorfer's pencils of iodoform, described and recommended in the last edition of Lusk. Dr. Richardson's method of treating infected puerperæ includes the placing of one or more of these intra-uterine pencils, followed by a free sprinkling of the vagina with iodoform powder. Usually the temperature falls at once, and the patches of diphtheritis, if present, disappear, and no further applications are needed; this, of course, in cases of early detected infection. I am aware that experiments have seemed to prove the feeble germicidal power of iodoform, but here, as in venereal and surgical practice, I think the clinical evidence should outweigh that from the laboratory.

To the statements and position of this paper, some may say: "All is very clear and very well so far as hospital practice is concerned, but such recommendations are entirely uncalled for in private practice in healthy country homes." To these physicians I would quote the words of Dr. T. G. Thomas before the New York Academy of Medicine, in December, 1883: "My observations as a consulting physician convince me that in private practice, even among wealthy patients, who can command every safeguard, there exists a want of system and apathy as to preventive measures which borders very closely upon criminality."

I am very sure that this strong statement now finds support in the views of leading obstetricians of Germany, France, England, and America. The same belief is admirably and forcibly expressed in the excellent book by Kucher, of New York, already referred to. Failure to correctly interpret the symptoms of sepsis has given a false sense of safety. I myself have seen, within a year, two cases of grave puerperal septicæmia with alarming symptoms, whose true nature had not been suspected by the physicians in charge. Who can doubt that the statistics which show such scarcity of this disease in private practice are worthless from the existence of mistaken beliefs, ignorance, or carelessness in diagnosis?

I believe it to be the duty of every accoucheur, not only to carry out the essentials of the antiseptic method most conscientiously in his practice, but also to visit his patient daily during the first six or seven days of the convalescence. This is necessary, not only to make sure, as Lusk puts it, that the patient is not made the victim of the traditions and superstitions of the monthly nurse, but also in order to see that the

directions for antisepsis, previously given, are obeyed, and also to watch the temperature, the pulse, and the progress of uterine involution, that the earliest symptoms of septic infection may be detected.

RECENT PROGRESS IN LEGAL MEDICINE.

BY F. W. DRAPEE, M.D.

THE LEGAL RIGHTS AND OBLIGATIONS OF MEDICAL MEN.

Professional Secrecy.—In Great Britain, and in most of the United States, the law recognizes no obligation on the part of medical men to guard as sacred the information which is imparted to them in confidence by their patients. Practitioners of law are the only persons in these States who are not compelled to impart confidential communications, when the courts call for testimony under oath. In Arkansas, California, Indiana, Iowa, Michigan, Minnesota, Missouri, Montana, New York, Ohio, and Wisconsin, physicians are permitted by statute to keep under their own control such facts of a medical nature as have been intrusted to them in the privacy of the sick room, but elsewhere in the United States physicians have no such privileges.¹

In France, and in most continental countries, however, this state of things does not obtain. There the medical man, instead of being punished for contempt of court if he persists in keeping inviolate his patient's confidences, is held accountable for just the opposite course; and the wise aphorism of Hippocrates that whatever information is acquired by the physician in, or even outside, the exercise of his profession should be regarded as an absolute secret, has passed from a tradition or custom into a statute law, with penalties attached to its infraction. To this law (although the statute itself is absolute) there are some exceptions in practice, the medical practitioner being absolved by the judge from the provisions of the statute when he knows of plots against the State, or against the life or welfare of individuals; cases, for example, of poisoning, abuse of children, or criminal abortion. The general principle which governs these exceptions is that the first duty of a physician is to protect his patient, and if the patient is being poisoned, or, as a child, is ill-treated, the medical attendant owes it to his patient to require the help of the law in preventing further damage.

Professor Brouardel has very fully discussed this subject in a work which presents the matter from the point of view of the French practitioner.²

The subject of the obligation of medical men to keep professional secrets has engaged the attention of Italian physicians also,³ and at the last meeting of the Italian Medical Association, Professor Guclfi spoke forcibly on the subject, declaring that there are cases in which the physician is bound to preserve absolute secrecy, even if he is summoned to testify in court, and even if he is excused from the obligations of secrecy by the parties interested, for example, in divorce suits, for adultery with syphilitic infection by one or the other of the two persons contesting. There are other

¹ A Manual of Medical Jurisprudence. By Marshall D. Jewell, M. D., LL.D., 1887.

² *Le Secret Médical*, par Dr. P. Brouardel, Professeur de Médecine Légale, 1887.

³ *La Semaine Médicale*, Sept. 28, 1887.

cases in which the attending physician ought not to keep silence; because in them the public social welfare is of greater moment than the individual interest; for example, an investigation relative to the health of a betrothed woman, or in epidemics, injuries by violence, cases of poisoning. In these cases the physician indeed should take the initiative in disclosing the facts. In short, according to Guelfi, medical liberty should be enlarged, and the limits of professional secrecy should be restricted.

In discussing the position taken by Guelfi, many members of the association appeared to regard the question as a moral one rather than a legal or professional one. Some, indeed, went so far as to call the obligation of medical secrecy an unjustifiable moral monstrosity, since it often serves to protect vices at the expense of innocent victims. Others demanded for themselves and their fellows complete freedom of action under the guidance of their conscience. The association finally voted in favor of the retention of medical secrecy, and against the practice of giving information concerning corporal lesions.

The Physician's Rights as a Witness.—Mr. Abrams, of the Savannah (Georgia) bar, has reviewed the law as it relates to the rights of the physician as an ordinary and expert witness, and the risks which he runs upon his refusal to testify.⁴ He says:

"A physician, as such, is under no obligation to the public to testify or give his opinion on a subject with which he is peculiarly conversant, because his profession, his skill and knowledge derived from study and experience, are essentially his own property, and no court can deprive him of them without just compensation. In this sense the license to practice medicine, surrounded as it is by numerous safeguards for the public welfare, with laws passed for its proper exercise and punishments prescribed for their violation may be termed a franchise, and his exclusive property.

"The conclusion from numerous adjudicated cases may be stated as follows:

"First: A physician or surgeon cannot be compelled to testify to matters and things, or give his opinion upon matters, derived from his professional skill and knowledge alone. Second: He can be punished for contempt in refusing to testify in a case where he has witnessed an act and is called on to prove it in a court of justice, even though it involves professional opinions; the duty which he owes to the community in furtherance of public justice requires it.

"The urgent need of some settled rules, statutory or other, which shall govern the employment of medical experts, and establish their rights and privileges, is well illustrated in the following contrasted cases:

"1. Dr. F. H. Darby, of Morrow, Ohio, was summoned by the State as an expert in a murder case. He refused to answer the following question unless paid a fee as an expert: 'State whether, in wounds like this, there would be immediate gaping, or would the lips of the wound for a time remain in contact, or nearly so?' The judge declined to grant the fee asked, because he held that there was no law for it, and Dr. Darby, for his refusal to reply, was sent to jail for contempt of court, and he was released only after several days' confinement. He based his refusal on the ground that he was asked to give expert testimony, and as it was not claimed that he had any per-

sonal knowledge of the case the issue was a square one.⁵

"II. In the case of 'State of Michigan *versus* Vaninmans,' the judge said when a physician refused to testify on the ground that his testimony would be expert testimony, 'after many years' study and observation I decide that a physician's knowledge is his stock in trade, his capital, and we have no more right to take it without extra compensation than we have to take provisions from a grocer without pay to feed the jury. The court rules that the witness is not compelled to testify.'⁶

BLOOD-STAINS AND THEIR IDENTIFICATION.

Recognizing the difficulties that attend the examination of blood-stains under the usual conditions—the small amount, and the dried and altered state of the blood—M. Ferry de Bellone treats the suspected stain as follows:⁷

If it is on linen or cotton cloth he cuts it in straight strips and separates the threads with a needle and places them in a small glass tube with a solution of sodium chloride, one part to one thousand. After an interval of a few hours, longer or shorter according to the season and temperature, the liquid takes on a reddish brown color, from the disintegration of the stain. The fluid thus colored can be at once subjected to spectroscopic examination by adjusting the axis of the tube as nearly as possible to the axis of the instrument. The presence of the two characteristic absorption bands near Fraunhofer's band indicates the presence of hemoglobin. This fact having been established—and it is useful in giving information of the presence of blood without touching the liquid—the next step is to search for blood-globules. The fibres of the fabric having been taken out of the tube, after first shaking it so as to detach the cell-elements and cause them to settle to the bottom of the liquid, one or two drops of a concentrated solution of chloral which seeks the bottom of the tube. When this precipitate is well settled, the clear supernatant liquid is withdrawn with a pipette, and a drop of the red residue is carried to a glass slide. This slide is passed rapidly and repeatedly over the flame of an alcohol lamp. This produces a reddish coagulum, and a clear liquid is separated from the coagulum, which is absorbed and removed by means of blotting paper. Then there remains on the glass slide the coagulum only, in the form of a thin, delicate pellicle. This is stained red with a solution of fuchsin, and when the staining is completed, the pellicle is washed with water by means of a pipette. Then a drop of dilute acetic acid is placed on the specimen, and it is covered with a covering-glass. The preparation is now transparent, and the fuchsin fixes itself in the blood-globules, coloring them a bright red. The microscope now permits one at once to recognize the blood-globules, and to differentiate their special forms and diameters. The blood of ducks and fowls, so treated, has shown the characteristic oval shape of the globules after seven years.

When one has to manipulate blood-stains found on blades of weapons, on a floor, on wood or on stones, the spot is scraped off, and the powder so obtained is placed in a bag of fine cambric. The specimen is

⁴ Cleveland Med. Gazette, July, 1887.

⁵ Southern Clinician, Southern California Practitioner, May, 1887.

⁷ Gazette des Hôpitaux, Oct. 4, 1887.

⁶ Atlanta Med. and Surg. Jour., April, 1887.

then suspended by a thread in a tube in the solution of sodium chloride.

When the blood is mixed with soil the separation of the globules is more difficult, because of the clay usually found, which settles rapidly in the saline solution. An attempt should in this case be made, with the help of a microscope of low power, to determine the particles which, by their color, resemble blood; and when these have been culled, they may be treated, first, with the saline solution, and then with the chloral. In this case, too, the reaction for crystals of hæmine or chlor-hydrate of hæmatine will be indicated, according to the usual method with glacial acetic acid; and its results will declare whether or not the substance is dried blood. The same reaction, as a control method, is applicable to all such investigations.

Lacour formulates the following conclusions as the result of an extended series of careful studies in the same field of inquiry:⁸

(1) In the majority of cases, when total decomposition has not occurred in the specimen, one can recognize the presence of blood in suspected stains, even after the lapse of several years, by using the methods of micro-chemistry and spectroscopy.

(2) If skill and care are employed, one can distinguish human blood from that of bullocks, sheep, and oviparous animals. The search becomes much more delicate when one has to do with the blood of the dog or the rabbit, and a distinction between human blood and that of the guinea-pig is altogether impossible. The globules of other domestic animals resemble more or less those of the human subject in their diameter, but can all be differentiated.

(3) One can certify that he finds in the specimen of blood examined blood-globules which, in all respects, are like those of man or the guinea-pig, when the average of his measurements gives a number above $1\frac{1}{7}$ of a millimeter; but if there be much variation from this average, it shows that they may have come from a dog or a rabbit.

RAPE.

The Gonococcus and its Recognition. The medical jurist often has to determine the true nature of a urethral or a vulvo-vaginal discharge, and to be in a position to state whether the pus is or is not gonorrhœal. Lober, of Lille, has undertaken a series of observations whose results are an essential aid to diagnosis.⁹ All fluid discharges from the parts mentioned contain micrococci, and pus, especially, displays several varieties of them. The one character which, according to Lober, distinguishes the specific gonococcus is the property which it possesses of decolorization when the staining method of Gram is employed. Appreciating the difficulty of differentiating this microbe in the midst of a great number of others by the simple process of staining the specimen submitted for examination, Lober resorted to cultivation as a means of diagnosis. He tried cultures in bouillon and agar-agar, peptonized and sweetened. The latter gave good results. After having liquefied the agar-agar previously sterilized in glass tubes, and having mixed with it the fluid to be examined, he spread the preparation on a glass plate, and placed it under a sterilized bell glass. The cultures were kept at a

temperature of from 12° to 20° C. On the third day there appeared, as a uniform result, on the surface of the cultures of gonorrhœal pus, small white points, which, the next day, became spots of the size of a pin's head, and later, spread more and more. If one colored these colonies with methyl violet, they were found to consist of various forms of micrococci and diplococci. Treated according to the method of Gram and with alcohol, all the elements became decolorized. The results, as described, were uniform when gonorrhœal pus was used for the cultivations. Often, alongside these white colonies, there appeared yellow groups; these were colonies of staphylococci which retained their staining.

Lober was successful in colonizing and recognizing gonococci by the above method, derived from pus-stains found on the shirt of a man charged with rape, and on the chemise of his victim. Microscopic examination and staining of a macerated portion of the same spots confirmed the culture results, by detecting the presence of the gonococcus in the pus-cells. When non-specific pus was used as the material for the culture process, the micrococci, streptococci, and staphylococci found in the colonies were not decolorized by the method of Gram.

CAN A WOMAN BE RAVISHED WITHOUT HER KNOWLEDGE DURING HYPNOTIC SLEEP.

Brouardel believes this to be possible only under certain very favoring conditions.¹⁰ If a man who is agreeable to the somnambulist offers suggestions to her which are acceptable and of an indifferent character and not offensive, she submits herself to them; but if the suggestions are revolting to her personal affections or her natural instincts she opposes to them a resistance which is almost insuperable. One may easily lead the hypnotized subject, for example, to sign a receipt for money; but if she has preserved her normal chaste instincts, anything contrary to those instincts will be sought in vain. But, on the contrary, if the sentiments and the acts offered by the magnetizer to his subject correspond with her own, she obeys readily his suggestions. In the great majority of cases, however, a woman does not recall in her waking state what happened to her in the state of somnambulism and *vice versa*, yet the same feelings affect her in both states.

SEXUAL INCAPACITY.

Hermaphroditism.—According to Brouardel,¹¹ a true and genuine hermaphrodite is a myth. Hermaphroditism, so far as it relates to the internal sexual organs, has been found; but its coexistence with the external attributes of both sexes is impossible. During the first six weeks of intra-uterine life, the fœtus is both male and female; according to the predominance of development of the gland of Müller or the Wolffian body it becomes male or female. It can readily be understood that if the development is parallel, it might result in the coincident formation of an ovary and a testicle which ordinarily remain in a rudimentary condition. It is quite different with the external organs. During the first two or three months, determination of the sex of the fœtus is extremely difficult; one observes something like the rudiments of a penis which is destined to become either a clitoris or a

⁸ Archives de Med. et Pharmacie Milit., October and November, 1887.

⁹ La Semaine Médicale, March 9, 1887.

¹⁰ Gazette des Hôpitaux, November 8, 1887.

¹¹ Gazette des Hôpitaux, January 1, 1887.

penis. The scrotum is cleft in the median line; the closure or non-closure of this cleft determines whether a true scrotum or a vulva shall be the result. But it is easy to understand that we cannot have at the same time in the same person closure and separation of the parts, a scrotum and labia majora. Complete hermaphroditism, therefore, cannot exist; we may find simply malformations capable of raising doubt as to the true sex.

With regard to hermaphroditism of the internal organs, Brouardel recognizes four chief varieties: we may find (1) two ovaries and two testicles, (2) two ovaries and one testicle, (3) one ovary and two testicles, and (4) one ovary and one testicle. Examples of either of these varieties are extremely rare. To these should be added a fifth and still rarer abnormality, in which the individual (a male) has two testicles and something like a uterus.

The cases which have a more immediate practical interest in their medico-legal relations are those of pseudo-hermaphroditism, which consists generally in an arrest of development of sexual organs in the male and in an excess of development in those of the female; of the former, a typical example is hypospadias. The subjects of this deformity are usually cryptorchids. In the female, spurious hermaphroditism is found illustrated in an exaggerated development of the clitoris; to this is joined sometimes an obliteration of the vulva. In hypospadias, the rudimentary penis shows at its base a groove, a kind of cutaneous-mucous frannum beneath it; this the author has never found upon the clitoris, and it is in his opinion an essential characteristic of the male sex. Then, on the other hand, the cleft scrotum of the hypospadian, showing in its two halves a resemblance to the labia majora has nothing analogous to the labia minora; there is no case of a hypospadian with nymphæ or a hymen.

Clinical Memorandum.

SINGULAR SUCCESSION OF SYMPTOMS IN A CASE OF MALIGNANT DISEASE.

BY GEORGE A. OVIATT, M.D., OF SOUTH SUDBURY, MASS.

MAY 10, 1880, I was called to see Mrs. M. G., who had been suffering for some weeks from loss of sleep. She was fifty years of age, the mother of one child, and had had one miscarriage, fifteen years previous to my visit. She was of unusually dark complexion, of medium height, rather thin, and had just passed the change of life. She had never been ill, and had been able to perform her accustomed duties without any assistance, save at the time of her confinement.

I found her suffering not only from insomnia, but melancholia. She was much disturbed lest the family should come to want, although in very comfortable circumstances. She had been taking bromide of potassium with some preparation of valerian, but had not been much benefited thereby. I ordered large doses of the bromide combined with chloral, after taking which she was able to get more sleep, but the depression of mind was in no way relieved.

At the end of a week an eruption of a bright red color appeared on her lower extremities and trunk, showing a decided tendency to spread. The second day after it was discovered it had assumed a darker

shade, and covered almost the entire body. At first, I had supposed it to be caused by the large doses of bromide of potassium administered, but now thought it must be cutaneous erysipelas. The pulse, on the morning of the second day, was 120 a minute, the temperature 104°. The heart-sounds were weak, and that organ seemed taxed to its utmost.

The third day, in view of the gravity of the symptoms, I requested a consultation, and Dr. Z. B. Adams was called in. He confirmed my diagnosis of erysipelas, and feared that there would be a failure of the heart's action, as almost all the cuticle was involved. It was decided that twenty drops of tincture of chloride of iron and a desert-spoonful of whiskey should be given in alternation every two hours. The topical application used was a solution of acetate of lead, applied, where it could be, with any convenience.

At the end of six days the erysipelas departed, followed by a very marked desquamation, large patches of old skin coming off in many places, leaving a new and very sensitive cuticle in its place. During all this time the melancholia had been absent, and the patient had been able to sleep well, except when kept awake by the itching of the cuticle.

As bodily health returned the mind was again affected, and as badly as before. At her husband's request, I saw Dr. C. F. Folsom, and by him was encouraged to think that after the change of life was fully established the melancholia would cease. He advised a change of scene for six months, and lively company. About this time, a tumor was detected by the nurse in the left breast, with retraction of the nipple. This the patient was very anxious should not be brought to my notice.

In the autumn, the tumor gave her so much uneasiness that she consented to have a careful examination made, when it was pronounced a cancer. She went to the Massachusetts General Hospital, where the tumor was removed. After this, for a year she was in the best of spirits, and considered herself quite well. At the end of a year she was again compelled to go to the hospital for a second operation. Six months after the second operation, she placed herself in the hands of a quack to have the cancer drawn, as it had again appeared, and was very painful. This last treatment was pronounced to have been entirely successful. Three months after I was called in, as the left arm was very much swollen; there was a great deal of pain, and from a small cavity in the axilla a thin, watery pus of a characteristic odor was exuding. The melancholia was very marked. The dread which the patient had lest she should be obliged to go to the almshouse, was much greater than her fear of present suffering. Morphia was injected subcutaneously every night; otherwise she had no sleep.

Three months before her death, a rodent ulcer of cancerous nature appeared in the lumbar region, which rapidly increased in size from that of a quarter of a dollar to the circumference of an ordinary teacup. A very small one also appeared just above the nape of the neck. They both had irregular, purplish edges, and the pus had a very offensive odor. In the lumbar region, the vertebrae were almost exposed.

She was able to sit up until within a few days of her death, and went to bed only at night. She was very unwilling to have any one take care of her, save her husband, and only consented to have a nurse when her husband's illness made it absolutely necessary.

The remarkable features of the case were these: The rapid development in such quick succession of, first, insanity; second, severe attack of erysipelas, involving all the cuticle; third, the appearance of three cancers of the breast within two years and a half, accompanied, at last, with rodent ulcers in two other regions; fourth, the fact that the mind was the least affected at the time when the erysipelas was in progress, and the breast most painful, except at last, when the melancholia was constantly present.

Reports of Societies.

ESSEX NORTH DISTRICT MEDICAL SOCIETY.

The regular quarterly meeting was held in Haverhill, at the Eagle House, January 4, 1888, and was called to order by the President, E. P. HURD, at 11.45 A. M.

The Secretary announced the death of Dr. David Dana at his residence in Lawrence, December 10, 1887, at the age of sixty-two years, and of Dr. James R. Nichols, of Haverhill.

Dr. CROWELL moved that Committees be appointed by the chair to draw up fitting resolutions.

On the death of Dr. Dana, the chair appointed the following Committee: Dr. Woodbury, of Methuen, Drs. Chamberlain and Carleton, of Lawrence. On the death of Dr. Nichols: Drs. Crowell, Clarke, and Lovejoy, of Haverhill.

The President then introduced Dr. PHILIP COOMBS KNAPP, of Boston, who read a paper on

SOME EARLY SYMPTOMS OF TABES DORSALIS.

THE PRESIDENT asked the essayist whether silver nitrate, which was once spoken of with some favor, is now considered a good remedy in tabes.

Dr. KNAPP answered that he had used it, but was doubtful of its efficacy. He had seen much more decided benefit from potassium iodide, sixty to ninety grains, three times a day. He thinks that it is best given in Vichy, or largely diluted in plain water.

Dr. H. F. ADAMS, of Newburyport, read a paper on

ANTISEPTIC MIDWIFERY.¹

He exhibited several books to which reference was made in the paper, and showed several forms of the occlusion pad.

Dr. WILLIAM COGSWELL said that he had never seen the necessity of antiseptic precautions in his private obstetric practice. In an experience of over forty years he had never had any puerperal peritonitis, and he had never taken any precautions beyond washing his hands with whatever soap was handed him.

Dr. LOVEJOY agreed with Dr. Cogswell. He had had no peritonitis. He had occasionally seen swelled legs, but that came from scattering of the milk. In nearly all cases of swelled legs he had found the milk suppressed, and a lump in one breast.

Dr. STABLER said that he had not been so fortunate as Dr. Cogswell. He had, from reading, become convinced of the need of antiseptic precautions, and had so expressed himself before the Lawrence Medical Club, but the proposal to introduce it into private practice had met with such unanimous disapproval

from the older members, that he had become somewhat careless in his application of it. Following this, he had had in private practice, last summer, a most pronounced case of puerperal fever. An intelligent lady in good circumstances, who was confined in a house containing an untrapped drain, was taken with a chill the next day after delivery. Her temperature rose steadily for a week, till it reached 106°, and she only recovered after four weeks of fever of typhoid type.

Dr. R. C. HUSE said he had in times past lost several cases from puerperal septicæmia. In the case of his own wife, when he found her with a chill and rising temperature, he had given a vaginal injection of a solution of chloral hydrate, the strength of which he regulated by tasting it before making the injection. The effect was very happy, and he had repeated the practice in several subsequent cases with equally good results. He has also used Lugol's solution of iodine, one drachm to the pint of hot water, with the effect of promptly deodorizing offensive lochia. He now always uses antiseptics, and since adopting the practice he has had no septicæmia.

Dr. CLARKE said he thought we had not the courage of our convictions. *Antiseptic midwifery* implied the absolute exclusion of germs from the parturient canal. The half-way use of germicides is not antiseptic midwifery. For his own part, although well acquainted with septicæmia, having seen it in all its horrors at the Boston Lying-in Hospital, he has had no cases of the disease in private practice. Antiseptic midwifery presents so many difficulties for the private practitioner who has been trained in the methods of earlier years, that he (Dr. Clarke) does not expect to attempt it until he shall have had a case of septicæmia.

Dr. HUSE, in reply to Dr. Clarke's implied assertion that he used half-way measures, would like to state what his measures are: On first seeing the patient, and before any vaginal examination is made, he gives her an enema, washes out the vagina with 1-3000 solution corrosive sublimate, and has the external genitals bathed with 1-1000 solution. He then washes his hands with soap and with 1-1000 solution, and introduces the finger without ointment, and *never* allows himself or any one else to touch the patient's genitals without first having washed the hands in the solution. After the delivery of the secundines, he washes the patient with the antiseptic and calls for two towels. One of these he dips into the 1-1000 solution, and after wringing it out with his hands, he folds it into a square pad and places it over the vulva. The second towel he likewise wrings out of the antiseptic, and folding it once likewise, passes it between the legs, and pins it to the binder at front and back. When instruments are used, he immerses them for an instant in boiling water.

Dr. STABLER called attention to a point recently stated by Weir, of New York, that dry preparations of mercuric chloride are unreliable, because the bi-chloride is so quickly changed into calomel. Pathogenic microbes have been found in dry pads that were previously impregnated with sublimate. With regard to the ointment used for the finger and instruments, he had used both carbolic acid and eucalyptol. Both have strong odors, and the carbolic anesthetizes the examining finger. He prefers a five per cent. ointment of resorcin.

¹ See page 216 of the Journal.

PROF. WILLIAM L. RICHARDSON, in closing the discussion, said he had been fourteen years at the head of the Boston Lying-in-Hospital, where septicæmia had been so prevalent that they had repeatedly been compelled to close the Hospital. Since the introduction and adoption of the antiseptic method in 1885, they have had over nine hundred confinements, without a death from septicæmia. With regard to diagnosis, he thinks peritonitis a comparatively rare complication of septicæmia, but regards a temperature of more than 100° F. as evidence of it. Milk fever, swelled legs, mammary abscess, sore nipples, pneumonia, are all evidences of it. Under the antiseptic method, women pass through the puerperal period without any rise of temperature whatever, and torn perineums unite by first intention without the slightest difficulty.

He considers the physician responsible if a death occur from any of the above enumerated causes. In his opinion, the question is bound to assume a medico-legal aspect, and it will go hard with a physician who loses a patient from any such cause, unless he can succeed in shifting the responsibility on to the nurse. With regard to technique, it makes no difference whether pads or towels are used, or whether the pads were used wet or dry. Garrigues uses them wet, but in Boston they are used dry, because the wet pad, if long continued, may cause eczema, and possibly, mercurial poisoning. He has abandoned the post-partum douche, except in cases where it is positively indicated.

There is little danger of absorption from the endometrium, but much more danger that the mercurial will be absorbed in the folds and small rents so constantly present in the vagina. Digital examinations may be practised *ad libitum* previous to delivery, provided the examining finger be washed in the mercurial before introduction.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.¹

SECOND DAY.—AFTERNOON SESSION.

DR. WALTER SUITER read a paper on

THE PRESERVATION OF DEAD BODIES,

in which he showed there had not been the advances in this line over old time methods, as there had been in other departments of medical science. He briefly described methods ordinarily employed by undertakers, and showed that the preservative agents were commonly of a kind which would make it impossible to detect the crime of poisoning by examination of the fluids of the body after the embalming process. Most of the agents contained metallic poisons, especially arsenic. He moved that the committee on legislation be given power to investigate the subject with a view, if necessary, to urge legislation limiting the embalming fluids to be used by undertakers. The motion was adopted.

DISCUSSION ON INTESTINAL OBSTRUCTION.

DR. LEWIS A. STIMSON, of New York, opened the discussion with a paper on

THE PATHOLOGY AND SYMPTOMS OF INTESTINAL OBSTRUCTION.

The author described the various forms of intestinal obstruction, including that due to constricting adhe-

sive bands, internal herniotomy, various forms of volvulus, twisting of the gut upon itself, intussusception, obstruction by accumulation of feces, by pressure of tumors, foreign bodies in the gut, etc. Among these was to be included that common group of intestinal cases of intestinal obstruction called functional obstruction, depending on some local inflammatory process. Clinically the cases were divided into acute and chronic, and symptomatically into those which came on without previous warning, and those which were preceded by pain, etc. The great difficulty lay in diagnosing the chronic cases. Among symptoms common to all cases were local or general peritonitis, originating at the point of occlusion; marked distension of the upper segment of the bowel, and marked contraction or emptiness of the lower one. Dr. Stimson took up the individual symptoms in the different cases. The tendency of all cases of acute obstruction was to become constant. A study of the cases of acute obstruction showed that all might be grouped into two classes; the first, and much larger class, being those in which relief could not be obtained except by active operative interference; second those in which there was a possibility of relief by other means. In intussusception and stricture of the large intestine there were two symptoms not found usually in others, namely, tenesmus and bloody and mucous passages. The author then considered some of the points of differential diagnosis between acute obstruction and conditions giving rise to like symptoms, symptoms of peritonitis, etc., statistics relating to these particulars were too meagre.

On motion the president was empowered to appoint a committee which should ask for and receive communications from physicians throughout the State, giving their experience with intestinal obstruction.

The discussion was continued by DR. WILLIAM C. WEY, of Elmira, with remarks on

HOW LONG SHOULD CASES BE TREATED MEDICALLY?

He said that if the peritoneal cavity could be entered with the immunity from danger which some claimed at the present time, these cases should not be treated medically at all. There were certain cases in which he believed it to be impossible to make a diagnosis. We had certain rules which seemed to be pretty well established with regard to locating troubles in the small or large intestine, but when the physician got to the bedside he found often that such knowledge went for naught. Except in large cities where the surgeon was ever convenient and ready, cases of intestinal obstruction were usually allowed to go on under medical treatment until death closed the scene. But he had seen cases with all the marked symptoms of obstruction recover under medical treatment. He related one case in which relief had been obtained by aspiration. Medical treatment should be continued until such time as serious symptoms gave positive indications for surgical interference, and when that time arrived we should not hesitate about operating. The opportunity to resort to surgical interference in the country seldom occurred.

DR. ALBERT VANDERVEER, of Albany, discussed the question

WHEN SHOULD OPERATIVE MEASURES BE RESORTED TO?

He said: It must be evident to us all that the gen-

¹ Concluded from page 203.

eral practitioner can no longer look upon an autopsy revealing the cause of intestinal obstruction and quiet his own thoughts, as well as the inquiries of friends, by saying: "Well, nothing more could have been done than the medical treatment adopted," had he known as we do now, the true condition of affairs. It becomes the duty of every man, at the present time in general practice, to acquaint himself with all that pertains to the causes and symptoms of intestinal obstruction.

When an early diagnosis has been reached, when a careful and well-conducted consultation has been held, and a judicious and cautious but thorough medical treatment has been tried, we should then consider intelligibly and resolutely the chances of an operation. These cases should not be left until symptoms of shock have become too pronounced, or until a condition of actual collapse is present. But we are often obliged to wait until the border-land is crossed, and we are well on, or it may be into the dangerous ground of heart-failure and allied conditions, before the patient or friends will grant consent to surgical interference. We need now to have successful cases to teach the public the possibilities of what surgery can do in these heretofore fatal cases.

DR. A. G. GERSTER, of New York, dwelt upon the necessity of making a careful study and examination in all cases of intestinal colic, since so often obstruction began with the same symptoms as a colic, and if the case went on to the point of great distension of the abdomen from tympanites, it would be almost impossible to feel a tumor or the cause of the obstruction.

DR. WEIR was disposed at present to think that when there were ordinary symptoms of obstruction, as pain and persistent vomiting, lasting twenty-four or forty-eight hours, the case should be passed over to the surgeon.

DR. W. GILL WYLIE spoke of certain cases in which there was partial intestinal obstruction, in which there was likelihood of a fatal termination more quickly than in complete obstruction. They were those in which the symptoms began with chill, sweating, together with those of obstruction. They pointed to a tumor containing pus. He had recently had two such cases, in one of which he operated without allowing a medical consultant to be called, as he knew it would lead to delay, and probably, thereby, to death. He found an abscess, which he removed, and the patient recovered.

After some further informal discussion, DR. ROWELL PARK read a paper on

WHEN SHOULD ENTEROSTOMY BE CHOSEN?

When a case of acute intestinal obstruction was seen very early, exploratory laparotomy might be justified, but when seen very late, enterotomy was probably the only justifiable operation. Laparotomy was especially indicated when obstruction was early recognized, or its presence was reasonably certain; when caused by a tumor, by a neoplasm which could be removed, and when the condition of the peritoneal cavity demanded washing out or drainage. Enterostomy would be indicated when the surgeon could form no idea of an obstruction; when malignant nature of the obstruction precluded any possibility of permanent benefit from its removal; when the patient's powers were too far undermined, etc. Laparotomy was the

more practical surgical measure, but it was, at the same time, more dangerous than enterotomy or enterostomy.

DR. ROBERT F. WEIR, of New York, discussed

HOW SHOULD THE OPERATION BE CONDUCTED?

While he had used ether, he now believed chloroform would be the better anæsthetic, and should be administered by the Eschmarch inhaler, which permitted of the admixture of a large amount of air. Sometimes a view of the abdominal cavity could be obtained by retaining the intestines in place by sponges, but the distended condition of the intestines seldom permitted this. After all, laparotomy for intestinal obstruction resolved itself into the treatment of the distended gut. How were we to manage that condition? Rapidity of operation was the salvation of these patients. He would make an opening allowing of free exposure of the abdominal contents. The author described the steps to be taken after opening the abdomen in the different forms of obstruction. When the gut was obstructed by a gall-stone, one operator had broken up the gall stone by a needle introduced through the gut, and another had urged it along down the small intestine until it reached the large intestine, where it was allowed to remain. In invagination it might be necessary to remove a portion of the gut, and quite a considerable amount had been excised, the patient still recovering good health. If antiseptics were employed in the peritoneal cavity, salicylic acid should be preferred to carbolic acid or corrosive sublimate. It was potent and safe. After the operation, little nourishment should be given by the mouth. Opium should be avoided. If there were threatening peritonitis, catharsis, as recommended by Mr. Tait, should be employed. Dr. Weir insisted upon the necessity of operating early.

RESULTS OBTAINED BY OPERATIVE INTERFERENCE.

DR. B. FARQUHAR CURTIS, of New York, had collected a table of 336 cases of laparotomy for acute intestinal obstruction since the statistics given by Schramm. The mortality had been 68 per cent. Death was due in over one-half of the cases to the condition of the patient at the time of the operation. The mortality was greatest in the longest operations. Enterostomy had given a mortality of 67 per cent. It would have to give much better results before it could compete with laparotomy, for it was not curative.

DR. A. JACOBI said it had often been advised to puncture the much distended intestine, but he called attention to the danger of this procedure, leaving an aperture which would fail to close, and permit of extravasation of feces and the development of peritonitis. He had seen such a case.

DR. BACON, of Hartford, cited three cases recently seen by him, in two of which he relieved acute intestinal obstruction by injections of water through a long tube, the patient's head being low. It was somewhat doubtful whether laparotomy would have resulted as favorably. In the third case an operation was refused, and the patient died.

DR. R. B. BONTECOU, of Troy, presented a young man on whom he had performed laparotomy for acute intestinal obstruction successfully, and cited another recent and successful case. In one case, the duration of the entire operation was eighteen minutes.

SECOND DAY.—EVENING SESSION.²
THE PRESIDENT'S ADDRESS.

DR. A. L. LOOMIS, in the introductory remarks to his address, traced the methods of medical study in different ages, the advantages and disadvantages attending investigations by physicians at different periods. The simple inscription on the tombstone of one of the fathers of New England medicine characterized the present medical era: "The Disciple of no Man."

Dr. Loomis discussed four problems of interest at the present time:

- (1) The relation of microbes to disease processes.
- (2) The prevention or modification of disease by inoculation.
- (3) What is the cause of abnormal rise of temperature in disease?
- (4) What is the value of antipyretics?

In connection with the first problem, he discussed the question whether microbes could originate *de novo*, and whether there was mutability of bacteria, and said he thought the affirmative of these questions had not been proven. The question, do microbes act as the sole cause of disease? was more difficult to answer. The President named some affections in which it had been shown that they were the sole cause—erysipelas, remittent and splenic fevers. To his mind, it had not yet been positively proven that the bacillus tuberculosis was the sole cause of phthisis.

Regarding the second problem, he said the fact that persons who had had certain infectious diseases were not afterward liable to contract those diseases, favored the view that diseases might be prevented or much mollified by inoculation with an attenuated virus of infectious diseases. Experience had shown that the diseases which can be prevented by inoculation are vaccinia, variola, splenic fever, and, if we could accept the report of the English Commission as conclusive, hydrophobia.

Regarding the third problem, its answer involved an answer to the question, What is fever? Something which the profession did not yet understand. It seemed almost self-evident that a prominent factor of heat production existed in metabolism. There seemed to be imperative necessity for some regulative mechanism, but he could not understand why there should be a nervous mechanism which should control heat-production without there being corresponding changes either general or local. He could conceive of no reasonable evidence against the view that physical processes must be governed by the same laws and be productive of the same results in every instance and under all conditions. It had been pretty conclusively shown that there is an inhibitory center upon heat-production, but its exact location had not been demonstrated.

Regarding the fourth problem, the effects of antipyretics in the treatment of disease, Dr. Loomis said that when antipyretics were used to cause reduction of high temperature, and the temperature remained reduced only for a short time, he was confident that such reduction took place at the expense of the vital forces of the patient. He thought that no one whose experience was at all extensive in the use of antipyretics in infectious diseases, would for a moment claim that they have any power in shortening their duration

or greatly modifying their severity. There were two kinds of antipyretics, those administered internally, and the application of cold to the surface. The mode of action of the two was evidently different. Their use was based only on the fact that they removed one of the phenomena of fever. If this could be accomplished without serious loss of vitality or at the expense of the reserve forces of the patient, we were justified in their use; but we should not imagine that by reducing the temperature we control the fever. Dr. Loomis paid a high tribute to the tendency toward experimental study, but he said it should not be elevated above the clinical in medicine.

THIRD DAY.—MORNING SESSION.

A number of papers were read by title, and referred to the committee for publication in the "Transactions."

REMARKS ON THE "CHIAN TURPENTINE TREATMENT OF CANCER."

DR. DANIEL LEWIS described the drug, the precautions in its selection as laid down by Clay, of England, and the results obtained from its use by that gentleman. Dr. Lewis had not had sufficient experience with the drug to draw any conclusions as to its efficacy.

DR. JOHN O. ROE, of Rochester, read a paper on THE FREQUENT DEPENDENCE OF PERSISTENT AND SO-CALLED CONGESTIVE HEADACHES UPON ABNORMAL CONDITIONS OF THE NASAL PASSAGES,

which was discussed by DR. C. R. AGNEW, who agreed with the author regarding the dependence of general or local diseases, remote from the primary seat of irritation, but impressed caution among specialists against apparent attempts to unduly impress the importance of their own department in medicine.

The following officers were elected: For President, DR. S. B. WARD, of Albany; for Vice-president, DR. A. WALTER SUITER, of Herkimer; for Treasurer, DR. C. H. PORTER, of Albany; for Secretary, DR. WILLIAM MANLIN SMITH, of Syracuse; Committee of Arrangements, DRS. E. L. PARTRIDGE, F. C. CURTIS, C. S. MERRILL; Delegates to the Massachusetts Medical Society, DRS. A. JACOBI, J. O. ROE, B. A. SHERMAN.

The Special Committee, appointed by the President to report at the present meeting on the question of substitution of National for State quarantine, reported that they could not give satisfactory answer to the propositions involved, within the limited time of this session. The committee was continued and given full power to act with committees appointed by other State Medical Societies.

DR. C. R. AGNEW, of the Special Committee, with relation to the insane, reported: (1) That until comparatively recent times, the insane were considered and treated as criminals, and confined in dungeons or prisons; (2) Their subsequent retention in poorhouses was essentially a return to the old system; (3) The treatment of the insane has improved with the progress of civilization; (4) Therefore special hospitals were supplied for them, and their welfare was entrusted to scientific and humane people; (5) A return to anything like the old system of treating the insane in poorhouses, or relegating them to the mercies of county officials would be a grave mistake. The Medical Society of the State of New York therefore expresses its objection to any plan or law which in any

² Held in the Senate Chamber of the Capitol.

way looks to a return of the insane to county poor-houses, as being unscientific and inhumane.

After some discussion the report was adopted.

The thanks of the Society were extended the President for the marked ability and satisfactory manner in which he had presided over the meetings.

Adjourned.

THE NEW YORK ACADEMY OF MEDICINE.

STATED MEETING, February 2, 1888.

DR. ROBERT W. TAYLOR read a paper on

XERODERMA PIGMENTOSUM AND ITS RELATION TO MALIGNANT NEW GROWTHS OF THE SKIN.

It was in 1870, he said, that Hebra and Kaposi published in their book the first account based on the observation of four cases of this skin disease, which was peculiar to childhood, multifiform in its clinical characteristics, and indelible in its disfigurements. It was especially destructive to the eyes, nose and mouth, and by its subsequent new growths was liable to lead to death. In 1877, Dr. Taylor read before the American Dermatological Association, at its first annual meeting, held at Niagara Falls, a paper giving the histories of seven cases of this affection, all of which had been under observation for a number of years. At the same meeting Dr. C. Heitzmann, of New York, also reported a case. At the next annual meeting of the Dermatological Association, which was held in 1878, at Saratoga Springs, Dr. Taylor read a second paper on this subject and the paper which he now presented to the Academy of Medicine, he said, embodied the results of his observations and studies for fifteen years.

In 1878, Duhring also reported a case, and 1882 Kaposi published a valuable paper on the disease. In 1883, Neiser reported two cases, and published with them an account of six cases observed by R  ler. In the same year Vidal's paper appeared. In 1884, Fick published a paper, and the same year Crocker also published one containing the histories of three cases, the only ones hitherto observed in England. In 1885, Kaposi reported his ninth case, and the same year Dr. J. C. White, of Boston, also reported one. Altogether forty cases had been observed up to the present time; but at least one of these had to be rejected, as not being in reality an instance of the disease in question. There was more or less doubts about the diagnosis of some of the others, on account of the lack of data concerning the early stage, but, notwithstanding the absence of this desirable information, he was willing to accept them.

Dr. Taylor then proceeded to give in detail the history of some of his cases. Three of them occurred in one family and two of them in another family, closely related to the other. All his cases were in females, with one exception. In one of them in which there were numerous vascular tubercular elevations, there was a supra-orbital tumor of considerable size, which was operated upon by Drs. Gruening and Gerster, and later it was found necessary to enucleate the eye-ball. The one boy who was the subject of the disease, when seven years old was attacked with mumps, and, resulting from this there was an abscess, which had to be opened. The wound thus made never healed. Extensive ulceration followed, and this finally involved the coats of an artery, in

consequence of which uncontrollable h  morrhage occurred, from which the patient died. Another of the children died of marasmus, and still another was accidentally drowned.

In these seven cases, Dr. Taylor said, all the clinical features of the disease were portrayed. The affection consisted essentially of telangiectases, pigmentations and atrophic changes, to which were supra added certain polymorphous new growths which primarily were benign, but which were liable to degenerate into malignant tumors. In six of the cases the disease commenced when the children were about seven months old, and in the seventh at the age of fourteen months. The weight of evidence placed this disease as one of very early childhood, and he laid great stress upon the prodromal erythema, the usual seat of which was on the face under the eyes, and which was liable to be mistaken for sun-burn. It occurred in infants in good health, and without apparent cause. This prodromal hyperemia lasted from one to three months, and as it gradually disappeared, the pigmentations began to make their appearance. They affected the face and the exposed parts of the neck and extremities; often extending as low as the third rib on the chest, and up to the elbows on the arms. They varied in size from a pin-head to a lentil and were not much elevated above the surface. Scattered among them were red or telangiectatic spots, in which congeries of capillary bloodvessels could be distinguished with a strong glass. Upon the hands there was much less of the prodromal erythema than upon the face. In the meanwhile there were no marked local subjective symptoms, heat, burning and itching being absent, and the general health remained good. The lesions were always characterized by alternating exacerbations and periods of inactivity, so that the course of the disease was more or less erratic.

The period of the pigment-spots and the telangiectases belonged principally to early childhood, and these two orders of lesions were peculiar to the stage of hypertrophy. The atrophic changes usually made their appearance at the end of the first year. The atrophy was not, as a rule, symmetrical, and varied greatly in extent and intensity in different subjects; while it was not commonly as well-marked on the extremities as on the face. This atrophy of the skin, developed in accordance with the atrophy of the bloodvessels of the telangiectatic spots. It was especially apt to affect the eyes, nose and mouth; causing ectropion, with its attendant evils, and deformity of the nasal and oral cavities. Very often hypertrophic changes were taking place at the same time as the atrophic. The course of the primary disease could then be briefly described as follows: First, there is, after a general hyperamic stage, dilatation of the capillaries; then these increase in size by new growth of their elements. This gives rise to the red spots, which constitute the first stage of the disease. After remaining a variable period, these minute capillary new growths undergo atrophy, leaving on their site brown spots. This constitutes the second stage, while the third is occupied in the continual new growth of vessels upon the site of those already obliterated in the atrophy of the skin itself.

The pigmented spots, or freckles, were not necessarily permanent, but in certain localities, particularly where atrophy existed, they came and went, fading,

and being replaced by other similar spots. They varied in color from a light brown to black, and invariably appeared in the exact positions previously occupied by the red ones, constituting a new formation of the superficial capillaries. If these changes were carefully studied in any part, it was observed that a vessel first underwent enlargement and became prominent, forming a red spot, and then it disappeared by atrophy, the brown spot, partaking of the conformation of the vessel spot, being left.

The face presented a mottled appearance, and, in addition to the freckles and the red spots, there were found white spots varying from a quarter-of-an-inch to an inch in diameter. There was a want of elasticity of the skin, which was like parchment, or seemed as if it had been coated with inflexible collodion. The appearance presented not infrequently resembled the cicatrix of an extensive but superficial burn. There was an almost total absence of the normal secretions and there was apt to be a peculiar immobility of expression upon the countenance. In some cases, however, the atrophy was much less marked than in others, and it was always less pronounced upon the hands than upon the face. The atrophic condition, in general, was not unlike that met with in senile atrophy of the skin.

While the atrophic changes were to be dreaded on account of their liability to result in hideous deformity, the keratotic or warty patches which eventually grew from some of the pigment-spots, were liable to degenerate into malignant growths. There were two principal forms of new-growths: (1) The keratotic, and (2) the larger, or elastic, which was in reality simply an exaggerated form of the first. Malignant new growths were recorded in sixteen out of thirty cases, and non-malignant in six cases. In nine cases in which there was as yet no new growths, six of the patients were under the age of twelve. Out of Dr. Taylor's own seven cases, epitheliomata was found in three. It was to be borne in mind that in any of the six cases with benign new growths, these growths might at any time become malignant. The statistics served to show that in this disease the greatest malignity was exhibited under the age of ten years, nearly as great between the ages of ten and twenty, and after that a diminished tendency to malignity. It was certainly a singular fact that epithelioma should develop in such young subjects. There was no evidence of metastasis in any of the cases.

Having remarked that it was impossible to give an exact description of all the tumors met with, Dr. Taylor proceeded to present the views of Kaposi, Neiser, and Pick in regard to the pathology of the disease. The horny layer of the skin was thickened and desquamating, the stratum lucidum and stratum granulosum disappeared, the Malpighian layer was thinned, and its deeper cells were strongly pigmented. The derma was atrophied, the papillae were quite apparent, and certain masses of pigment were seen; numerous embryonic cells were met with, and a quantity of elastic fibres, which appeared to have replaced the connective tissue to some extent. The vessels, the smooth muscular fibres, the sudoriferous glands, and the pilo-sebaceous follicles were diminished in number, and tended to disappear. The fungous tumors usually presented the histological characters of epithelioma, and the most common disposition was that of a lobulated epithelioma, with the fibrous stroma

infiltrated with embryonic cells. In some instances the new growth was found to be of the nature of angio-myxoma.

Intelligent medication, extending over several years, had proved quite ineffectual, and no case of the disease had ever been cured. In the treatment, measures should be taken to keep the skin at rest and free from all sources of irritation. All pigmentation warts should be removed as soon as possible with the spoon. All large tumors should also be extirpated, and the subjacent tissues thoroughly scraped, if necessary, to the bone or periosteum.

In answer to a question from the President, Dr. A. Jacobi, in regard to the absence of connective tissue, Dr. Taylor said that in this disease the papillae were principally involved, and the subcutaneous connective tissue only secondarily.

Dr. JACOBI then went on to say that according to some authorities, most, and to Cohnheim, all malignant tumors, occurring at any time of life, were the result of embryonic cells not undergoing their accustomed changes, and remaining behind in normally developed tissue; and if this theory was to be accepted, it would sufficiently explain the appearance of these malignant growths in early childhood. Furthermore, the fact that the bloodvessels were largely increased was no doubt the result of the embryonic tissue remaining; and these bloodvessels, it was to be noted, were not in a normal condition. He thought it probable that the occurrence of spontaneous thrombosis might explain the disappearance of the red spots and other phenomena noticed in the disease in question. On the whole, therefore, it seemed to him as if there was an arrest of the metamorphosis of embryonic tissue; and, if this were the case, he thought that in the treatment of this affection it might do good to increase the quantity of normal connective tissue, if possible, and thus fortify the parts against the further development of abnormal growths.

For this purpose, provided the supposition mentioned were correct, there were two remedies which suggested themselves as being specially indicated. These were, first, arsenic, and second—and better still—phosphorus. By the irritation caused by proper doses of these agents it seemed possible to excite a good, solid, normal nutrition in the tissues referred to. It was well known that phosphorus favorably influenced the normal growth of bone, and for some years past he had used it with satisfactory results in caries and other bone disease, finding it of special service in cranial rachitis. The phosphates or other compounds were of no value, and it was necessary to use phosphorus itself, administering it in oil or emulsion. It might be given in doses of one-hundredth of a grain, corresponding to one minim of the old *oleum phosphoratum*, twice a day, and its use should be maintained for a long period.

In conclusion, Dr. TAYLOR said that he thought these suggestions of the President very valuable and practicable, and that if he should meet with another case of the disease, he would institute a systematic course of medical treatment in accordance with them. At the same time, he thought the surgical measures to which he had referred in the paper were of decided benefit in controlling some of the more serious results of the disease; and, contrary to what might perhaps be expected, he had found that, as a rule, the tissues healed well after the removal of the new growths.

Recent Literature.

Nasal Polypus, with Neuralgia, Hay Fever, and Asthma in relation to Ethmoiditis: By EDWARD WOAKES, M.D., London. Philadelphia: P. Blakiston, Son & Co. 1887.

The chief object of this treatise is to discuss a disease which the author calls *ethmoiditis*, and which he considers to be of preëminent importance, because if his conclusions concerning it be correct, it will place the more important affections of the nose on a sound pathological basis, and will enforce on their behalf a more radical system of treatment. The author applies the term *neurosis ethmoiditis* to a special inflammation of the nasal tributaries of the ethmoid bone, and this, he contends, lends to the development of myxoma. He states that every case under his observation, whenever mucous polypus had been present, necrotic squames or spicules could be detected also. Three careful chapters are devoted to the elaboration of this theory, and a condition is described which undoubtedly exists in the nose. The statement, however, that all mucous polypi have their origin in a necrotic process of the structures constituting the spongy bones is fortunately not borne out in practice.

Treatment of Disease in Children, including the Outlines of Diagnosis and the Chief Pathological Differences between Children and Adults. By ANGEL MONEY, M.D., M.R.C.P., Assistant Physician to the Hospital for Sick Children, Great Ormond Street, and to the Victoria Park Chest Hospital. Philadelphia: P. Blakiston, Son & Co., No. 212 Walnut Street. 1887.

This volume, which is one of the "Practical Series," is stated by the author to be intended for the senior student and practitioner. The book is of convenient size for reference, and presents a much more rational method and outline of treatment in children's diseases than is usually met with in treatises devoted to pediatrics.

The text is, at times, somewhat unsatisfactory in that it does not fulfil the promise of that high standard of information which we are led to expect from the preface and introductory, as may be seen in the chapter on feeding, which will hardly satisfy the "senior student" in his investigations in this important branch of the subject, and will in places be found to be incorrect, especially where reference is made to the chemistry of human milk, as compared with cow's milk.

The chapter devoted to nervous diseases is an excellent compendium for study preparatory to the acquisition of any real knowledge of these important diseases, but is not otherwise of much practical value.

The book, as a whole, is disappointing, both from the bad division of the subjects, and its inaccurate and often misleading statements.

— A German pharmaceutical journal, remarking on the great frequency of fatal accidents from taking carbolic acid by mistake, states that these form 90 per cent. of all the fatal cases of taking the wrong medicine, and points out the great importance of always using poison bottles and poison labels for carbolic acid.

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A NATIONAL BUREAU OF HEALTH.

A HEARING was given at Washington on Friday, February 24th, by the Committee on Commerce of the House of Representatives, to persons interested in a bill now before Congress for the establishment of a Bureau of Health in the Department of the Interior.

This bill is identical with the measure brought to the attention of the last Congress and was at that time quite fully noticed in this JOURNAL, with approval; as then stated, it is probably all that can now be obtained from Congress, and has the very great advantage of an apparently undivided support on the part of the various State Health Authorities.

The American Public Health Association was represented by a committee consisting of Drs. Walcott, and McCormack with Medical Director Browne of the Navy, and also by Drs. J. S. Billings and G. M. Sternberg, of the Army, former presidents of the Association. Dr. McCormack also appeared in behalf of the conference of State Boards of Health, of which organization he is president.

They all spoke strongly in favor of the legislation proposed. The admirable work of the National Board of Health was noticed, and some of the influences, which had been most potent in its destruction, were alluded to. Dr. Hamilton, who bears the impressive title of Supervising Surgeon-General of the Marine Hospital Service, was the only person who appeared in opposition. He expressed the opinion that the work of the National Board of Health was of very little value, and stated that his own department now had charge of all that was doing by the General Government for the protection of the public health, and could do all that might hereafter be required in this direction.

The advocates of the bill did not hesitate to pronounce Dr. Hamilton's present work, as a public health officer, entirely unsatisfactory to the bodies represented by them, and seemed also to entertain the opinion that Dr. Hamilton might find his own time fully occupied by the discharge of his proper duties,

and the more so as he is at the same time in the practice of medicine at Washington and teacher in a medical school. He also has charge of such quarantine functions as are assumed by the General Government, and in these the present bill does not disturb him.

The contest seems therefore to be between an ambitious active man in place at Washington, skilled in the use of the political machinery of the capital, eager to increase the importance of his department, and the various health authorities scattered throughout the Union, and not easily combined for the purposes of an efficient representation at Washington.

There can be no doubt, however, that sooner or later a national health authority of generally satisfactory character must be created, and it will be a misfortune if it has to be created under the inevitable pressure of an invasion of cholera or yellow fever, because it will then be the hasty and timid creation of fear.

Dr. Robert T. Davis's legislative experience, his long and valuable service on the Massachusetts Board of Health, creditable both to himself and the State, give to his advocacy of this bill great strength and influence. So far as a presentation of the case on the floor of Congress goes, the prospects of success were never better; but the influence that secures legislative action rests with the medical profession of the country as a whole.

ANIMAL EXTRACTIVES AND THE PATHOGENY OF BRIGHT'S DISEASE.

At the meeting of the Paris Medical Society of the Hospitals, January 13th, Dr. Gaucher read a remarkable paper, which, while shedding some light on the pathogeny of chronic parenchymatous nephritis, and again bringing before the profession the rôle of extractives and poisonous "ptomaines" in the economy in health and disease, also calls attention to a possible source of danger in the too free use of animal food, and especially of meat extracts in certain morbid conditions.

The epithelioid form of Bright's disease, the "large white kidney," he believed to be of toxic origin, but the poison is generally generated in the organism of the patient. This poison is of a complex nature, being composed of divers extractive matters which result from the incomplete oxidation of azotized matters. Gaucher has performed many series of careful experiments on animals (guinea-pigs and hares), which, he thinks, prove the noxious action of these toxic principles on the kidneys. These experiments consist in introducing by subcutaneous injection into the organism of these animals, day by day for several weeks, a gradually increasing quantity of leucine, tyrosine, creatine, creatinine, of xanthine and hypoxanthine, in watery solution. The animal which is made the subject of this experimentation rapidly becomes albuminuric, and eventually dies; at the necropsy there is found an epithelial nephritis, of the

nature of the large white kidney. The accumulation of extractive matters in the blood may then, says Gaucher, through the elimination of these products by the kidneys, irritate the secreting epithelia and give rise to parenchymatous nephritis.

All these extractive matters in the normal state remain in small quantity in the circulation; but their production augments in many pathological states.

First in order come the diseases of the liver, which impede the transformation of azotized matters; and in affections of the hepatic parenchyma the formation of retrograde extractives augments in notable proportions, while there is diminution in the quantity of urea excreted. It is very probable that it is to the accumulation of the azotized *débris* of disassimilation in the blood that the frequency of albuminuria in cirrhosis of the liver is due. There is another disease in which the hepatic parenchyma is still more profoundly affected; namely, grave icterus. Now the nephritis of grave icterus is an epithelial nephritis which presents all the essential characters of the large white kidney. But the important fact in this connection is that in these especially malignant forms of jaundice there is exaggerated production of extractive matters, and a diminution in the figure of urea excretion which is lower than that observed in any other disease.

This excessive production of extractives is not limited to affections of the liver. In all chronic diseases there are disturbances of nutrition which must hinder the complete combustion of azotized materials. In accordance with the experimental evidence of the deleterious action of extractive matters on the kidney, one is led to the inevitable conclusion that the incomplete oxidation of the *débris* of disassimilation is the principal cause of the nephritis which are so frequently observed in the course of chronic diseases.

The influence of extractive matters on the kidney is of still wider extent; it may also manifest itself in the state of health. We know, in fact, that all the quaternary elements contain azotized substances in a state of incomplete oxidation; that broth notably has them, and concentrated broth especially; that the extracts of meat and the meat-powders contain a considerable proportion. Hence, the introduction of these alimentary substances, rich in extractive matters, may be deleterious, particularly to the kidney. This is especially the case when the kidney does not perform its functions well, and where the elimination of these toxic products is impeded.

Hence, then, the excessive introduction or the exaggerated production of extractive matters in the organism, or even with a normal production, an insufficient elimination — such are, M. Gaucher thinks, the ordinary pathogenic conditions of the large white kidney.

Given these experimental data, and there result important therapeutic conclusions, on which M. Gaucher strongly insists. First of all, the danger of meat *bouillons*, beef extracts, etc., in nephritis. To

the nephritic, Gaucher says: "bouillon is a solution of poison." There is, he adds, in all diseases, and even in healthy persons, a danger from extracts of meat, from concentrated broths, from meat-powders, which, apart from the toxic mineral salts, and especially the salts of potassium which enter into them as ingredients, contain organic poisons, and even all those excrementitious principles whose noxious action has been alluded to. In all chronic diseases, and likewise in fevers, nutritive disturbances are constant; metabolism goes on incompletely; there is abnormal production of extractive matters. If, by the food, we add still more of these toxic substances to those which already exist in the economy, we expose the patient to a double risk, and one which is even greater from the fact that the lesion of the kidney is a new cause of accumulation through failure of elimination.

Such is the substance of the views propounded by M. Gaucher in his ingenious and ably defended thesis. Future experiment may confirm much of what he has advanced, but we fear that physicians will be loth altogether to relinquish confidence in meat extracts and meat powders on account of the possibly toxic and dangerous character of some of the ingredients which enter into their composition.

THE PAUPER INSANE OF THE STATE OF NEW YORK.

A BILL has just been introduced into the Legislature which has been prepared under the auspices of the State Charities Aid Association, by Prof. Theodore W. Dwight, of the Columbia College Law School, who is a member of the Association's Committee on the Insane, in behalf of State care for the pauper insane of the State of New York. It is designed to apply to the entire State, with the exception of the counties of New York, Kings, and Monroe, in which it is believed that further legislation is needed to meet the special condition of those counties; and the main provisions of the Act are as follows:

The State shall be divided into as many asylum-districts as there are State insane asylums in the State, and the President of the State Board of Charities, the State Commissioner on Lunacy, and the Comptroller of the State are to constitute a Commission empowered to define the boundaries of these several districts. Each of the State asylums for the insane shall receive patients, whether in an acute or chronic condition of insanity, from the district in which the asylum is situated, subject to the power of removal from one State asylum to another whenever in any of the districts the patients become too numerous for the accommodations provided, in which case those in excess may be transferred to another district, preference being always given to an asylum in an adjoining, rather than to one in a remote district. Furthermore, in case any insane person, his relatives, guardians, or friends, may desire that he may become an inmate of any State asylum situated beyond the

limits of the district where he resides, and there be sufficient accommodation there to receive him, he may be taken there in the discretion of the State Commission and the superintendent of such asylum, the expense of removal being borne by such relations or friends.

There shall be erected on the grounds of each State asylum a sufficient number of buildings of moderate size, each being designed to accommodate not less than twenty, nor more than two hundred patients, to meet the wants of the pauper insane of the district in which the asylum is situated; the plans for such buildings to be subject to the approval of the Commission mentioned above. The managers of each State asylum, in erecting these buildings, shall proceed upon the rule to limit the cost of the same so that it shall not exceed two hundred and fifty dollars *per capita* for the patients it is proposed to accommodate, and shall cause the buildings to be completed, if possible, within one year after this Act goes into effect. The buildings having been completed, the Superintendents of the Poor in each county within the district are to be notified to send all insane patients under their care to the State asylum, and it shall be the duty of all Town and County Superintendents sending a patient to any such asylum, before sending him, to see that he is in a state of perfect bodily cleanliness and is comfortably clothed, in accordance with regulations to be prescribed by the State Commissioner in Lunacy. The travelling expenses are to be paid by the State, and any State asylum may be required, when necessary, to send a trained attendant to bring a patient to the asylum.

There shall be a uniform charge by all State asylums to all counties included within this Act for care and maintenance of all insane patients, not exceeding \$1.50 *per capita* per week. The State Commissioner, whenever he may deem it necessary and expedient, by reason of overcrowding, and in order to prevent it, shall in his annual report to the Legislature recommend the erection of such additional buildings on the ground of any or all State asylums then existing as shall, in his judgment, provide sufficient accommodations for the immediate prospective wants of the insane, or, if he think it more expedient, shall recommend the establishment of an additional asylum or asylums. After the completion of the buildings provided for, it is the intent and meaning of this Act that no insane person shall be kept under county care within the counties embraced in it. The managers of each of the State asylums shall hereafter furnish the Comptroller, on or before the 15th day of September in each year, an estimate of the probable number of patients chargeable to the counties who will be inmates of their respective asylums during the year beginning October 1st next ensuing, and shall also furnish an estimate of the cost of maintaining persons so chargeable to the counties during the ensuing year. On the basis of these estimates the Comptroller shall, in his next annual report to the

Legislature, state his estimate of the deficiency to be provided for by the State for the support of such insane persons, after deducting the sum paid or to be paid by the counties at the rate of \$1.50 *per capita* per week. In addition to the counties of New York, Kings, and Monroe, this Act does not embrace the State asylums for insane criminals at Auburn and Matteawan, or the State asylum for insane emigrants on Ward's Island, in New York City. The concluding sections provide that the sum of \$500,000 be appropriated out of any moneys in the treasury not otherwise designated to carry the Act into effect, that all Acts or parts of Acts inconsistent with it are repealed by it, and that it shall take effect immediately.

There can be no question that the insane are much better cared for in the State hospitals than is possible, as a rule, in the county asylums, where they are usually treated, as far as circumstances will allow, simply as the other inmates of the poorhouses, instead of having the best medical treatment by alienist specialists, and the services of the highest grade of trained attendants, with the incentives to occupation, instruction, and amusement offered by the State institutions.

The bringing forward of this measure at the present time is said to be the result of a recent movement by the boards of supervisors in a considerable number of counties to secure special legislation permitting them to take charge of their own insane, instead of sending them to the State hospitals, as it is felt that to allow the counties to do this would be a retrograde movement, with a probability of a recurrence of the horrors of the poorhouse system of former years. It is intimated that there is more or less political influence at work in favor of this movement, and a strong and united effort will, therefore, be required to secure the passage of the excellent bill of the State Charities Aid Association. It seems reasonable to suppose, however, that this effort will be crowned with success, as for nearly fifty years the State has demonstrated its ability to care for the insane with the most satisfactory results in its finely equipped hospitals.

THE CASE OF HOFMANN, THE BOY PIANIST.

JOSEF HOFMANN, the boy pianist, has been withdrawn from the stage by his father. At the time of the medical examination of the boy in New York, some two weeks before, to which we have already made editorial reference, the father said that the lad was in excellent physical condition, that he committed his music to memory without effort, and that his public performances were only a diversion to him. Within a fortnight, however, the father's opinion on all these points underwent a complete reversal, and the manager was informed of the termination of the contract on account of the boy's physical inability to continue the performances. The results of the medical examination on the second occasion did not differ

materially from the first; namely, that the boy was not yet suffering very seriously from the confessedly trying hygienic conditions under which he had been placed. One physician even went so far as to say, according to the reports, that the lad would suffer if deprived from the recreation of playing in public. *Per contra*, it is stated on medical authority that he has suffered from enuresis during and after his performances, and at present he is said to have a temperature of over 100°, with a pulse of 97.

It is rather difficult to judge between the mildly conflicting medical testimony, to say nothing of the strongly conflicting testimony of those who look upon the boy chiefly from a commercial point of view. The lad's career is certainly far enough from what the hygienist would advise for a child of such an age, but his bodily health is probably not very different from what it was two weeks ago, when the parental interest coincided more closely with the managerial than at present. With a father on the one hand, and a manager on the other, neither of whom allows his business vision to be obscured by sentimental considerations, the boy needs an impartial medical tribunal, with something more, if possible, than merely advisory functions, to protect him from unpleasant trituration between the upper and nether millstones.

MEDICAL NOTES.

—The *Sanitary Era* has noticed for some time that about every fourth week — falling on one or the other side, or on both sides, of the contiguous borders of the calendar months — notably exceeds the average of the others in number of births. "Baltimore," it remarks, "which affords excellent returns for comparisons, again gives us for the first week of January 256 births, to an average of 137 for the following three weeks — an excess of 87 per cent. — and this is substantially the usual proportion, as we have hereinbefore noted. Do the medical authorities note such a rule as this? and how do they account for it? Is it connected with a prevalent relation of the catamenial period to the change of the moon? Kansas City, likewise, reports 71 births in the first week of January, against a following average of 38."

—The *Medical Record* says that Dr. Botkin, the physician to the Czarina of Russia, is said to have obtained his appointment by the exhibition of a little independence. He was called one day, so the story goes, to the Winter Palace, to prescribe for her imperial majesty, who was suffering from a cold. But the empress refused to disrobe sufficiently to allow him to auscult her chest, whereupon Dr. Botkin took his departure, saying that he didn't care to have anything to do with patients of that kind. The Czar was so pleased with this manifestation of spirit on the part of the physician that, instead of sending him to Siberia, he recalled him and appointed him special physician to the empress on a yearly salary of 100,000 rubles.

BOSTON.

—The twentieth anniversary of the foundation of the Washingtonian Home, was celebrated February 20th, with addresses by Hon. Joseph Story; by Dr. T. D. Crothers, of Hartford, Conn., who said that of the fifty inebriate asylums in the world, the Washingtonian Home was the first and the foremost; and by Dr. Albert Day, the superintendent.

—The annual report of the Boston Water Board, just issued, says that analyses by Professor Wood, of Harvard College, show that the Mystic supply appears to have been, through the year, of about the same quality as last year, but from the nature of its surroundings, the board not only can expect no improvement, but must anticipate a gradual deterioration. Basin 3, Sudbury River, Farm Pond, Lake Cochituate and the service waters are in better condition than in October, 1885 or 1886, and that of Chestnut Hill Reservoir better than in 1886. Referring to efforts on the part of Chelsea, Somerville and Everett to obtain control of the Mystic supply, the following remarks are made: "If they think, or can be brought to think, that the Mystic system would, if relieved of the necessity of supplying Charlestown, serve their purposes for a term of years, and that, with the Mystic Water Works in their hands, they could afford to take the chances of that term of years and of thereafter getting the Shawsheen or some other supply to eke out their wants, we should be ready to recommend the City Council to take measures for the transfer of the Mystic Water Works to their ownership. We are ready to dissolve partnership on the most favorable terms. They have no claim whatever upon Boston, except for Mystic Water, and Boston has no other water to sell them."

—Rev. Dr. E. E. Hale, in behalf of the directors of the Seashore Home for sick children, at Winthrop, has issued an appeal to the public for \$10,000, with which to remove the old-fashioned country-house, hitherto used for the home, to one side of the lot, and to build a second house from plans prepared for the purpose. This addition will double the capacity of the home.

—A portion of one of the two new wards for contagious diseases, at the Boston City Hospital was at length opened for patients last week, and the cases of scarlet fever were transferred to it. The delay in getting these wards ready has been very great. It is as yet too soon to judge in all respects of the results obtained.

NEW YORK.

—The total receipts of the Hospital Collection for 1887 are now announced as \$50,408.10. The Distributing Committee of the Hospital Saturday and Sunday Association met on February 23d at the Mayor's office to make the annual distribution of the undesignated fund, which, after the deduction of expenses for the year, amounted to \$43,500. This is \$6,500 more than last year, and, owing to the withdrawal of the Presbyterian Hospital, and its share

going to the rest, it represents fully \$10,000 more. The institutions which receive the largest amounts are the following: Mount Sinai Hospital, \$7,550.56; St. Luke's Hospital, \$6,492.71; Society for the Relief of the Ruptured and Crippled, 5,200.68; German Hospital, \$4,735.28; St. Mary's Hospital for Children, \$2,425.68; Home for Incurables, \$1,997.93; House of Rest for Consumptives, \$1,716.73; House of the Holy Comforter, \$1,361.13; Montefiore Home, \$1,226.10. Of the designated contributions, St. Luke's gets \$1,102.81, St. Mary's \$803.69, and the German Hospital \$250.

—A serious outbreak of cerebro-spinal meningitis has occurred at the stables of the New York Riding Club on 58th Street, near Central Park, where are kept many valuable horses belonging to some of the wealthiest and most prominent citizens. An extended investigation of the other stables around the lower end of the Park has failed to disclose any other cases, and it is believed that the disease is due to local influences. The sanitary condition of the Club stables themselves is all that could be desired; but it is said that there is a large accumulation of sewage in some of the neighboring basements and cellars.

—At a meeting of the Section on Laryngology and Rhinology of the New York Academy of Medicine, held February 28th, Dr. Franklin H. Hooper, of Boston, read a paper on "Adenoid Vegetations in Children; their Diagnosis and Treatment"; which was followed by remarks upon "The Relation of these Growths to Middle Ear Disease," by Dr. Clarence J. Blake, of Boston. Among those announced to take part in the discussion were Drs. S. W. Langmaid, of Boston; J. N. Mackenzie, of Baltimore; T. R. French, of Brooklyn; and Beverley Robinson, F. H. Bosworth, R. P. Lincoln, D. B. St. John Roosa, Gorham Bacon, Samuel Sexton, H. D. Noyes, D. B. Delavan, and C. C. Rice, of New York.

PHILADELPHIA.

—Prof. R. A. F. Penrose has resigned from the faculty of the Medical Department of the University of Pennsylvania. It is rumored that a *concours* is to be held. If this is so, it is probably the intention to select the Professor of Obstetrics from among the younger men.

—The County Medical Society is holding very interesting meetings. Among the cases recently reported to this Society was one of removal of the kidney for bullet-wound, by Dr. M. Price. The patient was a girl fifteen years old, who received a gun-shot wound of the abdomen. The cavity was opened and the bullet traced to the right kidney, which bled freely, indicating a lesion of the vessels, and suggesting the propriety of nephrectomy. The patient recovered perfectly. The reporter would have preferred the lumbar section had he known that the kidney would have to be removed; nor would he have extirpated the organ had he not found it impossible otherwise to check the hemorrhage. At the same meeting, Dr. Frank Woodbury reported a case of pyo-nephrosis

following repeated attacks of vesical catarrh in a woman, thirty-five years of age, in which the right kidney was removed by lumbar incision by Dr. John H. Deaver, assisted by D. Hayes Agnew and the staff of the German Hospital. The patient perished on the fifth day. Dr. C. B. Peurose reported a case of a woman over fifty years of age, who suffered with malignant stricture of the descending colon. He made a laparotomy and removed the tumor, with ten inches of the large bowel, and sutured the ends of the gut together. A week later, when he reported the case, the patient was doing very well, and had had no bad symptoms. It was believed to be the first case in this country in which so large a portion of the large intestine had been excised. Dr. W. W. Keen subsequently exhibited a case of McEwen's operation for the radical cure of hernia, in which the hernia had returned, requiring the patient to wear a truss. He thought it instructive to report failures, as well as successes.

— Several cases of alleged cerebro-spinal fever were reported recently in the northern part of the city. The sickness occurred among the members of a sleighing-party, two of whom died. As this happened a fortnight ago, and no new cases are reported, it is believed that there may have been an error in diagnosis.

— The Philadelphia Dental College held its annual commencement on the 24th inst., and graduated a class of 119, which is said to be the largest class ever graduated by a dental school in this country or elsewhere.

Correspondence.

THE FOURTH YEAR DEGREE AT THE HARVARD MEDICAL SCHOOL, 1886-87.

HARVARD MEDICAL SCHOOL, February 27, 1888.

MR. EDITOR,—Will you kindly allow me a few lines to reply to a letter from Dr. E. Scott Dow, in reference to the fourth year degrees conferred in June last?

I can nowhere find on page 183 of the *Journal* the statement made by him, "that the fourth year class of 1886-87 numbered twenty-one, that eleven of them applied for the degree, and that five received it." There is a table showing the members of the fourth class, of the applicants for the degree, of the number who failed, and the number who received it *cum laude*. (The only error that is in this table was in the original, where the last figure should be 4 instead of 5.) It is a well-known fact that the applicants for the degree are not from the class of that year as it stands in the catalogue, a number always coming up out of course. And it is only by comparison of a number of years that a correct conclusion can be drawn as to the number of graduates in comparison with the number of students. If Dr. Dow had properly read the report as given in the *Journal*, he would have seen it was not intended to do any injustice to him, but simply to give information in regard to the general status of the fourth year students.

In regard to the catalogue class of 1886-87, the number of applicants for the degree was eight, of whom two received it, one *cum laude*, but recommended too late to appear in its proper place on the Commencement programme.

Very truly yours,

W. F. WHITNEY, M.D., Secretary.

METHODS OF MENSURATION.

DOVER, N. H., February 24, 1888.

MR. EDITOR,—I would call the attention of the profession to a simple, but not unimportant matter—to the proper method of measuring the sides of the thorax, or abdomen, for the purpose of determining the amount of unilateral enlargement in cases of pleuritic effusions, hepatic congestions, etc.

In a trial of a suit in the courts recently, the plaintiff claimed damages for injuries received on the highway, and two physicians testified as experts for the prosecution that there was an enlargement of one inch of the right side over the liver, as compared with the left side of the body. Three physicians testified for the defence that there was only one-half an inch difference between the two sides.

The difference in testimony was due to the different methods of measuring. One set of witnesses took separate measurements from the median line in front to the spinous processes behind on each side; whilst the other witnesses read off in both directions on the tape passed around the body, from the median line in front to the spinous processes behind.

The former method is open to criticism, since it contains three sources of error. The first source of error lies in the fact that there are two measurements to be taken instead of one, and in so doing there is greater danger of failing to start exactly on the *linea alba*, and of ending exactly over the centre of the spinous process. Secondly, the method does not insure measurements in the same horizontal plane; and, thirdly, the tension of the line may vary when each side is measured by itself, as in the last method.

Should we not have more harmony among witnesses if the first method only was followed, and should we not be more exact in diagnosis? Yours truly,

JOHN R. HAM, M. D.

[Undoubtedly it is to facilitate the method of measurement preferred by Dr. Ham that tapes have been devised, graduated and reading both ways from a common centre.—Ed.]

THE MURDOCK LIQUID FOOD HOSPITAL AND DR. H. O. MARCY.

BOSTON, February 24, 1888.

MR. EDITOR,—I ask the use of your columns to reply to Dr. H. O. Marcy's letter of the 16th, in relation to his connection with my Free Surgical Hospital for Women.

The letter is inaccurate in everything relating to facts, which I attribute to his short memory, and in correcting a few points I will show how he was connected with me and my hospital.

(1) His connection was not made by me, but by him through my head surgeon.

(2) He received no pay from me, but had and used the privilege of putting in private patients and receiving from them a fee for operations, nothing being charged or received by me in any case for board or attendance.

(3) We never had any disagreement until I refused to give him the control of my Gainsboro' Street Hospital, and then it came from him.

I quote from his letter of July 21, 1887 concerning displacement of Dr. Packard, who had been with me three years.

"The only misgiving in carrying this into effect, may be your obligation to Dr. Packard, a gentleman whom I very much like. If you think you had better do this, and if necessary indemnify him for any obligation you feel you may owe him, I am yours at command upon the conditions previously considered. I need not assure you that you have my best wishes in your good work, and that my relations with you have been to me highly satisfactory."

The other condition referred to is the incorporation of the hospital, or the appointment of a Board of Directors; to this I assented and the board was selected but not organized, as he was not satisfied with this alone.

Again, July 25, 1887: "I would wish for no more pleasant personal relations than have been between us from

the beginning, and should be glad to avail myself of the privilege of sending patients to you so long as I may be permitted. With the very highest considerations, believe me,

Very respectfully, HENRY O. MARCY."

Since that date he has sent me about two patients monthly.

I cannot see where I have compromised Dr. Marcy. My hospital on Huntington Avenue, is open to the inspection of the profession, under the sanction, and subject to the criticism of the proper authorities of the Massachusetts Medical Society. Before accepting the position of surgeon to my hospital, Dr. E. W. Cushing visited Natick, Worcester and Springfield, to consult with the chairman and senior members of the Committee on Ethics and Discipline of that Society. By their advice the whole matter, including the relations of the medical officers of the hospital, was submitted by Dr. Cushing in writing to the Committee on Ethics and Discipline. From its answer, received after a meeting of the council had intervened, it was decided to be a proper and honorable thing for a member of the Massachusetts Medical Society to hold a position as surgeon in my hospital. I enclose a copy of this correspondence.

By this correspondence, which was made with my knowledge and assent, I became bound to receive with respect any suggestions emanating from the Committee of Ethics and Discipline, in case my hospital should in any way merit its censure. I promised Dr. Cushing never to put him, nor his consultants or assistants in any position which should merit such censure. I never have done so, and I have no intention, or wish to do so. All this Dr. Marcy knew when he came here, and what he says about any other understanding, I must attribute to a confused or inaccurate use of language on his part.

The good work which has been done in my free hospitals this last year, being over five hundred operations—free as far as I am concerned—ought to entitle me to the respect of the profession, and all who visit me accord it to me.

I certainly was liberal in trying to remove from the mind of Dr. Davis, the president of the American Medical Association, any injury which Dr. Marcy's reputation might have suffered, by being connected with my hospital, as I gave Dr. Marcy authority to invite said president with a committee appointed by him, to visit Boston to inspect my hospital and I would pay the bills, and he should act on their instructions after the visit, not before, as they had no right to give advice without knowledge. This offer was declined by Dr. Marcy.

In closing, I would say my hospital on Gainsboro' Street was organized before Dr. Marcy came into the Huntington Avenue Hospital, and that there is no professional connection whatever between the surgeons of two hospitals, and that since he left me the usefulness of the regular hospital has increased, as the number of patients has increased, and these are sent in by physicians in most cases. To accommodate all these patients I have added two wards to the regular hospital. Moreover, many eminent physicians who personally were indifferent or critical, now send patients here and are present at operations. In point of fact, Dr. Marcy must have forgotten that he operated here on Mrs. G., on September 17, 1887, and that he was quite officious in inviting his friends here, and in sending in and showing his cases, when operations were performed here on September 19, 1887, by a distinguished foreign surgeon, in presence of some of the most eminent medical men of New York and of Massachusetts.

Yours respectfully, ALBERT L. MURDOCK, Proprietor.

REPORTED MORTALITY FOR THE WEEK ENDING FEBRUARY 18, 1888.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diph. & Croup.	Measles.	Scarlet Fever.
New York	1,481,920	796	307	18.56	23.01	8.06	1.19	3.90
Philadelphia	993,801	448	140	10.12	17.38	3.52	.32	2.24
Brooklyn	745,103	384	130	13.77	23.49	6.48	—	3.51
Chicago	725,000	—	—	—	—	—	—	—
St. Louis	420,000	—	—	—	—	—	—	—
Baltimore	417,000	188	68	14.31	15.60	3.18	7.95	—
Boston	400,000	206	68	9.31	25.42	3.92	.49	1.47
New Orleans	242,750	102	25	9.80	—	3.92	—	—
Buffalo	225,000	—	—	—	—	—	—	—
District of Columbia	210,000	114	45	16.72	14.96	1.76	8.77	.88
Pittsburgh	210,000	72	29	8.34	26.41	—	—	—
Montreal	186,257	—	—	—	—	—	—	—
Milwaukee	170,000	61	27	16.39	6.54	8.20	1.64	—
Providence	121,000	—	—	—	—	—	—	—
Richmond	100,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,000	25	10	8.00	20.00	4.00	—	—
Charleston	60,145	29	7	—	6.90	—	—	—
Portland	40,000	14	5	14.28	14.28	14.28	—	—
Worcester	68,383	14	7	7.14	14.28	—	—	—
Lowell	64,051	31	10	16.15	16.15	9.69	—	—
Cambridge	59,660	28	12	10.71	21.42	3.57	—	—
Fall River	54,803	28	11	7.14	17.45	—	—	—
Lynn	45,811	15	4	13.33	13.33	6.66	—	6.66
Lawrence	38,825	26	6	11.55	15.40	3.85	—	3.85
Springfield	37,577	—	—	—	—	—	—	—
New Bedford	33,393	12	2	8.33	16.65	—	—	—
Somerville	29,492	13	5	23.07	30.76	15.38	—	7.69
Salem	28,084	16	6	18.75	12.50	12.50	—	—
Holyoke	27,894	12	5	16.66	33.33	—	8.33	—
Chelsea	25,709	—	—	—	—	—	—	—
Taunton	23,674	6	1	—	16.66	—	—	—
Haverhill	21,795	—	—	—	—	—	—	—
Gloucester	21,713	11	4	9.09	27.27	9.09	—	—
Brockton	20,783	6	2	—	16.66	—	—	—
Newton	19,759	5	1	20.00	20.00	—	—	—
Malden	16,407	7	2	—	14.28	—	—	—
Fitchburg	15,375	7	2	7.14	7.14	7.14	—	—
Waltham	14,609	3	1	33.33	—	33.33	—	—
Newburyport	13,716	4	0	—	—	—	—	—
Northampton	12,896	—	—	—	—	—	—	—

Deaths reported 2,693: under five years of age 941; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 363; acute lung diseases 523, consumption 366, diphtheria and croup 143, scarlet fever 57, measles 38, typhoid fever 33, diarrhoeal diseases 25, cerebro-spinal meningitis 13, whooping-cough 13, erysipelas 11, malaria fever 11, puerperal fever 10, small-pox four, typhus fever one. From typhoid fever, Philadelphia 15; New York four, Pittsburgh three, Baltimore, Lowell and Fall River two each, Brooklyn, Nashville, Lawrence, New Bedford and Holyoke one each. From diarrhoeal diseases New York 12, New Orleans five, Philadelphia four, Brooklyn and District of Columbia three each, Boston and Cambridge one each. From cerebro-spinal meningitis, New York seven, Boston two, Baltimore, District of Columbia, Milwaukee and Worcester one each. From whooping-cough New York six, Boston two, Philadelphia, Baltimore, Pittsburgh, Milwaukee and Salem one each. From erysipelas, New York four, Philadelphia two, Brooklyn, Baltimore, Boston and Cambridge one each. From malaria fever,

New York seven, Brooklyn two, Baltimore and New Orleans one each. From puerperal fever, Brooklyn three, New Orleans Pittsburgh and Milwaukee two each, Boston one. From small-pox, Brooklyn four. From typhus fever, New York one.

In the 28 greater towns of England and Wales with an estimated population of 9,339,775, for the week ending February 14th, the death-rate was 21.9. Deaths reported 3,445: infants under one year of age 872; whooping-cough 248, scarlet fever 75, fevers 52, diphtheria 42, measles 35, diarrhoea 33, small-pox (Sheffield 17, Leeds and Bristol one each.) 19.

The death-rates ranged from 13.4 in Bradford to 32.2 in Plymouth; Birmingham 17.0; Blackburn 25.9; Hull 18.1; Leeds 19.5; Leicester 21.3; Liverpool 18.3; London 21.1; Manchester 27.3; Nottingham 18.8; Sheffield 22.1; Sunderland 20.2. In Edinburgh 19.5; Glasgow 26.2; Dublin 29.9.

The meteorological record for the week ending February 18, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole, of the United States Signal Corps:—

Week ending Saturday, Feb. 18, 1888.	Barom- eter.	Thermometer.			Relative Humidity.			Direc-tion of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.		
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration Hrs. & Mins.	Amount in Inches.
Sunday, ... 12	30.11	26.0	30.0	20.0	73.6	72.0	83.0	76.0	N.	N.E.	N.E.	7	12	5	O.	C.	F.		
Monday, ... 13	30.14	33.0	42.0	25.0	76.0	65.0	77.0	73.0	N.	E.	S.W.	5	4	8	C.	C.	C.		
Tuesday, ... 14	30.01	45.0	56.0	31.0	77.0	44.0	70.0	64.0	N.W.	S.W.	W.	14	4	8	C.	C.	C.		
Wednes- day, ... 15	30.25	19.0	45.0	1.0	66.0	61.0	72.0	66.0	N.W.	N.W.	N.W.	18	24	20	F.	C.	C.		
Thurs-day, ... 16	30.29	9.0	15.0	4.0	62.0	38.0	65.0	55.0	N.W.	W.	W.	18	16	12	C.	C.	C.		
Friday, ... 17	29.85	30.0	36.0	13.0	76.0	47.0	67.0	63.0	S.W.	S.W.	N.E.	18	10	4	O.	F.	F.		
Saturday, ... 18	30.05	31.0	36.0	27.0	77.0	65.0	61.0	67.0	N.W.	N.	E.	5	8	5	O.	O.	C.	1	*T
Mean, the Week.	30.100	27.6	37.0	16.0				66.3										1	*T

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 18, 1888, TO FEBRUARY 24, 1888.

VOLLUM, EDW. P., surgeon and lieutenant colonel. Granted leave of absence for four months, with permission to go beyond sea and to apply for an extension of two months. S. O. 41, A. G. O., February 20, 1888.

GARDNER, E. F., captain and assistant surgeon. Granted leave of absence for one month and twenty-one days. S. O. 41, A. G. O., February 20, 1888.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING FEBRUARY 25, 1888.

WARDEN, EUGENE, passed assistant surgeon. Relieved from duty at Marine Hospital, Chicago; ordered to Marine Hospital, Mobile, Ala., February 16, 1888.

NORMAN, SEATON, assistant surgeon. Relieved from duty at Marine Hospital, New York, to assume charge of the Service at Evansville, Ind., February 6, 1888.

WILLIAMS, L. L., passed assistant surgeon. Promoted and appointed passed assistant surgeon from February 10, 1888. February 23, 1888.

COEN, J. Q., assistant surgeon. Appointed an assistant surgeon February 21, 1888. Assigned to duty at Marine Hospital, Chicago, Ill., February 25, 1888.

STONE, J. B., assistant surgeon. Appointed an assistant surgeon February 21, 1888. Assigned to duty at Marine Hospital, New York, N. Y., February 23, 1888.

CONDICT, A. W., assistant surgeon. Appointed an assistant surgeon February 21, 1888. Assigned to duty at Marine Hospital, Chicago, Ill., February 25, 1888.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.—The regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, March 5, 1888, at 8 o'clock. Readers: Dr. Knight, "The Selection of a Climate for Patients with Pulmonary Tuberculosis." Dr. Bundy, "One, Possibly Two, Cases of Graves' Disease."

CHARLES F. STRONG, M.D., Secretary.

SUFFOLK DISTRICT MEDICAL SOCIETY. SURGICAL SECTION.—There will be a meeting of this Section on Wednesday evening, March 7th, at 8 o'clock. Dr. O. K. Newell will read a paper on "The Surgical Use of Helix's Continual Bath or Water-Bed." Dr. M. H. Richardson will report a "Case of Nephroptosis." Dr. G. W. Gay will present a communication on the "Treatment of Fractures of the External Condyle of the Humerus." Dr. S. J. Mixer will demonstrate a new method for removing powder grains from the face.

G. H. MONKS, M.D., Secretary.

RHODE ISLAND MEDICAL SOCIETY.—The usual quarterly meeting will be held in Lyceum Hall, 92 Westminster Street, Providence, on Thursday, March 8, 1888, at 10 o'clock, A. M. Paper by Dr. A. H. Harrington, on "Acute Ascending Paralysis." Dr. S. Oscar Myers will report a "Case of Belladonna Poisoning." Dr. Hyrum Whitford a "Case of Skin Disease in a New-Born Infant," and Dr. W. F. Morrison a "Case of Function of the Heart," with exhibition of the patient. Dr. W. J. McCaw, curator of the museum will exhibit specimens of interest.

W. R. WHITE, Recording Secretary.

H. G. MILLER, President.

APPOINTMENTS.

Drs. Edward Reynolds and Charles W. Townsend have been appointed Physicians to Out-patients in the Boston Lying-in Hospital.

BOOKS AND PAMPHLETS RECEIVED.

Cystitis in the Female. By Henry O. Marcy, A.M., M.D., LL.D., of Boston, U. S. A. President of the Section of Gynecology, Ninth International Congress; late President of the American Academy of Medicine, etc. Reprint. 1887.

Hysteria and its Relation to Diseases of the Uterine Appendages. By S. C. Gordon, M.D., of Portland, Maine. Reprint. 1886.

Agnosticism, Based on Physical Science. Second (Revised) Edition. By Alex. W. Stein, M.D., Visiting Surgeon to Charity Hospital, Professor Visceral Anatomy and Physiology, New York College of Dentistry, etc. 1888.

A Case of Extra-Uterine (Tubal) Pregnancy. Rupture at Three Months; Laparotomy; Recovery. By S. C. Gordon, M.D., Portland, Me., Lecturer on Diseases of Women in the Portland School for Medical Instruction, Surgeon to the Maine General Hospital, etc. Reprint. 1888.

Original Articles.

THE MALARIAL INFLUENCE OF THE TYPHOID FEVER OF 1887 IN BOSTON.¹

BY EDWARD N. WHITTIER, M.D.,

Assistant Professor Clinical Medicine, Harvard Medical School;
Visiting Physician Massachusetts General Hospital.

In complying with the recent request of our President to prepare a paper for this evening, I found in the subject selected unexpected difficulties: difficulty in dealing with a relatively novel theme, difficulty in arranging the material, so that forces, sometimes considered to be at variance, should appear, as it seems to me they are, coöperative, and difficulty in so condensing facts, as to place before you those facts upon which I have based my opinion in the time and within the limits at my disposal.

I would ask your particular attention to the charts, and to the synoptical, selected, illustrative cases, and I desire to acknowledge the very valuable assistance of Dr. Jacobs, recently senior house-physician, Massachusetts General Hospital, in their preparation. The charts are intentionally so arranged as to place before you: first, the schematic representation of the temperature curve in typhoid fever after Liebermeister; next, a chart from a case not subject to any other than the influences present at the time, in Boston, to modify the course of typhoid fever; third, a chart from the case of a man who had previously to the recorded history of modified typhoid acquired intermittent fever in a malarious region; fourth, a chart from the case of a patient, previously healthy, acquiring typhoid fever in a locality until recently free from malarious influences, and the chart of remittent fever after Demiss, and of tertian ague after Strümpell; these last, as well as the first one, are for the purposes of comparison, and to aid in the demonstration of the relation between the causative and combined influences (typhoid and malarial) and the effect which I designate as the malarial influence on the typhoid fever of 1887 in Boston.

Permit me to call your attention anew to the fact, long since demonstrated, that in the combined typhoid and malarial fevers, each element modifies the other: for instance, periodicity is less distinctly marked, and the influence of anti-periodic remedies greatly diminished by the co-existing typhoid element.

Entering upon a term of service at the Massachusetts General Hospital on the 1st of November last, at a time when the annual outbreak of typhoid fever was already well advanced, I was at once deeply impressed by the wide variations presented by the bedside charts of temperature, pulse and respiration, from those made familiar by an experience of many years, and it was the strong evidence afforded by a study of these variations, convincing me of a co-existing and modifying influence of an unaccustomed form in the typhoid disturbances of last year, which has led to the preparation and presentation of this paper.

If we follow the chronological order of the local literature on the subject of intermittent fever in Massachusetts, we shall also follow quite closely the geographical order of its progress or development in the last half century; for in 1834, Dr. Holmes wrote the Bolyston Prize Essay on "Facts and Traditions Respecting the Existence of Indigenous Intermittent

Fever in New England," in which he plainly sets forth the frequency of the disease in the lower towns of the Connecticut valley, and its relative infrequency in the eastern sections of the State.

In 1880, Dr. Adams, of Pittsfield, prepared the admirable paper to be found in the "Supplement to the Second Annual Report of the State Board of Health, Lunacy and Charity," and by careful analysis of the facts, gathered by him, with infinite labor and pains, demonstrated the eastwardly advance of the disease, and if I may use the expression, located the head of the column in strong force, and well entrenched in the valley, and on the hillsides of the Housatonic river, and pickets and outpost stations in Hampden, Worcester, and Middlesex counties.

In 1886, Dr. Z. B. Adams, of Framingham, read at the annual meeting of the Massachusetts Medical Society, his paper on "An Epidemic of Malaria in Eastern Massachusetts," with particular description of the outbreak of 1885, in Framingham. This epidemic included two hundred or more cases of varying degrees of severity, generally of the tertian type, and Dr. Adams's valuable contribution to the literature of the subject, presents the views of the best observers, while at the same time he places on record his observations and statistics of an epidemic of malaria in an unaccustomed region, and states, "intermittent fever seems to have been on a hostile march through New England, generally in a north-easterly direction, during a period of fifteen years, until at last it has reached the geographical centre of Eastern Massachusetts."

During 1887, Natick, Waltham and the neighboring towns, have been invaded in strong force, and the disease advancing through the valley of the Charles River, has levied a heavy assessment upon the Newtons, Riverside and Auburndale, and has forced Cambridge to enroll a large contingent.

From information in my possession I have reason to believe that within the limits just indicated, there have been at least three hundred and fifty cases of tertian ague during the past twelve months.

In 1876, Dr. Woodward read before the International Medical Congress in Philadelphia, his paper, now classical, on what he termed typho-malarial fever, and he cited of uncomplicated typhoid fever, occurring during the war, 80,272 cases, with a mortality among white troops of 35.89%, among colored troops of 55.68%; while of the compound disease which he designated as typho-malarial, 57,400 cases are cited with a mortality among white troops of 8.13%, among colored troops of 17.37%, and he demonstrated beyond cavil the conjoint and modifying existence of each factor, the malarial as well as the typhoid, and secured for the term he employed, a permanent position in medical nomenclature. Whatever objections may be raised to this compound prefix, typho-malarial, and the objections are many and various, it nevertheless must be admitted to express tersely, comprehensively, and conveniently, a positive association of two distinctly different diseases.

I concede that in localities constantly malarious, that influence overrides and at times quite nearly masks, the typh-element, and that it is by reason of this well-recognized fact that Woodward's conclusions have been so strongly contested, even so late as at the meeting of the Association of American Physicians last year, when Professor Atkinson, of Maryland, in a very able paper, deplored the confusion in inaccu-

¹ Read before the Boston Society for Medical Improvement, February 13, 1888.

racy which had increased of late from a too ready acceptance of Woodward's views; but with all this, this paper has but little to do, for I am quite well satisfied that the class of cases included in Dr. Woodward's tables, varies in important respects from those malarial modifications of typhoid fever now occurring in Eastern Massachusetts, and that the discussion which followed the presentation of Dr. Woodward's paper, and preceded the adoption of his term, typho-malarial, and its qualifying definition, can be appealed to to furnish evidence of the differences in the degree of preponderance of the concurring elements, then and there, as compared with those of to-day and here—then and there malarious, now and here typhoid.

I have traced with extreme care the malarial movements eastward, until I am satisfied that it has effected an important change in the symptomatology of typhoid fever in Boston and vicinity, and that an etiological factor of much significance has been recently added to modify the course of our chief continued fever; and that in this vicinity it should now be clearly recognized that while the typh-elements of necessity predominate, and must continue to predominate, malaria can and does not infrequently nor feebly modify the course of typhoid fever, and that we now have to deal with a disease, which is the resultant of the factors, which, when acting separately, can produce either typhoid or malarial fever.

The typhoid fever charts at the Massachusetts General Hospital for the years 1885-86, are chiefly of value as illustrations of the therapeutics of modern antipyretics; they are not important in the sense of contributing to our knowledge of the natural history of the disease.

But in the year 1887, the opinion which prevailed, the reactionary opinion, if I may so express it, relative to the necessity as well as the propriety of employing the modern synthetical compounds for diminishing heat-production and reducing temperature, resulted in their comparative disuse, and the charts which I make use of in connection with this paper, may be accepted as those of typhoid fever, unmodified except by the influences which I designate as malarious; they are derived from a considerable number of cases quite closely related and uniform in symptoms, a class of cases which I believe to be increasing in this community and demanding the thoughtful consideration of every practitioner of the art and science of medicine, desirous above all things of surrounding his patients with every safeguard, and the highest degree of protection.

One interesting fact should not be lost sight of, and it is this, there is good reason for concluding that the malarial modification of typhoid fever is most conservative, for it appears to have been the opinion of the earlier observers of the outbreaks of malarial fever in Western Massachusetts, that the malarial diminished not only the force but in a marked degree the frequency of the typhoid fevers.

Admitting the correctness of Dr. Woodward's tables the mortality in uncomplicated typhoids of 35.89% were reduced by the malarial complication to his "typho-malarial" cases, to 8.13+%, or to express it in another way, the mortality among white troops caused by uncomplicated typhoid was $4\frac{1}{2}$ times greater than the same disease when combined with malarial influences, and therefore I think there is warrant for the opinion that the typh-process is so modified by the malarial

influence as to be stripped of some of its most dangerous features. The disease under consideration in this paper is primarily and persistently typhoid, by some described as a new hybrid of old and well-known pathological conditions, in which the exact train of symptoms is as variable as the degree of preponderance attained by each of the concurring elements.

It is an endemic infectious fever, whose pathology finds constant expressions in lesions of the intestinal mucous membrane, of Peyer's patches, enlargement of the spleen and secondary changes in the mesenteric glands; a fever whose natural course varies from that of typhoid fever, because it is modified by the earth-born poison, the miasm of malaria with which its initial cause blends.

The strong diagnostic points are: that typhoid fever of considerable duration is modified in its history and has added to it chills of varying degree of periodicity, generally tertian in type however, not followed by evidences of inflammation either thoracic or abdominal but accompanied by temperature changes of wide range, with distinct intermission, and requiring active measures to prevent collapse, because of a tendency in that direction, in degree proportionate to the co-existing exhaustion, induced by the preëxisting ante-dating typhoid fever process.

I believe that its purest type will be found in regions where malarious fevers are non-indigenous, inconstant and infrequent, subject to cyclic invasions, or for instance, in Massachusetts, 1798, 1836, 1880-87, a periodicity of about forty years. So that during the century in which it has been so well recorded here, it has come up out of the South, from beyond the isothermal line of 70° F, mean summer temperature where malaria is conceded to be endemic, and advancing northward, bending slightly westward into the valley of the Housatonic, then gaining ground to the east until at last moving down the valley of the Charles River, it has reached its easternmost point and its limit on the shores of Massachusetts Bay.

CASE I. Entered November 28, 1887. Male, aged twenty-eight, single. Born at Prince Edward's Island. Lived for several years in Eastern Massachusetts, Danvers, Worcester and Somerville. For past seven months worked in Massachusetts General Hospital, as ward-tender to the medical side.

Previous habits and health excellent. Symptoms of illness began three or four days previous to entrance, and consisted of anorexia, headache, backache, pain in limbs, dryness of lips, mouth and throat; prostration, general malaise, feverishness, restlessness, and sleeplessness at night, slight cough, without expectoration, abdominal pain and tenderness, constipation.

Examination. Skin hot and dry; face flushed; lips and tongue dry, latter with brownish coat; pulse good strength, rather bounding; lungs, heart, liver, negative; abdomen slightly distended, generally resonant; tenderness and gurgling in right iliac fossa; few rose spots, scattered; spleen not felt; area splenic dulness, 3 x 4 inches; urine negative.

Through the remainder of the first and during the second week, headache and backache persisted; constant complaint of pain and tenderness in right iliac region, and upward and transversely along course of ascending and transverse colons; constipation; restless and sleepless at night; mind clear; tongue dry, thick brown coat; new rose spots; abdomen more dis-

tended, tympanitic; splenic dulness increased to 4 x 6 inches.

In third week. Patient much weaker; mind rather dull; headache gone; abdominal pain and tenderness as before; some cough, with frothy mucus expectoration; constipation; pulse soft, slightly dichrotic; few medium and fine moist râles at bases posteriorly; rose spots fading; no new ones; distension of abdomen as before; one defecation with a trace of blood.

In fourth week. Improvement great; abdominal pain, tenderness and distension gone; râles in chest diminished; tongue cleaning; pulse good; splenic dulness, 2 x 4 inches.

December 20th. Feeling of prostration; pain under left scapula; sudden rise in temperature; no physical signs to account for it.

December 21st. Feeling well again.

In fifth week. Convalescence apparently established till evening of December 25th, when made complaint of chilliness, headache and general malaise, at 11 P.M., pronounced rigor for three-quarters of an hour, followed by fever. Given quinine, grs. ii, every two hours.

December 27th. Chill at 3 A.M., not quite so severe as before.

December 28th. Chilly sensations at night; no rigor; ringing of ears. Quinine reduced.

In following weeks. No more chills nor chilly sensations, rapid improvement, and discharge from hospital.

CASE II. Entered August 17, 1887. Male, aged twenty-four, married. Born at Troy, N. Y. Previous health good, except for intermittent fever nine years before in New York State.

Symptoms of illness began about two weeks previous to entrance, and consisted of anorexia, general malaise, deafness, epistaxis, diarrhœa.

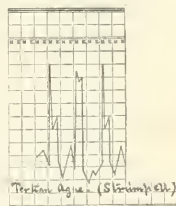
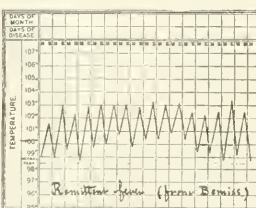
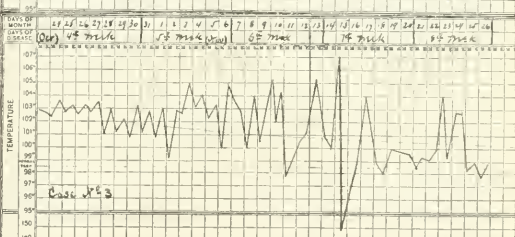
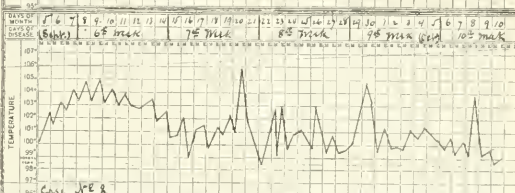
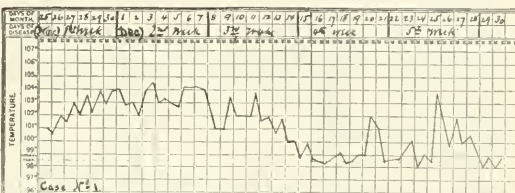
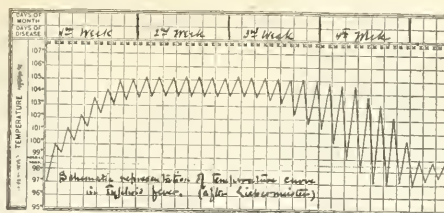
Examination. Fairly nourished; pale; nervous; somewhat confused; muscular tremors of lips, tongue and hands; tongue dry and coated; slight cough; lungs negative, except for few fine scattered moist râles; heart negative; abdomen distended; numerous rose spots; right iliac gurgling; spleen not felt; splenic dulness, $3\frac{1}{2} \times 7$ inches; urine negative.

In third week (first in hospital). Patient restless and delirious; diarrhœa; rose spots present; abdomen distended; high evening temperature.

In fourth week. Improvement; less diarrhœa; less abdominal distension; rose spots fading.

In fifth and sixth weeks. Rise in temperature; patient weaker; diarrhœa increased; more restless and delirious; pulse rapid, soft, somewhat dichrotic; ataxia marked; evidences of cardiac complications (endocarditis); abdominal tympany; abundant new crop of rose spots.

In seventh week. Some improvement; less diar-



rhœa; less violent delirium; the rose spots fading.

September 20th. Chill, preceded by pain in upper and inner part of left thigh.

In eighth week. Continued improvement; m' clear; diarrhœa ceased.

September 22d. Chill; increased size of sple

evidences of increased size of liver. Quinine, nine grs. per day given.

September 23d. Chill.

September 26th. Chill.

In ninth and tenth weeks. Continued improvement in general condition. Physical signs as before.

September 29th. Severe chill.

October 7th. No chill since 29th ult. Quinine omitted.

October 8th. Chill; enlarged spleen persists.

October 9th. Chill. Quinine resumed, twenty-four grs. per day.

In eleventh and following weeks. Convalescence established; flesh and strength returning.

October 17th. Chill. Quinine thirty grs. per day.

October 18th. Severe chill.

October 20th. Quinine increased to thirty-two grs. per day. Ringing of ears in a day or two, and quinine gradually reduced. Nor further chill. Improvement rapid and uninterrupted.

November 10th. Discharged well.

CASE III. Entered October 7, 1887. Female, aged twenty-one, single. Born in Prince Edward's Island. Lived for past year in Cambridge.

Previous health excellent. Deaf for two years. Symptoms of illness began four days previous to entrance, and consisted of chilly sensations; feverishness, severe headache, anorexia, diarrhoea, pain in back and limbs, restlessness at night, tired and run down feeling. Catamenia present for three days.

Examination. Fairly nourished; face flushed, tongue—thin, white, moist coat; chest negative; abdomen slightly full, resonant; gurgling in both iliac fossæ; no tenderness; no rose spots; spleen not felt; splenic dulness, $2\frac{1}{2} \times 4\frac{1}{2}$ in.; urine negative.

In second week. Patient very delirious at night; dull and stupid by day; several rose spots; slight tenderness in iliac regions; profuse diarrhoea; abdominal distension; considerable headache.

In third week. Cessation of diarrhoea; less abdominal distension and tenderness; rose spots fading; mind clearer; no delirium at night; very comfortable; sleeps large part of time.

In fourth week. Patient quiet; no complaint; pulse good; tongue cleaning; no signs in chest; abdominal distension and tenderness gone; splenic dulness normal; somewhat more deaf. Examined by Dr. J. O. Green, who made diagnosis: "Evidently case of old deafness, with infiltration of tympanum and labyrinth accompanying typhoid."

In fifth week. Apparently doing well, until on November 3d and 6th, complaint of headache, feverishness, and chilly sensations, accompanied by sudden rise in temperature. No physical signs, either thoracic or abdominal, explanatory.

In sixth and seventh weeks. Patient weaker; some vomiting; pulse not so strong; slight cough; few, fine moist râles at bases posteriorly; no other abnormal physical signs.

November 8th. Again chilliness, with elevations of temperature.

November 10th. At 7.45 A.M., pronounced chill for one-half hour; temperature 105.2° ; sweating followed. Quinine, grs. ii, every two hours given. Chill repeated at 10.45 P.M.

November 13th. Severe chill at 7 P.M.

November 15th. Extreme rigor at 3 A.M.; patient delirious; temperature 107° in rectum. Antefebrian,

grs. ii, given. Two hours later, temperature 106° , antefebrian, grs. ii, repeated. In next twelve hours, fall in temperature of 13° , with profuse sweating, prostration and collapse; semi-consciousness; stimulants, heaters, rubbing, etc., employed.

November 16th. Temperature back to normal this P.M.

November 17th. Chill, much less severe; evidence of cinchonism. Quinine reduced.

In eighth and following weeks. Convalescence only interrupted by two slight chills.

November 23d and 24th. Steady improvement afterward, and final recovery and discharge from hospital.

A METHOD OF ESTIMATING ADDUCTION AND ABDUCTION OF THE LEG IN HIP DISEASE.

BY ROBERT W. LOVETT, M.D., OF BOSTON.

THE presence of adduction or abduction of the diseased limb in hip-joint disease is one of the commonest and most troublesome of the complications of that affection, and the estimation of the amount of malposition present is a matter of much importance, both during the acute stage of the disease, as an index of the progress of the case, and after the arrest of the disease, where a return of the adduction and a consequent increase of the limp and discomfort is always to be feared. It has been customary to calculate in degrees the amount of malposition present either by a rough guess or by the use of the goniometer, an instrument not often at hand, and always clumsy and inaccurate.

The following article is a purely mathematical deduction from certain evident anatomical relations, by which it has been possible to construct a simple and practical table for working purposes in the estimation of the amount of this malposition. The method is, in a word, the estimation of the angle of malposition of the diseased limb by the varying differences between what we may call the real and the apparent shortening of that leg. Real shortening is the term to be applied to the difference in the length of the legs, measuring from the anterior superior spines of the ilium to the external or internal malleoli—the common measurement.¹ Practical shortening will be used to denote the difference in the length of the legs when the measurement is taken from the umbilicus to the malleoli while the patient lies straight, with the legs parallel,² and represents, of course, the amount of shortening which will be present when the patient stands or walks, for the legs must then necessarily be made parallel, even if the pelvis has to be tilted to make them so. Practically, real shortening may be the same as apparent shortening; it may be greater, or it may be less, and I had noted that it varied in proportion to the amount of deformity present, but I was unable to express this variation as degrees of malposition, and I am wholly indebted to Mr. G. L. Kingsley, of the Harvard Medical School, for the mathematical assistance which has made it possible to work out and prove the practical usefulness of the method.

When the patient lies straight and neither leg is adducted, it hardly needs mathematical proof to show that the real shortening is equal to the practical short-

¹ Stimmon. *Treatise on Fractures*, 1883, p. 511.

² Gibney. *Diseases of the Hip*, 1884, p. 28.

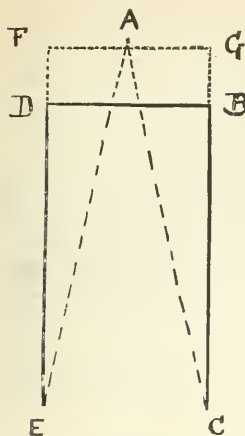


Fig. I.

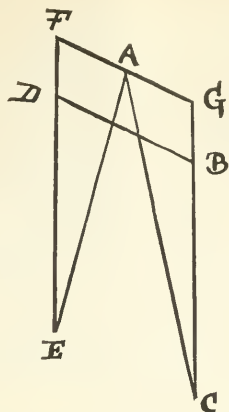


Fig. II.

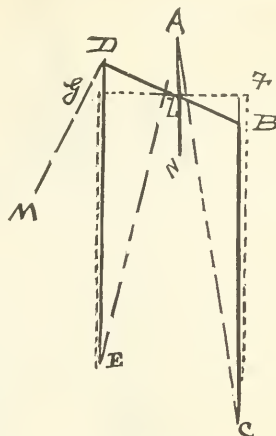


Fig. III.

ening (Figure I). Here E and C represent the malleoli, D and B the anterior superior spines, and A the umbilicus. A glance shows that the difference in the length of A E and A C will be the same as the difference between D E and B C (both differences in this case being zero) so long as the pelvis is square.

The mathematical proof of this is: Since F E and G C are parallel in this case, and F D = G B (F G being parallel to D B) and F A = A G, and A F E and A G C are right angles,

$$\sec. G A C = \frac{A C}{A G}$$

$$\sec. A F E = \frac{A E}{A F}$$

$$\tan. G A C = \frac{G C}{A G}$$

$$\tan. A F E = \frac{F E}{A F}$$

$G C = A C \cdot \sin G A C$ } $G C - F E = A C \cdot \sin G A C - A E \cdot \sin A F E$
 $F E = A E \cdot \sin A F E$ }
 that is, practically differing only by the difference in the sines of the angles A C G, and A E D and since the angles in the class of cases under observation are very nearly equal, the error is not appreciable, for the maximum error would be 0.03 inches.

If, however, one leg is held adducted or abducted by muscular spasm or ankylosis, the pelvis must necessarily be tilted when the legs are made parallel, as in standing or walking, and the state of affairs is represented by Figure II. It is obvious that now the distances from B to C and D to E are the same as before, whereas A C has grown very much longer than A E; the practical shortening of the leg D E has, in fact, become greater than the real shortening because the leg is adducted. It is, moreover, evident that this must vary in proportion to the amount of adduction and consequent pelvic tilting, for, by the latter, one leg must be carried up and the other down, while the umbilicus remains stationary, so that as the pelvis tilts more and more, A E grows shorter and A C longer.

It is not quite correct practically, to assume that D E = B C in figure II, for Dr. Halstead* has pointed out that a leg in adduction has not the same real length when measured from the anterior superior spine to the malleoli, as the same leg in the normal position or abducted, but the difference is to be expressed in millimetres and practically does not enter into this method as an error, it is too small to be of any account.

Of course it is not assumed that the anterior superior spines are the same distance apart as the acetabula, but the practical centre of motion of the leg in adduction and abduction is not at the acetabulum but outside of it, as can easily be seen in the skeleton. This is of course on account of the angle that the shaft makes with the neck of the femur. So far as could be determined, it was well enough represented by saying that it was in the line of the anterior superior spines. The only inaccuracy likely to be caused by this, would be

possibly in the adult female pelvis where the flare was extreme and even here the error would be small and of little account.

The problem was to make this variation express in degrees the angular deformity of the adducted or abducted leg which caused this pelvic tilting; and for working purposes Figure III had to be constructed, where the original position of the pelvis is represented by dotted lines, and the tilted pelvis by heavy lines. Of course, a working triangle must be found, and such a triangle is L F B, for F L B is the angle to be measured, for it is the angle of pelvic tilting which is equal to the lateral variation of the diseased leg from the normal.

For, letting D B = pelvis in new position, and G F = pelvis when square, D E = position of leg, and D M = position leg should have if still at right angles to pelvis, and M D E = adduction angle.

$A L G = 90^\circ$, $L D M = 90^\circ$, $E D L = D L A$ (since A N and D E are parallel and cut by the line D L).

$$90^\circ = A L G = A L D + D L G \quad \text{Cut } A L D = L D E$$

$$90^\circ = L D M = L D E + M D E$$

$\therefore D L G = M D E = \text{adduction or adduction angle.}$

Now of this right-angled triangle, L F B, two sides are known: F B, which is equal to half the distance between the anterior superior spines of the ilium; and B F, which is equal to half the difference between the real and apparent shortening. The pelvis tilts, and one foot is carried up and the other down, and the practical shortening is the sum of these excursions.

First, when the legs are of equal length.

In this case the problem becomes — to prove that twice the sine of the angle of ad- or abduction is equal (or very nearly so) to the difference between the distances from the umbilicus to the internal malleoli.

In Figure 4 if we suppose D and F to be the positions of the anterior superior spines of the ilium, A the umbilicus, B and C the internal malleoli, then the angle D R P' (which equals B R' P') will be equal to the angle of adduction (as proven in Figure 3), D' and E' are the positions which the anterior superior spines would have if there was no ad- or abduction.

The Figure D' E' C' B' will be a rectangle. Suppose a circle with a radius B R' to be described on R' as a centre; then the points B', C', D', and E' will lie in the circumference of this circle, since they are points all equally distant from R'.

It is to be proved that

$$A C - A B = B C' \quad \left(\frac{A C - A B}{2} = \frac{B C'}{2} = B T \right)$$

or if there is an error in the equality, to show that the same is so small as to be inappreciable in the estimation of the ultimate result.

Suppose the triangle A R' C to be rotated on A R' as an axis. Then C' will fall at C'' and the arc B R' will equal the arc B' C''. On A as a centre with a radius equal to A B described an arc which shall

* New York Medical Journal, 1884, page 317.

vary. But both measurements are taken each time by the same man, skilled or not; and in the measurement for practical shortening he will use the same method, and make the same error that he made in measuring for real shortening, and it will not appear in the difference between the two. It is not unreasonable to expect a moderate amount of care to be taken in any such measurements.

Next and last, as to the practical accuracy of the method: It has been used by the writer and others for some weeks in a large number of cases of hip-joint disease in the Surgical Out-patient Department of the Children's Hospital, and afterward a very careful measurement has been taken independently with a fairly accurate goniometer, and the results have always coincided within one or two degrees.

A FATAL CASE OF PULMONARY BLOOD-EMBOLISM OCCURRING DURING LABOR WITH TWINS.¹

BY CHARLES M. GREEN, M.D.

ON May 31, 1887, I was requested by Dr. O. W. Doe to take charge of a pregnant patient of his during his absence in Europe. The previous history of the patient is irrelevant to this report, except that during her second pregnancy she suffered with varicose veins in both legs. At the time of my taking charge, the patient was supposedly about six months advanced in her third pregnancy: the predicted date of labor was September 6th, and Dr. Doe expected to attend her at that time. Just previous to his departure the Doctor's attention was called by the patient to a swelling of the labia majora accompanied by a painful sense of weight and distention: other than this her health was excellent. It was found that the veins of the vagina and labia majora were much enlarged and engorged, the latter being as large as a man's fist. The lady was kept in bed and a firm compress was adjusted so as to exert an even pressure over the labia. At the end of a week the swelling had greatly subsided and the labia were of nearly normal size: the patient was then allowed to be out of bed, although going over stairs was forbidden for a time, and she continued to wear a supporting compress.

During the month of July the patient continued very well and was accustomed to take an almost daily drive without discomfort and without visible ill-effects on the previously enlarged veins. It seemed to me, however, that she was unduly large for the supposed duration of her pregnancy, and I surmised that there was some error in her dates. On the 4th of August the patient sent for me, thinking that her labor was imminent, although she had had no true pains. Inspection showed the abdomen to be as large as ordinarily at full term, and careful palpation revealed an apparently quite large fetus in O. L. A. position. A second fetus was not then detected, owing, it seemed to me afterwards, to the fact that this fetus was the smaller and was lying in a right posterior position and thereby somewhat masked, by its fellow. The os uteri was found to be the size of a half-dollar, and although there were as yet no perceptible pains, considering the size of the uterus and my previous surmise of error in dates (it being then just a month before

the predicted date), I fully expected the speedy advent of labor. After two days, however, labor had not appeared and the patient was up again, and apparently in her usual health.

I did not see the patient again until summoned to her death-bed, although I was in constant expectation of a summons, and although her husband called one evening in the *interim* to warn me of an expected summons that night. During all my observation of the patient nothing appeared in her condition to excite my apprehension. The varicose veins had so far subsided that I apprehended no danger of rupture during labor, and I expected a normal labor and convalescence.

About quarter-past two on the morning of August 17, the patient awoke and called her nurse: she complained of not feeling well and of difficult breathing; in fact she was soon obliged to sit up in order to breathe comfortably. Uterine contractions probably began before she awoke; and as the pains increased in severity, respiration gradually became more difficult.² I was called ten minutes past four and reached the patient at twenty minutes of five: she was sitting up in bed, with a hurried respiration, and evidently in the second stage of active labor. The face was pale, however, and not flushed as is usual in active second-stage labor: nevertheless, I did not then suspect the real cause of the rapid breathing, but attributed it to the apparent severity and rapidity of the labor-pains. As soon as I could properly disinfect my hands I made a hasty vaginal examination, the patient lying down for the purpose, and found a head already bulging the perineum. I hastily felt the mother's pulse and found it rather weak and rapid; I did not attempt to count it, as one hand was engaged in vaginal examination. In about two pains after my first examination a male infant, found afterwards to weigh 6½ pounds, was born, with occiput right posterior. As soon as I saw the child, I knew that there must be still another in the uterus, as it was too small to have caused so much abdominal enlargement as I had found on previous palpation, and as only the usual amount of liquor amnii had escaped.

But meanwhile the condition of the patient was alarming. Instead of a relief to her respiration by the birth of the child, as I had hoped and expected, the breathing was becoming more hurried: the patient declared that she could not breathe lying down. The pallor increased; the pulse became more rapid, and irregular. I did not auscult the heart, there was no time, but it was evidently laboring. Hypodermic stimulation with brandy and ether was immediately resorted to, and the husband was informed that it was a case of pulmonary embolism and that the issue was probably hopeless: there was obviously no time for procuring a consultation. I persisted in the administration of stimulants with some temporary benefit, until after fifteen or twenty minutes it was evident that all treatment was useless. I then turned and delivered the second fetus as the patient was breathing her last, just forty minutes from the time I entered the house. The patient remained conscious until within two or three minutes of her death.

The second fetus lay in O. L. A. position and was the one felt by me on palpation: it was a girl, weigh-

² The husband subsequently told me that before sending for me he had noticed that the respiration was not natural and had wondered whether I could do anything about it when I came.

¹ Read before the Obstetrical Society of Boston, January 14, 1888.

ing $7\frac{1}{2}$ pounds, and was asphyxiated beyond resuscitation, although prolonged effort was made for that purpose. The first child cried soon after birth and has since thriven. It is quite probable that if I had performed version and extracted the second child immediately after the first one was born, its life would have been saved; but although it was soon evident that the case of the mother was hopeless, I thought it best to continue my efforts in her behalf, and I do not now regret having done so, as this condition is sometimes recovered from.

Although not confirmed by autopsy, the diagnosis of pulmonary embolism of blood-clot seems to be beyond question. Air embolism needs not to be considered, as the embolus evidently became lodged in a pulmonic vessel at about the beginning of labor, before the rupture of the fetal membranes. No antecedent disease of the heart had been suspected or known to exist, whereby vegetations could have formed on the valves and subsequently furnished the fatal embolus.

The source of the embolus will never be determined; but it seems most probable that it proceeded from a thrombus in some one of the pelvic veins. From the known condition of varicosity in the visible veins of the labia majora, it is fair to infer a like condition of at least some of the unseen veins in the pelvis. A sluggish current in some one or these tortuous and dilated vessels must have furnished the thrombus from which the embolus proceeded. It is probable that the embolus was a small one and that it lodged in one of the smaller branches of the pulmonary artery at about the time the patient was awakened by her initial pains of labor and the clinical history suggests a gradual growth of the clot by thrombosis, with extension towards, and perhaps reaching, the heart.

My suspicion of error in the dates, whereby labor was expected earlier than at the predicted time, was, in the light of subsequent events, groundless; as the unusual enlargement of the abdomen was explained by the presence of twins whose combined weight at birth was fourteen pounds. And the threatened labor at the eighth month was obviously the effort of a distended uterus to relieve itself of its contents.

REPORT ON PROGRESS IN THORACIC DISEASE.

BY F. C. SHATTUCK, M.D.

THE LOBAR ARRANGEMENT OF THE LESIONS OF PHTHISIS, AND ITS RELATION TO DIAGNOSIS AND PROGNOSIS.

As assistant physician to the Brompton Hospital, Dr. Fowler¹ has had ample opportunity for the clinical study of phthisis in all its stages and phases. In this paper he takes up a point which has, he thinks, not received the attention which it merits—the fact, namely, “that in its onward progress through the lungs, the disease, in the majority of cases, follows a distinct route, from which it is only turned aside by the introduction of some disturbing element”—a previous pleurisy, for instance. The primary focus is very rarely found at the extreme apex, but rather, just above the middle of the clavicle: thence the

lesion tends to extend at first backwards, possibly from inhalation of the virus while the patient is lying down. It is certain that in early cases the signs are not infrequently less equivocal in the supra-spinous fossa than in front. The extension in front in the upper lobe is apt to be on a line about an inch and a half from the inner ends of the first three interspaces.

Infiltration of the lower lobe occurs at a very early period of the disease, and is first to be detected opposite the fifth dorsal spine, midway between the border of the scapula and the spinous processes—somewhat below the apex of the lower lobe. “The infiltration of the lower lobe at this spot in the early stage of phthisis is one of the most constant features in the pathological anatomy of the disease, and its recognition is a matter of much importance, as in doubtful cases it is almost positive proof of tuberculous disease of the lungs.” Extension thence is toward the posterior border of the lung and along the interlobar septum, a line which closely corresponds with the posterior border of the scapula when, with the elbow raised, the hand is placed on the spine of the opposite scapula.

The above-described line of march is not invariable, but is extremely common, especially in cases with slowly progressive disease. The writer thinks that it indicates extension by inhalation of the virus through the bronchi. When the disease spreads by means of the blood or lymph channels the course is more rapid, and extensive miliary deposit is more common.

SARCINA OF THE LUNG.

A long paper by Hauser² can be thus summarized: In connection with all sorts of diseases of the respiratory organs, but especially those associated with cavity formation, the air-passages frequently contain a species of sarcina which is essentially different from that found in the stomach or from any other known species of sarcina. This organism stands in no causative relation to these diseases, nor does it appear to influence their course in any way—in other words, it has no clinical importance.

PULSATING EMPYEMA.

Keppeler³ has collected thirty-eight cases, including one of his own. In one or two points his results are at variance with those of Comby, whose paper, based on twenty-seven cases, was noticed in these reports (1884, I, p. 176). To quote from our previous notice: “To sum up, pulsating pleural effusions occur only on the left side, are always purulent, indicate hopeless compression of the lung, and are incurable.” Keppeler's own case was serous, followed by recovery, and was right-sided, as was also one other reported case.

THE SURGICAL TREATMENT OF PULMONARY DISEASE.

Runeberg⁴ has collected and analyzed reported cases as far as possible. He laments that, partly from want of detail in the report of the cases, the value of some of his material is impaired.

Of ten cases of pulmonary *abscess* surgically treated, he throws out three as of uncertain diagnosis. Of the other seven cases, in four permanent improvement or complete recovery followed. The other three

¹ Deutscher Archiv, für Klin. Med., 1887, Bd. 41, p. 127.

² Deutscher Archiv, für Klin. Med., 1887, Bd. 41, p. 226.

³ Deutsche Archiv, für Klin. Med., 1887, Bd. 41, p. 91.

⁴ Practitioner, October, 1887, p. 260.

cases were fatal, but the long delay in operating seems to have been a potent cause of the unfavorable result. A study of these cases would seem to indicate that in pulmonary abscess an operation is desirable, and the earlier it is done the better are the chances for recovery.

Gangrene of the Lung. Out of seventeen cases, in seven there was complete recovery or marked improvement; in two of these, however, the improvement was incomplete, and the final result doubtful; two others required only a superficial operation, like that for empyema. There remain three cases with entire recovery after an operation involving cutting into the lung itself, without which operation it would seem that the termination must have been unfavorable. Of the ten fatal cases, the operation itself does not seem to have materially influenced the result one way or the other, except in two: in one of these there was no adhesion of the pleural surfaces, and the resulting pleurisy certainly hastened death, which would have, however, occurred in any event, as there were several gangrenous foci in both lungs; in the second case the immediate cause of death was apparently a tracheo-bronchitis, excited by irrigation with an irritating fluid.

Echinococcus. Two cases, with recovery.

Bronchiectasis without Gangrene or Clear Tuberculosis. Recovery followed in one case; the other five were fatal. A serious impediment to success in these cases is the fact that the bronchial dilatations are seldom single, and may be unconnected with each other; even if connected, the drainage of all is difficult to secure through an opening into one.

Tubercular Cavities. Six of these have been opened. Death ensued sooner or later in all the cases, though in several there seemed to be temporary improvement.

Since the above was written, we have found another paper on the same subject by Foubert,⁶ who brings out more strongly the good results of operation for hydatid cysts. This writer adds three to the cases collected by Thomas,⁶ making thirty-five in all, with complete recovery in all but five. It is justly remarked that in some of these the cyst, though encroaching on the thoracic space, was really hepatic, and not pulmonary.

If hæmorrhage occurs in incising the lung, experience shows that it can be controlled by packing the wound.

THE TREATMENT OF CROUPOUS PNEUMONIA.

Venesection is indicated, according to Fraentzel,⁷ only wheu, with marked dyspnoea, deep cyanosis, and carbonic acid poisoning, the radials are small and hard — when death is imminent. He is not in favor of the use of digitalis, the good effect of which is lost by reason of the gastric disturbance which characterizes almost every pneumonia of the present day (Berlin), and which, moreover, is apt to intensify the collapse of the crisis. The modern internal antipyretics are specially denounced: there is not the least shadow of proof that the morbid process which underlies the fever is favorably influenced by them in any way, while the harm they do is unquestionable. The time has come when all these useless — nay, dangerous, in that they promote collapse — drugs should be

entirely given up in the treatment of pneumonia. Favorable cases are only interfered with in their progress by the antipyretics; unfavorable cases are hastened to their end. Fraentzel is as uncompromising an opponent of cold baths as of antipyretics: in serious cases cold baths bring the patient, at the very least, to the brink of the grave.

The treatment of which he approves is absolute rest in bed, a nutritious liquid diet, alcohol not earlier than the fifth day, though hard drinkers receive the latter and chloral earlier. The delirium of fever and inanition call for morphia, collapse for camphor, etc.

THE DYSPNOEA OF BRONCHITIS.

In the last Report on Progress,⁸ the light which Fraser's experiments with the nitrites throw on the etiology and mechanism of the asthmatic paroxysm was noticed. Professor Fraser⁹ now publishes the results of further experiments with the same class of drugs on bronchitis. He finds that a few minutes after the administration of a nitrite, the dyspnoea, if present, ceases, and the râles disappear. The latter must, therefore, be due chiefly, in this affection, to spasm, and not to secretion, as is generally held and taught.

THE PRESYSTOLIC MURMUR.

About fifteen years ago Dr. Barclay called in question the correctness of the doctrine of the presystolic murmur and its causation, as expounded so clearly and convincingly by Gairdner, who, by the way, prefers the term auricular systolic to presystolic. At that time there was much discussion, which, however, died away entirely, and of late there has been practical unanimity among writers and authorities on cardiac disease as to this point. Recently, the discussion has been revived by an able paper by Dr. Dickinson,¹⁰ who maintains the truth of Barclay's views with as much force and skill as can be brought to bear on the subject.

He urges that the presystolic murmur, "falsely so called," is really systolic and regurgitant, and that its presence indicates a contracted mitral orifice, with valve curtains rigid, but still capable of closure, the murmur being followed by a sharp snap produced by this closure. It will be seen that, according to this view, the clinical significance of this much debated murmur remains practically the same — mitral stenosis. The point of dispute is, rather, the mechanism and time of the murmur.

The arguments advanced by Dickinson are chiefly these: that the presystolic murmur, "falsely so called," frequently is blended with a systolic murmur, there being absolutely no break between them; an impossible condition of things if the murmurs were due to successive currents flowing in opposite directions: some break or pause in the sound there must be under these circumstances; secondly, the difficulty in believing that a force so feeble as that of even an hypertrophied auricle can produce so much vibration; and thirdly, the combined evidence of the senses of hearing, touch, and sight that the sound in question coincides with the period of ventricular contraction.

Dr. Dickinson's paper brings out opposing arguments and opinions from Drs. Gairdner, Graham Steele, George Johnson, Balfour, Sansom, and others.

⁶ Archives Générales, October, 1887, p. 462.

⁷ British Medical Journal, 1885, II, p. 692.

⁸ Fortschritte der Medizin, 1887, p. 449.

⁹ Journal, 1887, p. 278.

¹⁰ Am. Journal Med. Sciences, 1888, p. 122.

¹¹ Lancet, 1887, II, page 620.

The former again speaks of his unique case of ball valve obstruction of the tricuspid, which proves that a loud murmur, precisely similar in character to that generally attributed to mitral stenosis, may be produced by an obstruction to the blood-current from the right auricle to its ventricle.

In short, after carefully reading the arguments adduced on both sides, we can see no reason to cast aside the generally accepted views as to the presystolic murmur; views which, moreover, are supported by cardiographic tracings of Sansom and Galabin.

AN UNDESCRIBED ARTERIAL MURMUR.¹¹

Dr. Seelye, Instructor in Physical Education at Amherst College, finds that in the majority of young men, systolic souffles can be developed over the subclavian and carotids, or about the base of the heart, or even over the whole of one side of the chest, after violent exercise. These sounds are much more frequent in chests more or less nearly approaching the paralytic type, and that heard over the subclavian is often modified by the respiration. The murmurs are not modified by change of position of the body.

The most potent factor in the causation is thought to be some degree of compression of portions of the larger arteries, dilated in consequence of the greater afflux of blood from a heart stimulated by exercise to unusually forcible contraction; of the subclavian against the first rib, of the carotid against the unyielding tendinous portion uniting the two bellies of the omohyoid muscle.

The case is related of a young man who had been warned against over-exertion by his family physician on account of the presence of a cardiac murmur. Dr. Seelye found, on inquiry, that advice had been sought for a pain in the left side, and that the patient had ridden hastily to the office of his physician on a bicycle. Except after active exercise, no murmur was to be heard.

The above observations are important and interesting in these days, when physical culture is absorbing so much of the attention of young men. The great frequency and the lack of clinical importance of subclavian systolic murmurs, heard irrespective of exercise, and often heard only or loudest at the end of inspiration, has long been well known. It has also been remarked that this murmur is especially common in chests wanting in elasticity, and in cases of apex trouble more or less advanced. The further development of the subject by Dr. Seelye is, however, new, and the facts brought out by him should be borne in mind.

FATTY DEGENERATION OF THE HEART FROM INTRA-ABDOMINAL PRESSURE.¹²

A specimen of fatty degeneration of the heart due to intra-abdominal pressure, was shown at the meeting of the London Pathological Society by Dr. Bedford Fenwick. "The abdomen had been swollen for eighteen months; the heart was displaced upwards, and the impulse was diffused. The tumor, which was very large, weighed twenty-two pounds after the fluid had drained away. On the eleventh day after the operation the patient became suddenly worse, and died. The walls of the heart were yellow, soft, and friable. The microscopical appearances were those

of fatty degeneration. He suggested that the cause of the rapid collapse and death sometimes observed in cases of abdominal tumor, both where operation had been performed and had not, was to be found in cardiac degeneration. He had found it present in a considerable proportion of cases of large abdominal tumors. He attributed the degeneration to imperfect oxygenation of the blood, due to the pressure, to displacement of the heart from the same cause, and to the impairment of general health. Fatty degeneration of the liver and other organs had been noted in cases in which large abdominal tumors existed. He had collected twenty-two cases of sudden death in abdominal tumor, in which fatty degeneration of the cardiac muscle was present."

THE TREATMENT OF ANEURISM OF THE THORACIC AORTA BY MOORE'S METHOD.

Charmeil¹³ collects twelve cases, and adds three, hitherto unpublished, treated in the clinic of Lépine. The method consists in the introduction through a cannula into the sac of a foreign substance—usually a steel wire or watch spring—about which coagulation of the blood may take place, and obliteration thus brought about.

It is sufficient for our purpose to give the conclusions of the paper, which are as follows:

The procedure was not followed by recovery in any of the fifteen cases thus far reported.

Nevertheless, the operation seems to involve no risk to the patient: post-mortem examination gives some grounds for hope in the future: clinically, this method of treatment has almost always been followed by an improvement in the local condition, as well as in the subjective symptoms of the patient. Therefore, further attempts are not only justified, but should be encouraged.

As regards the details of the operation, it would seem that the best results are likely to be obtained by

- (1) A preliminary exploration of the aneurism by acupuncture needles.

- (2) The introduction of a watch spring through a flat cannula, as advised by Bacelli.

- (3) By the observance of the strictest antiseptic precautions. It is understood that Tufnell's form of treatment should be carried out at the same time.

Clinical Memorandum.

A CASE OF INTUSSUSCEPTION IN A CHILD TWENTY MONTHS OLD; LAPAROTOMY; RECOVERY.

BY WILLIAM N. SWIFT, M.D., OF NEW BEDFORD.

I was called Monday, January 9, 1888, to see a male child, twenty months old. He had never been very strong. About a year ago, had eczema of the chest and neck, but did well with local treatment and cod-liver oil. Last August, had a severe attack of enterocolitis, by which he was very much prostrated. Since that time he had been well until the present illness.

I saw the patient about noon, January 9th. His mother said he had had a cold for a few days. She had given him macaroni for breakfast that was not

¹¹ N. Y. Medical Record, 1887, II, p. 593.

¹² British Medical Journal, 1887, II, p. 1280.

¹³ Revue des Sciences Médicales, 1887, pp. 640 and 869.

very well cooked, and he evidently was suffering from gastric indigestion. I ordered a teaspoonful of the syr. of ipecac, and told the mother to give an enema of warm water if he did not get relief. About two o'clock, after taking two teaspoonfuls of the syr. of ipecac, he vomited, and a short time after the enema was given. About eight ounces of water was injected, and then he was put on a chair, the hole of which was much too large for him, so that his hips went through and he rested on his back. In this position he was urged to strain as much as possible, and had a large, natural defecation. After the defecation he did not seem relieved, and the vomiting continued every two to four hours. The vomiting gradually decreased, and he slept somewhat.

Tuesday (January 10th) morning, he passed some blood, bright red in color, but no fecal matter. He had no vomiting, and began to take nourishment. Temperature normal and pulse very good. He was rather restless and looked badly. He passed blood several times during the day, but this ceased towards night. Passed flatus freely. There was no distension of bowels. During the night he was rather restless, but slept somewhat. There was no vomiting, and he took nourishment well.

In the morning he had several foul-smelling, reddish discharges from the bowels, with some tenesmus. Temperature 98°, pulse 100, rather small and weak. His face was pinched, and the extremities cold. He showed symptoms of shock. Examination by finger in the rectum showed a large, elastic tumor filling the whole rectum, and almost presenting at the anus. The surface of the mass was dark in color, rough, and looked almost gangrenous. I at once made a diagnosis of intussusception, and called Dr. Charles D. Prescott in consultation. He agreed with me in the diagnosis, and we also agreed that laparotomy was the only chance for the child.

At eleven o'clock I operated, Drs. Prescott, George T. Hough, and Garry De N. Hough assisting. I made an incision in the median line about two inches in length, midway between the umbilicus and pubes. Some clear serum escaped from the peritoneal cavity. By inserting the finger I could easily feel the point of invagination, which was in the lower part of the descending colon, about two inches above the sigmoid flexure.

I did not have room enough to get hold of the gut to pull it up, so enlarged my incision downwards as far as possible, and then hooked my finger under the gut and pulled it forward. Dr. Prescott found by rectal examination that the gut was entirely reduced.

Examination of the gut from above showed it to be free, and that the peritoneal coat was in good condition. The wound was closed with silk, and dressed with corrosive sublimate gauze. During the operation careful antiseptic precautions were used. The whole of the operation, including ether and washing, took a little less than an hour.

Before the operation the child showed symptoms of severe shock, but began to improve at once. The bowels moved at four o'clock in the afternoon, and continued regular after that time. There was no vomiting, and Mellin's food, with a gradually increasing amount of milk, was given for nourishment with brandy. The convalescence was complicated with a bronchitis, which, on the seventh and eighth days, was very troublesome; but he improved, and is to-day

perfectly well. The wound healed by first intention.

The points of interest in the case seem to me:

First. The cause, being an injection to move the bowels.

Second. The apparent improvement in symptoms up to a certain point.

Third. The importance of an early laparotomy.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M.D., SECRETARY.

FEBRUARY 13, 1888, the President, DR. O. F. WADSWORTH, in the chair.

RECURRENT EMPYEMA IN A CHILD.

DR. ROTCH made the following remarks concerning a case which he considered to be one of recurrent empyema:

Through the courtesy of Dr. J. G. Blake, who operated on the case in January, 1887, and of Dr. A. L. Mason, who had charge of the child when it died in October, I am enabled to report an instance of a condition which, though rarely met with, and pathologically almost an impossibility, seems to clinically deserve the title of recurrent empyema.

A girl three and one half years old was brought to the City Hospital during my term of service, August 2, 1887, by Dr. Fifield, with the following history: She had been breast-fed for a year; she had never had any diseases excepting pertussis when twelve months old, from which she recovered entirely, and was well and strong until November 21, 1886, when she was seized with vomiting and pain in her side and cough; these symptoms continued, and she entered the hospital in Dr. Blake's service January 13, 1887, with a pulse of 140, respirations 48, labored, and temperature 99; the left side of the chest was bulging, respiratory movements were only present on the right side, there was flatness, absent respiratory murmur and diminished vocal fremitus over the whole of the left chest front and back, and the impulse of the heart was in the median line at the tip of the ensiform cartilage.

Dr. Blake aspirated the left chest just below the angle of the scapula, and withdrew twelve ounces of thick pus. On February 4th a permanent opening was made and a tube introduced with antiseptic precautions. The child then rapidly improved, and the tube was removed March 22d. April 15th the physical examination showed scarcely any thoracic depression in the region of the scar or lateral curvature, with good respiration front and back almost to extreme base of lung and normal percussion. She was then discharged well and strong, and is reported to have remained perfectly well until some time in July, 1887, when she began to lose in strength and appetite, to have cough, rapid respiration, and after a time bulging of the left thorax.

August 2d she returned to the hospital, and I found complete flatness, on percussion, both front and back on the left side, with absence of respiration, and heart's pulsations at the right edge of the sternum. Right side of chest normal. Immediately aspirated

the left chest and withdrew twenty-four ounces of inoffensive pus, and as very little improvement followed I made, on August 4th, a permanent opening in the sixth left interspace in the axillary line, and introduced two drainage tubes, the operation being performed with strict antiseptic precautions.

The child then rapidly improved, and by October had a normal temperature, and was up and running about, one tube having been removed October 19th. By November the auscultation and percussion were normal up to within a few inches of the remaining tube, with very little discharge, and the tube was expected to be removed about November 15th.

November 11th was perfectly well, and had a good appetite.

November 12th, 4 A. M., after sleeping quietly, awoke and vomited; did not complain of pain, but looked very pale. The dressing was removed and the tube found to be clear and the lung well expanded, with no thoracic symptoms, the auscultation and percussion being normal, and the wound healed close to the tube, only half an inch of which remained in the chest. The mind was perfectly clear, and the temperature 99. There was on the chest, in front and behind as high as the neck, confined to the area beneath the dressing, an erythematous efflorescence. The dressing was reapplied without iodoform, which had been used before. Nothing was found in the throat.

2 P. M., she was partially unconscious, with mild delirium; and somewhat later had convulsions and a weak rapid pulse, with extreme pallor. The vomiting continued, and by 7 P. M. the temperature was 104. The urine was passed, but could not be obtained for examination. The pupils were equal and reacted. The condition was one of collapse, as from some quickly-acting poison, and from which it was impossible to make her rally.

Death took place at 9 P. M. No autopsy was permitted. Scarlet fever or iodoform poisoning were considered as possible causes of death, but the symptoms were too obscure to admit of any definite conclusion excepting that they did not appear to point especially towards the thoracic organs.

The time which elapsed between the apparently perfect recovery of the child while in the hospital and the second attack of empyema was about three months. In this interval she was described as being fat and blooming, with a good appetite, and with no signs of disease. It should also be noticed that after recovery from the first attack she remained under observation in the hospital for several weeks, and was from time to time carefully examined.

DR. GANNETT, in reply to a question by Dr. Rotch, said that, as far as we can determine by autopsy, recovery from empyema is accompanied by obliteration of the pleural cavity. Sometimes a cake is found with a deposition of lime salts. In the case reported he thought that the recovery must have been more apparent than real, and that there must have been a certain degree of inflammation during apparent recovery. The purulent process may have ceased, and may have been followed by a serous inflammation.

DR. ROTCH said that the physical signs, obtained by several careful observers, seemed to show that no fluid remained in the chest.

DR. HENRY L. BOWDITCH agreed with Dr. Gannett that, possibly, the pleura was not entirely in a healthy

condition between the two attacks. The fact that the child "seemed healthy," and was even "active in the wards," and "apparently well," was not conclusive evidence of health without examination of the thoracic physical signs before the patient left the hospital or subsequently before the second attack.

DR. ROTCH said that as far as could be determined by physical examination the child was well.

DR. GANNETT said that in children the severity of symptoms was a poor guide to determine whether empyema existed or not. He did not depend upon the severity of the symptoms, but preferred to tap the chest.

DR. ROTCH said he found it impossible to make a differential diagnosis in many cases, and that the symptoms often simulate pneumonia. He was in the habit of determining the diagnosis by aspiration with antiseptic precautions.

DR. WHITTIER said he was glad to hear this difficulty of diagnosis spoken of, and that his experience coincided with that of Dr. Rotch's.

DR. ROTCH finally asked Dr. Gannett what he considered the proper nomenclature of this case.

DR. GANNETT replied that he should call the case one of recurrent empyema, however difficult it might be to explain the pathological conditions.

DR. E. N. WHITTIER then read a paper entitled,

THE INFLUENCE OF MALARIA ON THE TYPHOID FEVER OF 1887 IN BOSTON.¹

DR. ABBOTT said that Dr. Whittier's paper was of special interest, inasmuch as it presented one aspect of typhoid fever, which, so far as his knowledge went, had not been seen in Boston before. He had noticed during the past year, in repeated instances, an irregular temperature in cases of typhoid after the second week which were quite inexplicable, but none of them were preceded by chills such as Dr. Whittier had described. In fact, the cases all occurred before the season at which a malarious element would be likely to show itself: in the early summer. The accuracy of the diagnosis in the cases reported would depend, of course, largely upon the fact of the presence of intermittent fever in Boston. He had not seen or known of the existence of cases of this disease here since its rapid advance towards Eastern New England during the past few years. Some years since he had a case which seemed to have had its origin in Chelsea, where the patient had lived near the marshes of that city. A similar case had been recognized here before, which was attributed to exposure in the same locality. The question to be decided was a very important one, and he felt that the Society was under great obligations to Dr. Whittier for the careful thoroughness with which he had studied and presented all the facts.

DR. F. C. SHATTUCK said that he also had been struck with the rarity these last two years of the typical temperature curve in typhoid fever, and had repeatedly called the attention of his class of students to the fact. Chills, such as those noted in Dr. Whittier's paper, had occurred in a number of his patients the past summer, usually after the typhoid fever had run its course. Some of these chills were evidently connected with phlebitis; in other cases no cause could be detected on very careful physical examination, and the speaker had wondered whether phlebitis was the underlying process in these cases also, seated in a

¹ See page 237 of the Journal.

vein not accessible to direct examination. Some patients had only one of these chills, some several. In no instance was quinine administered, and the chills always subsided, perfect convalescence finally resulting.

The explanation given by the reader for these chills and the aberrations of temperature had not occurred to the speaker.

That malaria has spread eastward in this State, and that it originates in the neighborhood of Boston, perhaps in the city itself, is notorious. The question opened up by Dr. Whittier in his valuable and suggestive paper is one of great interest and of great importance.

Was the blood examined in any of the cases for the plasmodium malariae?

We are fortunate in now having a precise means of diagnosis in doubtful cases of malaria, and it will be the duty of the profession the coming season to carefully follow up the lead given by Dr. Whittier, and settle the question whether malaria is or is not a frequent disturbing element in the local typhoid fever of the present day.

In his service at the Massachusetts General Hospital last summer the speaker had made a special point of the examination of the blood for the plasmodium and had encountered no difficulties except in the attempt to stain and preserve the organism.

In the fresh blood, when one knows what to look for, the bodies are plainly to be seen. But it must be remembered that in the mild forms of malarial fever, such alone as originates in New England, the organisms are to be found in the blood only during the paroxysm.

At least two patients entered the hospital with a distinct history of a tertian ague, were kept in bed, but received no medicine of any kind, and the chills did not recur. This would seem to indicate slight intensity of the malarial poison.

Dr. F. C. SHATTUCK asked Dr. Abbott whether he remembered the occurrence of these unaccountable chills in the typhoid cases coming from the steamer *Prussian*. These patients all came down from a few days to a few weeks after their advent in this country, and they cannot have been much modified by endemic influence during that time and at that season—spring.

Dr. E. N. WHITTIER said that these immigrant cases had been treated by antipyretics, and that for that reason it was difficult to say what would have been the course of the cases without these drugs. Unfortunately no examination had been made for the plasmodium.

Dr. GEORGE B. SHATTUCK thought the greater one's experience with typhoid fever the more was one impressed with the fact that the typical chart—certainly in all stages—was the exception. In some years, it is true, the variations from the type are greater and more constant than in others. The typical chart, however, as a rule, is the exception. Unusual oscillations of temperature, accompanied by chills, occur without as well as with discoverable cause, without the necessity of resorting to malaria as an explanation. When such oscillations are combined with periodicity, the suspicion of malaria is, of course, strengthened, and a history of previous exposure to malarial influences—although long before—lends additional weight. The well-known tendency of ma-

larial taint, even when old, to re-exhibit itself under debilitated or impoverished systemic conditions is, of course, to be taken into account.

Whilst recognizing the fact that malarial influences had distinctly manifested themselves in positive forms within the last year in the immediate neighborhood of Boston, Dr. SHATTUCK had failed to observe their effects among patients at the City Hospital. At Dr. Whittier's suggestion he had reviewed the course of some peculiar cases of typhoid treated at that hospital the past autumn and this winter, but could not satisfy himself that malaria could fairly be held responsible for the peculiarities of temperature observed. A more careful review might, perhaps, modify this conclusion. He had lately seen a case in consultation in which there were unusual variations of temperature accompanied by chills in the fourth and fifth weeks, after the typhoid process had apparently spent itself, for which the influence of malaria might possibly afford a satisfactory explanation, and he should make additional inquiries as to the patient's surroundings last summer.

Dr. Whittier had made a valuable suggestion, which ought certainly to be carefully followed up next summer and autumn. The malarial wave, which in recent years had passed across Western Connecticut and Massachusetts, up the valleys of the Connecticut and Housatonic rivers, and transferred itself to Southern Rhode Island and Eastern Massachusetts, had shown a tendency to die out as it advanced. The next year or two would, therefore, probably be the best in which to study its influences in our neighborhood.

Dr. B. F. DAVENPORT said that in the early summer he had moved his family out to the region of Watertown. After a short stay one member of the family began to have malaise, with each day a chill at about ten o'clock, A. M., and fever running as high as 103° in the afternoon. He suspected malaria, and his diagnosis was confirmed by Dr. Hosmer. The disease was overcome by the use of quinine. The patient had never been exposed to malarial influences outside of this region.

Dr. GANNETT said that if malaria is going to modify typhoid fever, the modification will at first be slight. In succeeding years it will be more and more marked if it is to modify it at all.

Out-patient physicians must have been struck by the nearness of origin of some of the recent cases of intermittent fever. Two cases of patients, who had never been far from Waltham, were of marked tertian type and were controlled by quinine.

Intermittent fever certainly has its advance and decline. It now seems to be declining along the Hudson.

In the coming years we should study its influence with great care. We must examine for both the typhoid bacillus and the plasmodium malariae.

Dr. ROTCH said that at the City Hospital during his service of four months, very few cases of malarial fever entered his wards and that the charts of his typhoid patients frequently showed great variation from the so-called typical chart. Dr. Rotch also spoke of the danger of giving antifebrine during the period of a disease when a natural fall in the temperature might take place. He had seen two cases in children of most profound collapse from this cause.

Dr. VICKERY said that in 1886, a child who was

born and who had always lived in East Cambridge came to the out-patients department with undoubted intermittent fever.

Dr. J. H. McCOLLUM said that he had seen several cases of intermittent fever, which had originated in the City of Boston. There were marked chills and the disease yielded to quinine. When the Albany Street sewer was being dug a few years ago, he had seen three or four cases of intermittent fever in children who were playing about the street. Some of the laborers also suffered from the same disease.

Dr. BOWDITCH alluded to a report on intermittent fever in Chelsea, as given by himself with the late Drs. John Ware and Buck, at the Suffolk District Medical Society, October, 1852.² Proof was therein given that "certainly three and probably four cases of genuine fever and ague had arisen either on or very near the edge of a partially dried marsh." These cases had occurred during the previous seven years, subsequent to the closure of a dam, whereby the beds of the river and banks adjacent had been exposed, which previously had been covered with tide water. In the appendix to the report is given the case of a boy born and always resident in Boston, between Washington and Tremont Streets. This child had an attack "after sitting on the ground of the Common, witnessing fireworks, a dense fog prevailing at the time."

Also extracts from the Journal of Rev. Noahiah Rupel, 1682-3 he being then a tutor at Harvard College. From this journal we learn that he himself was ill with "ague" 1682, and 1683 that a student died of it.

Dr. WADSWORTH in closing, remarked that Dr. Heflinger had told him that the workmen digging a railroad along a high mountainous region in South America had been seized with malignant intermittent fever on first turning the soil, but that afterwards no cases occurred.

(To be continued.)

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

C. M. GREEN, M.D., SECRETARY.

TWENTY-SEVENTH ANNUAL MEETING.

JANUARY 14, 1888, the President, Dr. WILLIAM L. RICHARDSON, in the chair.

Dr. ROTCH reported a case of

INFANTILE CEREBRAL TUBERCULOSIS,

and compared it with two cases of infantile atrophy, which were under his care at the same time and which so closely resembled in their symptoms and course the tubercular case, that the differential diagnosis was only made clear by the death and autopsy of the latter and the final recovery of the former. The history in all the cases was almost identical, and consisted of breast feeding for a few weeks, followed by different artificial foods and progressive loss of weight, with extreme emaciation, and with nothing to account for this condition excepting mal-nutrition; in fact, it was the negative evidence in all the cases, which made it so difficult to prove that they were not all one and the same disease: this difficulty was still further increased by the atrophic cases, at times showing a decided rise in temperature lasting for days, instead of following

the normal or subnormal rule, usually existing in infantile atrophy. One of the atrophic cases, also, was at one time complicated by an abscess of the scalp, situated over the petrous portion of the temporal bone, which is a favorite locality for abscesses following caries in cases of cerebral tuberculosis: this case also had for a time tremor of the hands and arms.

In other respects all three cases presented the usual uncomplicated symptoms of infantile atrophy and both the atrophic cases had their weight reduced below that which represents the average infant at birth: the atrophic cases then began to gain, and are now healthy strong infants, while the tubercular case after gaining for a time, under the influence of improved methods of feeding, finally began to lose again and died, and it is the absence of symptoms during life, to correspond to the lesions found at the autopsy, which makes this case peculiarly interesting and worthy of record.

CEREBRAL TUBERCULOSIS.

M. M., female: born October 12, 1886, first came under observation October 13, 1887. The history of the early months of life was somewhat indefinite, but no hereditary taint could be ascertained, and the infant was reported to have been fairly well until three months previous to being seen, when it was said to have failed somewhat, and for the last few days to have had a slight cough.

Physical examination revealed nothing abnormal excepting extreme atrophy and a daily loss in weight, which continued until October 25th, when a gradual gain in weight began, continued until November 19th, and was accompanied by a corresponding improvement in the temper and general aspect of the infant. After November 19th the loss in weight began again and continued until December 7th, when death took place.

During the latter period, with the exception of a slight tremor of the hands and arms and an erythematous condition of the left eyelid, the symptoms were negative: the mind remaining clear and the temperature normal until three days before death, when the temperature began to slowly rise, reaching its maximum of 104° on the last day, but not accompanied by unconsciousness or any other change excepting progressive weakness.

[The full report of the autopsy in this case, has by mistake already appeared in the JOURNAL of January 19, 1888, page 76, and will therefore not be repeated here, attention merely being called to the brain, which presented in the lower left cerebellum, and in the left occipital and temporal lobes and right frontal lobes of the cerebrum patches of solitary tubercle as large as a ten-cent piece].

Dr. Rotch drew attention to the latency which characterizes this class of cases, and also to the support which this case gave to the opinion advanced by Hensch that, where the tubercular patches are multiple, there is more likely to be an absence of hemiplegia and unilateral convulsions, and, in fact, of any paralysis or clonus whatever, than where there is one solitary tubercle.

Dr. Rotch also remarked that this lack of symptoms to correspond to the clearly defined lesions found in these cases, renders them much less valuable for the study of cerebral localization than would otherwise naturally be expected and this study made from clinical

² Boston Medical and Surgical Journal, January 26, 1853.



cal deductions drawn from cases of infantile cerebral tuberculosis is rendered still more difficult from the numerous instances which arise where the symptoms, such as hemiplegia and contractions, are found on autopsy to present the corresponding portions of the cortex intact, while various other parts of the cerebrum or cerebellum are found to be the site of the tubercular lesions.

DR. C. P. STRONG reported

SIX CASES OF ALEXANDER'S OPERATION WITH RESULTS.¹

DR. DAVENPORT said that in his opinion this operation has passed the experimental stage, and that now it was a question of results. It seemed to him, as to the reader, that the operation is most applicable to retro-displacements not held by pessaries, and not as a rule to cases of procidentia with loss of perinaeum. In most of the cases he had seen reported, a pessary had been worn for several months after the operation.

DR. BLAKE asked if the operation was applicable to retro-displacements with adhesions.

DR. STRONG replied that if the adhesions were such that the uterus could not be replaced without undue force, the operation was inapplicable; but if they were long and elastic enough to admit of the uterus being raised, the operation was permissible: it was well, however, in such cases for the patient to wear an intra-uterine stem, until the shortened ligament had strongly healed in its new relations.

The reader said that at first he had caused a pessary to be worn in all cases for three months; but he had shortened this period to three weeks, after which time he thought vaginal support was unnecessary, if the patient was careful about undue exertion and lifting.

In reply to a question by Dr. Edward Reynolds, as to whether he allowed the patient to get up on a given day, or whether the time of getting up depended on the weight of the uterus, the reader said he saw no reason why the patient should not get up in two weeks; then, if the uterus were heavy, he would fit a vaginal support that would hold it.

Regarding the size of the round ligaments, Dr. Strong said there was no rule: among his cases, one unmarried woman had five, large ligaments; another,

¹ See page 166 of the Journal of February 16, 1888.

who had borne many children, had the smallest round ligaments of any.

Dr. CHADWICK had operated in three cases, all of retroversion with complications. In the first case there were tender retro-uterine bands which would not bear the pressure of a pessary: she remained in bed only ten days after operation, wearing a pessary only during that time, and the result was successful. His second case was an undeveloped girl of fifteen, who during the eighteen months of menstrual life had flowed profusely: he had curetted the retroflexed uterus and had tried pessaries; but the latter were not well borne. He then performed Alexander's operation; and although the wound suppurated and was long in healing, the operation was a success. In the third case there were lax adhesions, and although the uterus was replaceable, it was not held in place by pessaries: he therefore operated and the patient was now cured. All three of his patients were virgins. He had no fixed rule about the subsequent use of pessaries; but he believed that when the wound was healed no pessary was usually needed. Of course, if in any case past inflammatory action had caused such adhesions that the round ligament could not be drawn through the ring, the operation would have to be abandoned. As yet he had not removed any of the round ligament, but had left it coiled in the wound: he thought this was useless, however, and hereafter should cut off the superfluous ligament, after having secured it in the ring.

Dr. C. M. GREEN reported

A FATAL CASE OF PULMONARY BLOOD-EMBOLISM OCCURRING DURING LABOR WITH TWINS.²

Dr. LYMAN asked if there had been any dyspnoea during the latter months of pregnancy.

Dr. GREEN said there had been some dyspnoea, especially on walking or other exertion: it was largely for this reason and on account of the weight of the uterine contents that driving had proved to be the most agreeable exercise. The dyspnoea was never excessive, and indeed was no more marked than in most pregnant women with the uterus unusually enlarged by twins, hydramnios, or a large single foetus.

DERMOID CYST.

Dr. JOHN HOMANS showed a beautiful specimen of dermoid cyst³ he had recently removed from a multiparous married woman, aged thirty-six: besides the hair and skin, there were two unsymmetrical bony plates resembling the parietal bones of an infant; these were covered with a membrane like periosteum and had a suture between them exactly like that of the infantile cranial bones. The margins of these bones were studded with teeth of every description,—canine, incisor, and molar. These teeth projected on the concave edge of the bones, and on the concavity or what might be termed the internal surface of these bones, isolated teeth were scattered here and there. A well-marked parietal eminence existed on the bones. It was the finest specimen of dermoid cyst he had ever seen.

SUB-SEROUS FIBROID OF THE UTERUS.

Dr. HOMANS also exhibited a sub-serous uterine fibroid weighing fourteen pounds, which he had removed from an unmarried woman thirty-seven years

of age. He had seen the patient in the spring of 1887, and had advised against operation as her symptoms were not urgent. The tumor had grown, however, and filled both flanks, and not only oppressed the patient by its weight, but also interfered with her work by making it difficult for her to stoop. Moreover, her weight was reduced from two hundred and fifty pounds to one hundred and eighty. He operated without opening the uterine cavity, lifting the tumor out of the abdominal cavity with a corkscrew, thus elongating the pedicle which before compression was about three inches thick. The operation was performed about two weeks previously and the patient had recovered, although the constricting wire had not yet come off from the pedicle. [February 6, 1888, patient up and about.]

In the year 1887 he had performed eight hysterectomies with two deaths. In view of the success claimed for electricity in the hands of Apostoli and others, perhaps the operation of hysterectomy ought to be abandoned; but it should be remembered that Apostoli's method is laborious and tedious, and not certain to cure. For those obliged to live by daily labor, hysterectomy must therefore necessarily be performed in promising cases like the present one, where the uterine tumor grows to such a size as to interfere with the patient's usefulness, and make her life a burden.

Dr. DAVENPORT said that in a recent case of his own he had tightened the wire around the pedicle for three weeks, and as by that time it had failed to come off he had cut away the remaining pedicle.

Dr. CHADWICK said that Apostoli had receded from his original claim that tumors treated by his method would disappear, and now claimed only that the tumors would diminish in size and the symptoms ameliorate. His own experience with Apostoli's method had not been satisfactory.

Dr. ABBOT asked Dr. Homans if it was necessary for the tumor to communicate with the cavity of the uterus in order that there should be hemorrhage.

Dr. HOMANS replied that whether or not there was hemorrhage in any case would depend on the condition of the uterine cavity. In reference to a remark by Dr. Lyman that the majority of patients with fibroids did well without treatment where there was no excessive hemorrhage, Dr. Homans said he had seen two fatal cases of hemorrhage from fibroids during the past year.

"NORMAL FORCEPS."

The PRESIDENT presented a pair of forceps which he had received from Prof. T. Lazarevitch, of St. Petersburg, with the request that they be given to the Society. The instrument has received from the inventor the name of the "Normal Forceps." The blades are parallel to each other instead of crossing at the lock, so that either blade can be easily introduced first. There is no pelvic curve. The lock is formed by a narrow steel plate which passes through an opening in each handle and is held in position by a screw.

—The forty-second annual commencement of the Medical Department of the University of Buffalo took place February 28th, in conjunction with the first annual commencement of the Department of Pharmacy. There were forty-four graduates in medicine, and twelve in pharmacy.

¹ See page 243 of this number of the Journal.

² See cuts on preceding page.

THE BOSTON
Medical and Surgical Journal.

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TRADE OR PROFESSION?

WE have before us an address delivered before the Maine Dental Society, by Horatio C. Merriam, D., M.D., in which is discussed the question whether dentistry is a specialty of medicine or whether it is a trade. The distinction between trade and profession is presented in a manner which deserves a larger number of readers than is comprised in strictly dental circles.

What would be thought of Dr. Bigelow, the address asks, and how would his name go down in the history of medicine if he had asked or received from his brothers a royalty for each time they had performed his operation for stone, or sold his instruments so that they could be withdrawn from competing with those already in the market? Or even patented and received a revenue on their sale? Would a dealer even venture to approach such a man with a proposition to buy his instruments so as to control their sale? Yet these things are regarded as legitimate and proper in trade but they are condemned in medicine, for the reason that methods honorable in trade may yet be discreditable in a liberal profession. The condition of the general medical profession as shown by such an example differs widely from the position of the dentists, and the author gives various examples of an opposite course of conduct. "A large house has acquired control of all patents on the dental engine, and is thus at liberty to manufacture such only as it may wish, and place its own judgment instead of the profession's." "A dental chair, the invention of a dentist, had been bought and withheld from the profession." "I heard within a few months of a hand-piece that a manufacturer had bought for five years, and had thus for five years prevented its coming into competition with those of his own make." "A short time ago I was told of a dentist who took to a manufacturer a form of tooth he had invented. The manufacturer looked at it, then opened a drawer and showed by drawings that he already had the invention in his possession." "Many of our journals are published and

controlled by dealers, and often contain articles in the text advertising materials for sale by their publishers. We often see recommended or offered for sale to the profession articles and medicines, the formulas of which are not given."

"Our dealers have also formed a combination and propose to decide who shall conduct our supply-business, whose gold they shall sell you, whose material they will or will not keep, through what firms you shall order their goods, and they [are] able to take orders for only such goods as the combination choose to offer. They may have the power to interfere with the delivery of an instrument you have ordered if it infringes on a patent held by them."

The author then goes on to say that "they are perfectly right in all that they do or have done if dentistry is a trade and we are tooth carpenters. . . . The brother who sells his invention instead of bringing it before his Society . . . is the one to blame, not the dealer who buys it and shoves it to his advantage. Surgical instrument makers would soon learn to do this if the medical profession would permit." The fact that the onus of such a condition is the fault of the profession and not of the dealers, is enforced by the question, What would be thought of a Cheever or a Hodges or any leading surgeon who would do such a thing as patent and sell his inventions? Yet it would be right if medicine were a trade and they repairers of the clavicle and menders of femurs.

Now these extracts present so forcibly the distinction between a trade and a profession, that they may well be pondered by the Medical Profession at large. If at times it seems a little unfair that one's improvements on surgical apparatus should not directly bring in a fixed income, the opposite condition when everybody should exact royalties and conceal the composition of all new drugs, is too horrible to contemplate—and between perfect freedom on the one hand and patents and copyrights on all new inventions on the other, there can be no middle ground. It is certainly entertaining and instructive to contemplate the unpleasant position which might be, were the general profession to suddenly overturn its present lofty ideal and become a trade.

It would be pleasant to believe the statement as to the position of the dentists an exaggerated one, but as a warning it is perhaps not useless nor entirely needless.

ARE CAUTERIZATIONS OF THE THROAT IN
 DIPHTHERIA, AND THE FORCIBLE RE-
 MOVAL OF FALSE MEMBRANES, TO BE
 RECOMMENDED?

THERE is no doubt that the prevalent view regarding diphtheria, from the time of Bretonneau to the present day, is that this grave disease, while eminently infectious, is primarily of local origin, not becoming general till after absorption of poison from some limited surface (as the pharynx), which first furnishes lodgment and a breeding place for the mate-

ries morbi or germ. This view has had striking confirmation from the behavior of wounds in the human subject which have accidentally been inoculated with diphtheritic matter, have become the seat of a pseudo-membranous exudation and a focus of infection, and from such experiments on animals as those of Oertel,¹ which go to show "that the disease establishes itself first in one spot, the original focus, and thence radiates, as it were, through the body, until by general blood-poisoning it renders the organism incapable of life."

Such being the theory, there has ever been on the part of practitioners a disposition to attack the disease *in loco*, and arrest it in its incipency; this, in fact, to believers in the primarily local character of diphtheria, really constitutes the leading indication. "Diphtheria," says one of our best writers on this disease, Professor Jacobi, "is analogous to the septicæmia of wounded men and of puerperal women, and the local disinfection which has been accepted as the sheet anchor in the treatment of these affections must be, also, the main reliance in that under consideration."

As to the value of local treatment in this disease, there can hardly be said to be any difference of opinion, and all authorities advise cleansing and disinfectant topical medication. Some, as Billington, Jacobi, and Smith, rely largely on sprays, gargles, and syringing; others, as Liebermeister, make great account of local applications of sulphur.

With regard to energetic cauterizations, and the frequent clearing of the throat of false membranes by swabbing, there has of late years been a general agreement among medical authorities in avoiding these harsher methods, and for the following reasons:

(1) Experience has proved that the violent removal of false membranes does no good, the diphtheritic patches being speedily re-formed. Only when the patches are already loose and ready to separate of themselves, is their removal by the brush or swab really beneficial.

(2) The milder caustics, as nitrate of silver and perchloride of iron, do not penetrate deeply enough to destroy the multiplying infection, and their frequent application adds to the discomfort of the patient.

(3) The stronger caustics (undilute carbolic acid, muriatic acid, caustic potash) are very painful, not easily limited in their action to diseased parts, and are likely to cause dangerous swelling of the tissues.

(4) Add that the patient is often a young child, whose opposition and whose struggles make the difficulties in the management of caustic applications well-nigh insurmountable.

(5) Finally, cauterization of the throat in children has often provoked spasm of the glottis and death from asphyxia; it has also caused lesions of continuity of healthy parts, which have been speedily covered with false membranes.

These considerations, and the results of treatment

by cauterization, which have not been encouraging, have led most authorities to renounce caustic agents altogether.

It is worthy of note in this connection that two French medical authorities, Le Gendre, in the *Archives of Laryngology* (October, 1887), and Gaucher, in the *Annuaire de Thérapeutique* (February, 1888), have endeavored to revive the ancient and now nearly obsolete custom of treating diphtheritic patches by energetic cauterization and the forcible removal of false membranes. Gaucher insists on the doctrine that the angina is "the primary accident of the malady." Diphtheria begins in the throat "because this common vestibule of the respiratory and digestive passages is the most exposed to germs coming from the atmosphere." "The false membrane is the source of the infection of the organism"; hence there is every indication to destroy this membrane *in situ*. To the objection that ablation of the false membrane denudes the mucosa, removes the epithelium, and opens the door to the infection, he replies: "Certainly, if you content yourself with simple ablation of the false membrane. You must, at the same time that you remove the false membrane, cauterize the subjacent mucosa. He employs concentrated phenic acid as the best antiseptic caustic agent. The phenic acid, with just enough alcohol to keep it in solution, is a good form, but Gaucher prefers the following preparation:

R	Acid phenic	.	.	.	.	.	.	10 parts.
	Gauchpur	.	.	.	.	.	.	20 "
	Alcohol	.	.	.	.	.	.	10 "
M	Oil of sweet almonds	.	.	.	.	.	.	40 "

This, topical agent is, he thinks, less painful than simple carbolic acid; in some cases, however, he prefers the concentrated acid diluted with an equal quantity of oil of sweet almonds. Either of these preparations he regards as an energetic caustic.

A condition of the success of the treatment, according to this writer, is not to be content with "simple touches" or "light brushing," but to endeavor by thorough swabbing or "rubbing" mechanically to detect and remove the false membranes; the underlying mucosa is then left in a deeply cauterized condition, and any further multiplication of germs or spread of the infection is rendered impossible. Gaucher's "swab" is the old-fashioned sponge probang, which is allowed to drip well after being soaked in the acid. Several vigorous "rubs" are given at each sitting, till all the false membranes are removed or destroyed. Then the denuded surfaces are brushed over with the caustic liquid. This operation is repeated morning and evening. Gargles, sprays, and irrigations of carbolic acid (one per cent.), are used freely during the day and night.

The pain which attends these topical applications is severe, but may be mitigated by the cocaine (four per cent.) spray. The inflammatory reaction and the difficulty of deglutition which follow are considerable, but do not, says Gaucher, constitute a serious impediment to carrying out the treatment, which, in his ex-

¹ Ziemssen's Cyclop., Vol. I, p. 577.

perience, has been eminently successful. "Out of sixteen cases," he says, "which I have since 1879 treated by this method, I have had as many good recoveries." He admits that this treatment is more applicable to adults than to children, "in whom it is," he adds, "difficult, though not impossible." The two cases which Le Gendre has reported in the *Archives of Laryngology* as treated by this heroic method both got well, as also several cases similarly treated by Albarran.

Practitioners in this country will note with interest the heroic activity of these French physicians, who will probably find few imitators this side of the water.

NATIONALITY AND SCIENCE.

In an address at the opening of the first Scientific and Medical Congress of Holland, B. J. Stokvis considered the inter-connection of national existence and the progress of science. Despite the commonality of methods and rules followed by students of nature (as in music and painting), we do not find uniformity. As Shakespeare is not only the poet, but decidedly an Englishman, so Rembrandt, while a typical painter, is, moreover, a thorough Hollander of Amsterdam in the seventeenth century. Great artists have been and are great because they comprehend the ideas, the feelings of their respective fellow-countrymen, and put into visible, audible form the sentiments which, before, were only vaguely felt in the mento-moral atmosphere. Heroes of science are born amid active life in other portions of the national economy.

Besides the noteworthy fact that the great discoveries in science have been made almost, if not quite, exclusively by the white race, especially by those inhabiting Central and Western Europe and America, it is remarkable that most of the renowned investigators of nature belong to the nations whose citizens have had least restriction, from government or public opinion, placed on personal, political, and social action.

During the eighteenth century, Holland, with Switzerland, was at the head of progress in science. In the course of the first half of the nineteenth she fell back, while the mountain republic still held the van; meanwhile, Germany, France, and England passed forward.

The proverbial neatness and thoroughness of Holland appear in all branches of practical science, especially with regard to technique and nicety in detail of instrument, although her intellectual princes are of the past.

Here arise queries as to conditions and influences that cause the changes in socio-political status, rendering inevitable a stagnation of national mental life, cessation of progress. With the people of Holland, nearly all circumstances of living appear favorable to furnishing means of scientific growth. Why, then, are there among them no prominent active workers in nature's field? But now we come to a region full of hypothesis and arbitrary opinion, and one pertinent

suggestion is ventured. Do they not hold too much to general education, rather than to special development by which discoveries are made? They seem to have enough schools for instruction in science, but few well-furnished laboratories for original work. Students busy themselves in keeping up with the rest of the world, little caring to widen the territory of knowledge. The existence of this Congress is instanced as a proof of the close relationship yet evident between nations and the culture of nature's philosophy, with the hope that from such a concourse of minds may spring incentives to enthusiastic work in regions unexplored.

Whether there be or not any particular dearth of true scientific progress among other peoples, the ideas herein suggested are seed-thoughts well worth development.

MEDICAL NOTES.

— A New York paper states that the whole ship's company of a vessel lying at Philadelphia have been made seriously ill from drinking polluted water. The man who had contracted to fill their tank from the city mains took the water from the river instead, near the outlet of a large sewer. Analysis shows the dangerous character of the water, and the probabilities are that had the ship gone to sea all hands would have perished. Detention by the ice alone prevented it. It would be gratifying to hear of the severe punishment of this contractor.

— In a recent communication of the Academic des Sciences, Bouchard considers naphthol to be the only drug known which has any real effect in the way of intestinal antiseptics while being at the same time in itself not injurious to living tissues. He stated that the toxic dose of naphthol for a man weighing 150 pounds was about 2.50 gm., or half a pound; though toxic but not lethal effects had followed the use of 26 gms. On the other hand a daily dosage of 2.50 gm., or 40 grains will secure intestinal antiseptics. The relative anti-septic power and toxicity of various drugs are thus tabulated by this observer.

	Antiseptic dose.	Toxic dose.	Daily toxic dose.
	Per 1000.	Grammes.	Grammes.
Iodoform.....	1.27	0.50	0.05
Iodol.....	2.75	2.17	1.24
Naphthol.....	1.51	3.40	1.00
Beta-naphthol.....	0.40	3.50	1.10

— Dr. Crozer Griffith reports in the *Therapeutic Gazette* encouraging success from the treatment of whooping cough by antipyrine. The drug was used in doses of from gr. iss to iiii for children from one to five years, and was repeated from three times a day up to every two hours. In many of the cases, at the acme of the disease, immediate improvement was noted to follow the use of the drug.

— The following somewhat unusual action of a medical man in reference to secrets of the medical "confessional" is narrated in the *India Medical Gazette*. In the court of Madras, A prosecuted B under the Penal Code, for adultery with A's wife. The fact was sworn to by A's wife in court. Dr. C., a surgeon

in the Madras medical service, sent word to the counsel for the defence that he could give testimony which would help the accused. On being summoned, he narrated facts made known to him in conversation with Mrs. A., regarding a previous adultery. This evidence was ruled out as Mrs. A. was present to declare what she did say, and she totally repudiated the conversation. The judge, moreover, censured the doctor for volunteering to give away the secrets reposed in him professionally, but said that if he were summoned involuntarily he would have been obliged to testify to facts thus learned. If the latter is the case, and the law had no respect for professional secrecy when it summons a witness to its own aid, it is a delicate question how far, supposing the doctor to have been honest in his testimony, he was obliged to sit still and see an innocent man suffer injustice from want of that evidence which under slightly different circumstances, the law has a right to extort.

BOSTON.

—The fortieth annual report of the Massachusetts School for the Feeble-minded at South Boston has been presented to the State Legislature. During the past year the school has for the first time been in condition, through the liberality of the State appropriation, to obtain the services of a *resident* superintendent, which the trustees rightly consider a great step gained. An appropriation of \$20,000 was also made to purchase a new site for the school, and two estates in Waltham, containing a little over seventy-two acres, have been secured for the sum of \$12,859. The remainder of the appropriation is to be used when it seems desirable, to secure additional land. The property now occupied by the school at South Boston and at Medfield is proposed to be given up whenever the new site is ready for occupancy, and the sale of the former will in part pay for the new buildings, though a liberal additional appropriation for this purpose is asked for. The average number of pupils present during the last year was one hundred and seventy-nine. Of twenty-seven discharged, eleven died, five of them by tuberculosis. The expenses for the year were \$14,500.

NEW YORK.

—The tablet erected by the Alumni Association of Bellevue Hospital Medical College in memory of the late Austin Flint, M.D., at the Carnegie Laboratory, will be unveiled on Saturday evening, March 10th, at half-past eight o'clock.

—The American Veterinary College held its thirteenth annual commencement at Chickering Hall, March 1st, when there were thirty-two graduates. Prof. F. D. Weiss, President of the Board of Trustees, presented the diplomas, Prof. Charles A. Doremus awarded the prizes, and Prof. F. S. Dennis, of Bellevue Hospital Medical College, delivered the address to the class.

—At its meeting of March 1st, the Academy of Medicine passed a resolution endorsing the petition of

the Georgia State Medical Society to Congress to place medicines, medical and surgical apparatus, and anything used in the diagnosis and treatment of disease, on the free list.

—Typhoid fever recently broke out among the students at St. Stephen's Episcopal College at Annandale on the Hudson, caused, it is said, by impure water obtained from a well near the College chapel; and in consequence of the panicky feeling prevailing, most of the students have gone to their homes.

—Dr. Joseph B. Holder was attacked by apoplexy February 26th, and died on the 28th. He was born at Lynn, Mass., in 1824, and graduated from the Medical Department of Harvard University. Always an ardent student of natural history, through the influence of Professors Agassiz and Baird, he was sent in 1859 to Dry Tortugas as a naturalist, and he then began his first researches in invertebrate zoology; among the results of his studies along the Florida coast being several papers contributed to *Harper's Monthly*. During the late war he was an army surgeon, and in 1870 came to reside in New York, where, up to the time of his death, he occupied with distinguished credit to himself and the institution the position of Curator of Invertebrate Zoology in the American Museum of Natural History. He was a member of the New York Academy of Sciences, the Society of American Naturalists, the Harvard Club, and the Linnean Society of New York. Besides having revised and adapted Wood's "Natural History of the World," he was the author of "Fauna Americana," and a frequent contributor to the *Century*, the *Scientific American*, and other periodicals. Dr. Holder leaves a widow and one son. From early youth he was a member of the Society of Friends, and he was buried in the family burying ground at Lynn.

—The new Loomis Laboratory of the Medical Department of the University of the City of New York was open for public inspection on Monday evening, February 27th.

—An experiment is shortly to be made to show to what extent the dairy resources of Central and Western New York, which have hitherto been regarded as too remote to furnish supplies, can be made available in meeting the growing demands of the city for an increased milk-supply. It is believed that by the judicious adaptation of the refrigerative process milk produced in any part of the State can be landed in New York, even during the heat of the summer season, in a perfectly sweet and wholesome condition. Accordingly, refrigerator receiving houses are now being built at a number of the railroad stations in Broome and Cortland Counties, at distances varying from 210 to 250 miles from the city where the producers will deliver their milk, and where it will be cooled down to a temperature of 30°. It will thence be transported to town by the Delaware, Lackawanna and Western Railroad, which has had a number of improved refrigerator cars constructed for the purpose.

Miscellany.

TRICHINOSIS IN GERMANY.

THE United States minister at Berlin, in his dispatch under date of January 30th, transmits copies and translations of two articles taken from Berlin newspapers containing reports, which have not been contradicted, of further alarming outbreaks of trichinosis in that country. The articles referred to are as follows, and are published in the Sanitary Report of the Marine Hospital Service for the week ended February 24, 1888:

Görlitz, January 23d.—Trichinosis has continued to spread in the Saxon boundary region. The attacks of the disease are no longer confined to Ober-Cunewalde, but have also occurred in Oppach, Laivalde, Beiersdorf, Lauba, Halbau, etc. The number of persons attacked is already over one hundred. Three cases have as yet resulted fatally. As regards the origin of the disease, it is said that a butcher of Ober-Cunewalde on Christmas eve made to his customers a present of smoked sausages, in the preparation of which meat containing trichinae had been used. In all the families which had received and eaten those sausages, attacks of the disease occurred.

From Saxony, January 26th (own correspondence). In view of the visitation of epidemics of the trichinosis with which several places in Saxony have of late been afflicted, the local authorities (Amtshauptmannschaft) at Plauen i. V. have recently issued a decree urgently recommending to the individual communities of the district the introduction of obligatory examination for trichinosis. In Ober-Cunewalde the persons attacked by the disease have attained to the number of about one hundred and seventy, and nine deaths have hitherto occurred. At the village of Obersachsenfeld, near Schaufenberg, a new epidemic of trichinosis has broken out, resulting as yet in the occurrence of twenty cases of the disease. At Ober-Cunewalde a committee has been formed to aid the poor among the persons attacked.

THE TREATMENT OF CARBUNCLE BY CARBOLIZED SPRAY.

A LECTURE on the above subject by Professor Verneil, of Paris, is translated for a recent number of the *Medical and Surgical Reporter*, in which the distinguished surgeon takes very conservative ground in the matter of the surgical treatment of furuncle and carbuncles. Beginning with the treatment of long free incisions, he gradually restricted operation to grave and well-marked cases, and of late treats all carbuncles, small or large, diabetical or not, painful or painless by simple carbolic spray (two per cent.), applied by steam atomizer for an hour at a time, three or four to a day. He has found this proceeding to remove pain and offensive odor, as well as to reduce swelling even in diabetical subjects, and to be freer from resulting septic infection of the general economy than the more common use of the knife. It is not claimed that this treatment will prevent accidents which may occur when the carbuncle has given rise to an extensive sphacelus in extremely cachectic patients. But in the majority of cases, if taken early

he believes that we have in the spray an abortive treatment for carbuncle.

The lecture is thus summed up, in closing: (1) Furuncle and carbuncle are only different stages of one infectious disease, and are to be treated by the same therapeutical means. (2) The treatment consists in surgical interference or medical applications. The first was formerly thought to be indispensable, or at least was resorted to in the majority of cases. The second were thought to be efficacious only in mild cases, and were employed as secondary measures for relief. (3) To-day surgical intervention is becoming less and less necessary, and should be reserved for exceptional cases; on the other hand, antiseptic solutions of carbolic and boric acid, etc., used in a peculiar way, and especially under the form of prolonged and repeated atomization, are remarkably efficacious, while they are at the same time very simple and free from danger. (4) Sprays, with very few exceptions, lead to a rapid recovery from the manifestations of furuncle or of a small carbuncle, and they check the disease in graver cases. They very rapidly put an end to the pain, the fever and the general symptoms; they disinfect the purulent and gangrenous spots, and assist the cleaning of the lesion and the formation of granulation tissue. (5) Sprays may be used in any region of the body for all forms, and in all the stages of the disease. They are never dangerous, and will alone bring on a cure in the majority of cases. They would also help greatly to the success of surgical interference, if such should be deemed necessary. (6) Finally, they prevent internal auto-inoculations and the phenomena of general infection.

Correspondence.

CERTAIN ADVANTAGES OF CAÑON CITY, COLO., AS A RESORT FOR CONSUMPTIVES.

MR. EDITOR.—While a considerable number of careful reports and deductions have been made of late by competent observers concerning the value of Colorado climate for invalids, the extent of country in consideration is so large that comparative meteorological reports of its various localities are especially needed by climatologists and physicians. Denver, as the rapidly growing metropolis within this great western health belt, and Colorado Springs as its most popular resort, have received a large share of attention. It is well, then, in this connection, to consider other Colorado points which may exhibit variations of climatic advantage to the health seeker. For this reason a simple statement of meteorological conditions at Cañon City is herein made without unnecessary embellishments.

Situated south of the State "divide," in the valley of the Arkansas, immediately as it broadens from its narrow defile through the mountains, the town stands at an elevation of 5,287 feet. Open to the plain, it is flanked and backed by mountains, which not only offer a panorama of surpassing picturesqueness, but also necessarily furnish a shelter from the intensity of the prevailing west winds—one of the few objectionable features of Colorado climate to some invalids. But it is to the temperature as a distinctive local feature that attention is especially called, and the importance of this feature to the invalid who depends for improvement on his facilities for an out-of-door life, warrants careful consideration. It is in this particular that the following figures, taken from reports made for the Signal Service for the month of January, 1888, will be of significance:

	Elevation.	Temp.
Denver	5,200	27.3
Colorado Springs	6,000	26.9
Pueblo	4,600	27.9
Santa Fe, N. M.	7,000	30.9
Cañon City, Col.	5,300	32.4

These figures, while below the average mean for January — unusually cold weather having prevailed throughout the West — yet exhibit an important variation in favor of Cañon City. To attempt to account for this variation would lead further into the realm of theory than will be necessary to go, but the sheltered position of the town, and the presence of extensive limestone cliffs, which retain their heat, offer a ready explanation. This retention of heat will also explain the lesser mean daily range of temperature which prevails here — another notable variation from the points compared.

The climates of Minnesota on the one hand, and Florida and Southern California on the other, are both recommended for phthisical patients, yet the depressing cold of the former, and the enervating warmth of the latter, are extremes to which the above figures show that Cañon City would form an agreeable mean.

It may be said, however, that a consideration of temperature alone should not be urged unless conjoined with that of other climatic conditions favorable to the pulmonary invalid. Of these dryness, altitude and sunshine are generally conceded to stand foremost. The atmospheric dryness of Colorado is now too well known to need mention, and in this Cañon shares in common with its neighboring points. Less than two inches in depth of light snow fell during January, and not a drop of rain. Dr. Fisk, of Denver, in a recent admirable article in the *Boston Medical and Surgical Journal* calls attention to the fact that in no other region in the world accessible to invalids is there a greater proportion of sunny days than in Colorado. In this respect Cañon fairly excels the record with but one cloudy day during January, with twenty-five clear and five fair. The influence of this almost unusual daily reign of sunshine, with a dry earth underneath, to facilitate an out-of-door life will be at once apparent.

The most favorable meteorological conditions, however, do not supply all the wants of the invalid. An important inquiry concerns his shelter, food, and opportunities for recreation and social enjoyment. For these Cañon furnishes three first-class hotels, long accustomed to supply the wants of invalids, at a cost very considerably less than the hotels of Denver and Colorado Springs. While at the latter place good board is quoted at \$12 to \$15 per week, the same accommodations can be had in Cañon at \$9 to \$12. For permanency of location — and this is always to be urged — cottages can be rented at equally reasonable rates. The town, settled among the earliest in the State, contains a population of 3,000 people, as peaceable, prosperous, and free from the rougher element as the best of eastern towns. The substantial and comely aspect of its public buildings and private residences attest to its respectability, while its tall shade trees, wide lawns and extensive orchards give it grace and beauty. To this last feature it is well to give especial emphasis, as it opens a field for healthful and lucrative in lusty to the permanent settler, Cañon being one of the chief fruit-growing points in the State, with a large irrigated area of land open for cultivation.

For attractions of natural objects the health seeker can find no better practicable resort in America than here. Those unaccustomed to an environment of lofty mountains can form but little conception of the constant diversion their ever-changing aspect excites in the mind of the beholder. Under this influence the invalid is stimulated to an exhilarating exercise of his powers, which a monotony of landscape or an enervating atmosphere stagnates. This drives, rides, or walks into the cañons, or over the wide stretches of tableland are daily sources of enjoyment and profit. Horseback riding is very generally practiced from the little expense involved, good riding ponies in many cases being procured for the winter season for their mere board. A daily beneficial custom with many is a visit to the soda and iron springs here, which are equal to any in

the State for pleasant medicinal properties. A hot spring, with the best of bathing facilities also exists here.

In the above exposition of facts the writer has aimed at detailing certain advantages that Cañon City, while sharing in the general features of its neighboring health resorts, possesses over them. These advantages may be summed up to be a comparatively mild winter temperature without loss of invigoration, a comparative immunity from high winds, and a minimum in the expense of living with a maximum of healthful attractions. These features, taken into conjunction with the general atmospheric dryness of this region, with an altitude highly stimulating in its effects but not excessive, with as large a proportion of sunny days as is to be found anywhere in this sunniest of all climes — facts to which records in this journal have already borne witness, — furnish strong claims for attention. These facts, then, are presented to physicians for consideration in recommending certain climates for their consumptive patients, and while it is not the purpose of the writer to enter into a discussion of the fitness of the course to be pursued in different classes of cases, from an experience of two seasons in different health resorts, of the Southern States, and from present observation in Colorado, he is impelled to say that in the general run of cases not advanced to the last stage of the disease, the invigoration imparted to mind and body is in such apparent large proportion, and the disappearance of active symptoms is so much more general in the latter locality that could an opportunity for its observation be given to the advising physician, there would no longer be any hesitation regarding the choice for his patient.

Yours very truly, WM. T. LORD, M.D., (Harv.)

LETTER FROM ST. AUGUSTINE, FLORIDA.

ST. AUGUSTINE, FLA., February 25, 1888.

MR. EDITOR.—The wonderful changes wrought by private enterprise in this ancient burg during the past year have not at all affected the old portion of the city, which is as sleepy, picturesque and indescribably odd as ever. The fire of last spring destroyed a number of ram-shackle buildings, mostly built of wood, and would have proved a veritable blessing if it had spared the old cathedral — the walls of which alone remained. It is now in process of restoration; a transept is being added, and we must hope that it will look "as good as old." Among the buildings burned were one or two which will be missed — particularly "Doctor" Vedder's museum, which together with some fine specimens of the *crotales horridus*, was completely destroyed. The old gentleman has found a new location for his treasures near the yacht club, and seems to be enjoying a fresh era of prosperity. The greater portion of his collection was saved, including the fine old snake who always shows his resentment of the near approach of strangers by sounding his rattles — thereby offering a capital opportunity to one wishing to learn to distinguish the difference between their distinctly intermittent vibration and the continuous hum of the locust. The crane whose loss of a leg has been artfully supplemented by a wooden contrivance (thereby giving him while in motion the appearance of being in his cups) was also rescued, together with the pet pelican, and are to be seen in the flesh on payment of the usual price of admission.

Next door to Vedder's stands a house on the site of one destroyed by the fire, which is an exact reproduction of its predecessor; it is even said that its door-bell just as the former one did, declines to ring, a fine example of unconscious celebration on the part of the bell-hanger.

The plaza looks the same as ever, except that the roof of the old "slave-market" and some of the large trees at the eastern end have gone. On the benches, basking in the sun, are to be seen "crackers" minoreans, and the ever-present colored brother, sitting in amicable propinquity; while tied to the rail fence is the usual collection of saddle horses and mules.

¹ Vide recent articles by Drs. Fisk and Otis on Colorado climate.

One sleepy-looking roan I distinctly remembered having seen standing in the same spot a year ago, and it pleases my fancy to believe that he has remained there quietly ever since, while his rider is taking a prolonged nap in some shady nook. St. George Street is certainly rather muddier than last year. In the shop windows are to be seen the usual display of young alligators, turtles, fruit and curios of all sorts. No greater contrast can be imagined than that between the old town and the magnificent new portion now rapidly springing up. The stately Ponce de Leon, superb in every detail, and the solid and picturesque Casa Monica and Alcazar all front upon the Alameda (as King Street is now called) and together with a moorish villa occupied as a private residence, form a group well worth a special pilgrimage. All these buildings

drain to the harbor, and thus far I have seen nothing in the way of sickness which can be attributed to any defects in their sanitary arrangements. The class of invalids who come here has radically changed during the past decade. Consumptives go to Thomasville, Aiken, or some of the other resorts situated in higher altitudes, while people with irritable throats, rheumatism, and chronic bronchitis seem to prefer Florida. Travel has been enormous this year, and during the President's stay, decent quarters were in some instances absolutely unobtainable. I have had an opportunity of trying the effects of permanganate of potassium (subcutaneously injected) upon a dog, bitten by a rattlesnake, and hope to be able to do something further in this line of experiment before my return.

Yours very truly, AN ITINERANT M.D.

REPORTED MORTALITY FOR THE WEEK ENDING FEBRUARY 25, 1888.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diph. & Croup.	Typhoid Fever.	Scarlet Fever.
New York	1,481,920	856	305	14.76	23.88	6.00	.48	3.24
Philadelphia	893,801	382	104	9.10	12.48	2.68	2.34	1.56
Brooklyn	745,108	330	140	17.10	18.30	9.40	.90	4.80
Chicago	725,000	—	—	—	—	—	—	—
St. Louis	420,000	—	—	—	—	—	—	—
Baltimore	417,000	172	75	15.66	11.60	4.64	—	—
Boston	400,000	158	61	8.67	19.89	3.06	.51	1.53
New Orleans	242,750	128	33	10.14	9.36	4.68	1.56	—
Buffalo	225,000	—	—	—	—	—	—	—
District of Columbia	210,000	93	28	17.28	22.68	3.24	3.24	—
Pittsburgh	210,000	86	34	18.56	19.72	5.80	3.48	1.16
Montreal	186,257	—	—	—	—	—	—	—
Milwaukee	170,000	69	36	15.95	7.25	2.90	1.45	—
Providence	121,000	—	—	—	—	—	—	—
Richmond	100,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,000	18	8	22.22	33.33	—	5.55	5.55
Charleston	60,145	30	9	13.33	3.33	—	3.33	—
Portland	40,000	19	7	10.56	10.56	—	5.26	—
Worcester	68,383	31	14	16.15	19.38	9.69	—	—
Lowell	64,051	26	4	11.35	15.42	7.70	—	—
Cambridge	59,600	29	8	10.35	17.25	—	—	6.90
Fall River	56,863	27	15	29.60	14.80	3.70	7.40	7.40
Lynn	45,861	22	8	17.16	9.08	13.62	—	—
Lawrence	38,825	19	5	31.56	15.78	5.26	5.26	10.52
Springfield	37,577	—	—	—	—	—	—	—
New Bedford	33,393	13	4	—	7.69	—	—	—
Somerville	29,592	—	—	—	—	—	—	—
Salem	28,084	17	8	11.76	23.52	5.88	—	—
Holyoke	27,894	8	7	62.50	—	25.00	—	—
Chelsea	25,709	11	—	—	29.29	—	—	—
Taunton	23,674	10	—	—	10.00	—	—	—
Haverhill	21,795	9	2	11.11	22.22	—	—	11.11
Gloucester	21,713	8	0	—	—	—	—	—
Brookton	20,783	10	0	10.00	30.00	—	10.00	—
Newton	19,759	11	2	9.09	9.09	—	—	9.09
Malden	16,407	5	0	—	40.00	—	—	—
Fitchburg	15,375	5	1	—	40.00	—	—	—
Waltham	14,609	10	2	—	20.00	—	—	—
Newburyport	13,716	8	2	—	12.50	—	—	—
Northampton	12,896	—	—	—	—	—	—	—

Deaths reported 2,649; under five years of age 921; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 355; acute lung diseases 477; consumption 387; diphtheria and croup 131; scarlet fever 62; typhoid fever 34; whooping-cough 28; diarrhoeal diseases 28; measles 23; malarial fever 18; cerebro-spinal meningitis 17; erysipelas 12; puerperal fever eight; small-pox one; typhus fever one. From whooping-cough, Baltimore eight, New York and Boston four each, Brooklyn three, Philadelphia, Portland, District of Columbia, Pittsburgh, Milwaukee, and Holyoke three each, Boston two, Baltimore, Pittsburgh, Charleston and Lynn one each. From measles, Baltimore nine, District of Columbia eight, New York four, Pittsburgh and Milwaukee one each. From malarial fever New York nine, New Orleans five, Philadelphia two, Brooklyn and Baltimore one each. From cerebro-spinal meningitis, New York five, Fall River three, Philadelphia, Milwaukee, Nashville and Worcester two each, Lynn one. From erysipelas, Baltimore eight, New York and Boston four each, Brooklyn three, Portland, District of Columbia, Pittsburgh, Milwaukee, Charleston, Lowell, Lawrence and

Salem one each. From puerperal fever, New York and Philadelphia two each, Brooklyn, Pittsburgh, District of Columbia and Milwaukee one each. From small-pox, New York one. From typhus fever, Philadelphia one.

In 22 cities and greater towns of Massachusetts with an estimated population of 1,047,250, the total death-rate for the week was 24.03 against 23.20 and 22.90 for the previous two weeks.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending February 11th, the death-rate was 22.2. Deaths reported 3,939; infants under one year of age 856; acute diseases of the respiratory organs (London) 504; whooping-cough 212; scarlet fever 74; diphtheria 66; measles 40; fevers 38; diarrhoea 36; small-pox (Sheffield) 31; Bristol, Nottingham and Leeds one each, 36.

The death-rates ranged from 15.2 in Brighton to 36.4 in Preston; Birmingham 20.0; Bradford 19.3; Derby 16.8; Hull 17.8; Leeds 19.2; Leicester 19.9; Liverpool 22.8; London 22.4; Manchester 28.7; Newcastle-on-Tyne 24.0; Nottingham 22.6; Oldham 24.2; Sheffield 24.3; Sunderland 28.1.

In Edinburgh 22.2; Glasgow 24.1; Dublin 29.9.

The meteorological record for the week ending February 25, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole, of the United States Signal Corps:—

Week ending Saturday, Feb. 25, 1888.	Barom- eter.	Thermometer.			Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.		
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Sunday, ... 19	30.38	27.0	31.0	22.0	68.0	78.0	84.0	77.0	N.	S.E.	S.E.	6	6	6	C.	O.	O.	10	.37
Monday, ... 20	30.03	45.0	52.0	29.0	95.0	87.0	100.0	94.0	S.	S.	S.	12	12	24	O.	R.	R.	2	.29
Tuesday, ... 21	30.65	41.0	52.0	34.0	82.0	49.0	72.0	68.0	S.W.	W.	W.	12	12	8	O.	O.	F.		
Wednes., ... 22	30.23	33.0	42.0	29.0	73.0	53.0	71.0	66.0	W.	W.	W.	7	9	8	F.	C.	C.		
Thursday, ... 23	30.20	33.0	44.0	28.0	72.0	41.0	72.0	62.0	N.	S.	S.	5	8	16	F.	C.	F.		
Friday, ... 24	30.27	36.0	44.0	30.0	76.0	59.0	73.0	69.0	N.W.	S.W.	S.W.	9	3	6	F.	C.	C.		
Saturday, 25	29.88	36.0	42.0	31.0	81.0	100.0	100.0	94.0	S.E.	E.	E.	9	32	6	O.	R.	R.	12	.55
Mean, the Week.	30.291	36.4	44.0	29.0				75.7										24	1.21

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 25, 1888, TO MARCH 2, 1888.

SHILLOCK, PAUL, to be assistant surgeon, with the rank of first lieutenant, January 31, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING MARCH 3, 1888.

HEYL, T. C., surgeon. Orders to the receiving ship "St. Louis" revoked.

WHITE, C. H., surgeon. Present duty continued to October 1, 1888.

STREETS, T. H., surgeon. Ordered to the receiving-ship "St. Louis."

DRENNAN, M. C., surgeon. Ordered to the receiving-ship "Vermont."

BRUSH, G. R., surgeon. Detached from the receiving-ship "Vermont" and to the "Pensacola."

MEANS, V. C. B., passed assistant surgeon. Detached from Naval Hospital, New York, and to the "Pensacola."

HOEHLING, A. A., medical inspector. Detached from the "Pensacola" and wait orders.

HARMON, G. E. H., passed assistant surgeon. Detached from the "Pensacola" and wait orders.

EDGAR, J. M., passed assistant surgeon. Detached from the "Pensacola" and wait orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE WEEK ENDING MARCH 3, 1888.

STONER, G. W., surgeon. Detailed as chairman of board for physical examination of officers and candidates, Revenue Marine Service. February 28, 1888.

URQUHART, F. M., passed assistant surgeon. Detailed as recorder of board for physical examination of officers and candidates, Revenue Marine Service. February 28, 1888.

KALLOCH, P. C., passed assistant surgeon. Relieved from duty at Pittsburgh, Pa., ordered to Marine Hospital, San Francisco, Cal. March 2, 1888.

CARRINGTON, P. M., passed assistant surgeon. Relieved from duty at Marine Hospital, San Francisco, Cal., ordered to assume charge of service at Pittsburgh, Pa. March 2, 1888.

KINYOEN, J. J., assistant surgeon. Granted leave of absence for twenty days. February 28, 1888.

SOCIETY NOTICES.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.—THE SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE will meet at 19 Boylston Place, on Wednesday, March 14th, at 7.45 o'clock. Papers: Dr. John A. Jeffries, "On the Sterilization of Milk for Infants." Drs. H. C. Haven, and T. M. Rutch will open the discussion. Dr. Albert N. Blodgett, "The Diagnostic Value of Hemoptysis in Pulmonary Disease."

A. L. MASON, M.D., Chairman.

ALBERT N. BLODGETT, M.D., Secretary.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A Regular meeting of the Society will be held Monday, March 12, 1888, at the Medical Library, 19 Boylston Place, at quarter of eight, p.m. Reader: Dr. A. M. Hodges; subject, "Constipation and some of its Accompaniments." Dr. A. T. Cabot will show "A Large Urethral Calculus Removed by Operation." Dr. H. H. A. Beach will show a "Cancerous Tongue Removed by a Bloodless Operation." Drs. C. B. Porter, E. H. Bradford and John Romans will exhibit specimens.

F. B. HARRINGTON, Secretary.

APPOINTMENTS.

Dr. Edward B. Lane, formerly first assistant at the Boston Lunatic Hospital, has been appointed first assistant at the Northampton Lunatic Hospital.

Dr. Robert Swift has been appointed first assistant, and Dr. Charles G. Dewey second assistant, at the Boston Lunatic Hospital.

The following recent appointments have been made upon the staff of the Massachusetts Charitable Eye and Ear Infirmary: Ophthalmic Surgeon, Henry W. Bradford, M.D.; Antral Surgeon, E. D. Spear, M.D.; Assistant Ophthalmic Surgeon, Myles Standish, M.D.; Assistant Antral Surgeons, F. L. Jack, M.D., and H. L. Morse, M.D.

LECTURE.

A paper entitled "The Transportation of the Wounded," will be read by Assistant Surgeon James E. Filcher, U. S. A., before the Military Service Institution, at Governor's Island, New York Harbor, on Tuesday, March 13, 1888, at 2 p.m. Leave Barge Office, Battery, 1.30 p.m.

J. F. RODENBORGH, Secretary.

BOOKS AND PAMPHLETS RECEIVED.

Insistent and Fixed Ideas. By Edward Cowles, M.D., Professor of Mental Diseases, Dartmouth Medical College; Medical Superintendent, McLean Asylum, Somerville, Mass. Reprint. 1888.

A Second Clinical Study of Hemianopsia. Cases of Chiasm-Lesion. Demonstration of Hemioptic Pupillary Inaction. By E. C. Seguin, M.D., Corresponding Member of the Société de Biologie de Paris, of the Verein für innere Medizin of Berlin, Honorary Member of the Société Anatomique of Paris, etc. Reprint. 1887.

Fortieth Annual Report of the Trustees of the Massachusetts School for the Feeble-Minded at South Boston. For the year ending September 30, 1887.

A Treatise on Salol, the New Remedy for Rheumatism and Rheumatic Affections. Diarrhea, Dysentery, Typhoid Fever, etc., and Antiseptically as a Surgical Dressing. Second Edition. New York: W. H. Schieffelin & Co. 1888.

Two Laparotomies on Same Patient.—Removal of Both Ovaries for Cystic Disease, and also a Large Tumor of the Mesentery.—Silk Ligature Passes into the Bladder and serves as the Nucleus of a Calculus. By R. A. Kinloch, M.D., of Charleston, S. C.

Passive Motion in the Treatment of Paralysis of the Ocular Muscles. By Charles Stedman Bull, M.D., New York, N. Y. Reprint. 1887.

Original Articles.

ADENOID VEGETATIONS IN CHILDREN: THEIR DIAGNOSIS AND TREATMENT.¹

BY FRANKLIN H. HOOPER, M.D.

In a paper² read in February, 1886, before the Boston Society for Medical Improvement, I endeavored to give the history, symptoms, and treatment of a disease incident to childhood which has its seat in the naso-pharyngeal cavity, and to which Wilhelm Meyer, of Copenhagen, in 1868, gave the name of *adenoid vegetations*.

Our knowledge of this affection has been acquired during the few years which have elapsed since the appearance of Meyer's³ and Loewenberg's⁴ important communications; but any one who has had practical experience with it, and has witnessed the surprising improvement in certain children after its eradication, cannot fail to wonder why it should have remained so long unrecognized and untreated. It remained untreated chiefly because it was unrecognized. The naso-pharyngeal cavity of the child has always been, and is, even at the present time, a much neglected region. It is the rare exception that a posterior rhinoscopic examination can be made in little children on account of the irritability of the fauces, especially if any catarrhal trouble be present; nor can the cavity be inspected through the nostrils. Hidden from sight, this important region has been left practically unexplored. Nevertheless, the cause of obstructed nasal respiration in children, in the majority of instances, will be found to be in the naso-pharyngeal cavity, and not in front of it, in the nasal chambers, nor below it, in the pharynx. Yet how few practitioners are in the habit of interrogating this cavity, and how many students leave their medical schools and hospitals without once having passed their index-finger up behind the soft palate, and learned to recognize by digital examination the different anatomical landmarks there contained, or how to know by the sense of touch when its walls are in a healthy condition, and when they are the seat of disease. The naso-pharyngeal cavity is seldom looked into in the dissecting room or on the autopsy table, and receives, as a rule, most inadequate mention in works on general medicine and surgery. Children presenting symptoms peculiar to adenoid growths in this region are frequently discharged with the not very definite diagnosis of "catarrh," "snuffles," "winter cough," "winter cold," etc., whereas, if their naso-pharyngeal cavities were properly examined, the true source of their discomforts would be discovered. Such little children, generally regarded as difficult to examine and unsatisfactory to treat, are too apt to be classed among uninteresting cases, and to be discharged with some local wash.

When they are pale, puny, and deaf, with a constant nasal discharge, excoriated upper lip, and stuffy voice, the word "scrofula" finds a convenient application, and the children are kept indoors while cod-liver oil, iron, the iodides, or the hypophosphites are poured downward into the stomach, with but slight chance of reaching the seat of the trouble, which is upward, in the naso-pharynx.

In looking back upon my own special practice of a few years ago, I now feel that although typical examples of this complaint must have been seen, they were not properly observed, and certainly not properly treated. We need only reflect upon the importance of the naso-pharyngeal cavity to speech, its intimate relation with the organ of hearing, and, above all, its respiratory function, to be alive to the necessity of having it in a healthy condition. Imperfect nasal respiration in the child means imperfect health and imperfect development, with danger of permanent structural changes being excited in the middle ear or in other parts of the body.

The immediate and remote effects of adenoid vegetations depend chiefly upon the mechanical obstacle which they offer to the passage of air through the natural respiratory channels: namely, the nostrils and the naso-pharyngeal cavity. Hence the first symptom to attract attention in a child with this complaint is its difficult breathing, especially at night. This, in four of my cases, was noticed from birth, as well as difficulty in nursing, yet the cause was unsuspected, and it is doubtful if the diagnosis has ever been established in early infancy. One of these children had reached the age of six years when it first came to me through Dr. Clarence J. Blake, to whom she had been referred for deafness. It had, indeed, been under treatment at various times since infancy for symptoms shortly to be mentioned, and the diagnosis of "catarrh" had been pronounced; the prognosis being that the child would "grow out of it." Finally, a purulent discharge from the ears appearing, and the deafness increasing, the aurist was consulted and the true nature of the train of symptoms explained.

Such, briefly, is the story of numbers of these children. General practitioners are first brought into contact with them much oftener than specialists, and it cannot be too strongly urged that these obstructing growths, the removal of which marks an era in the life of the child, should be recognized and treated by them, or, at least, by the general surgeon. With a tithe of the attention paid to the naso-pharyngeal cavity which is given to other less important regions of the body, there would be no necessity for referring such cases to the specialists for either diagnosis or treatment.

The symptoms of this complaint vary in degree, according to the length of time the air-tract has been obstructed. In a child two years old, which, in my experience, is about the average age when trouble first begins, little else than difficulty of breathing, especially at night, and a dull, heavy look about the eyes, is noticed. An ordinary cold may have been the initial cause; the child soon shows a tendency to repeated attacks of "cold in the head," which increase in frequency and duration. These are accompanied by considerable nasal discharge, which, however, may be entirely absent when the child is free from the acute attacks. During the summer months there is comparative immunity from all the symptoms, yet with the return of fall and winter the colds recommence with renewed severity. Deafness, in the majority of cases, is soon added to the list of discomforts, and by the time the child has reached the age of six, eight, or ten years, the characteristics of a typical example of adenoid vegetations are as follows: The child is a mouth-breather. Its facial expression is dull and stupid; oftentimes idiotic. The open or half-

¹ Read before the Boston Society for Medical Observation, February 6, 1888.

² Boston Medical and Surgical Journal, March 4, 1886.

³ Trans. Med.-Chir. Soc., London, 1876, Vol. III.

⁴ Tumeurs adénoïdes du Pharynx nasal, Paris, 1879.

open mouth is one of the most constant symptoms. Nasal breathing is interfered with during the day, but it is at night that this symptom displays itself with the greatest prominence. The child never sleeps soundly; it assumes unnatural positions in bed, and the slightest noise will awaken it. The labored breathing, especially when it has a fresh cold, is distressing to hear, and causes great alarm to the members of the family, who imagine the child is in danger of suffocation. The respirations will occasionally cease for a few seconds, and then re-commence with the same roisy, suffocative character as before, or the child may wake suddenly, bathed in perspiration, screaming and frightened. In the morning the cavity of the mouth is dry, and the lips may be parched. During the day the child is languid or irritable. The majority of the children are deaf, and their voices stuffy and thick. At school they are scolded by their teachers for inattention, and laughed at by their playmates. Yet the vacuous expression, open mouth, deafness, dead voice, nightmare, irritability of temper and lack of energy, all have a mechanical origin in the growths which are blocking up the naso-pharyngeal cavity and preventing nasal breathing.

The permanent condition of these children may be compared to the temporary discomfort of an adult in the congestive stage of a severe attack of acute coryza. And any one who has once experienced the relief afforded under such circumstances by the application of a spray of a four per cent solution of cocaine to the interior of the nostrils, may form a correct appreciation of the change which takes place in the dispositions and intellects of these little children after their naso-pharyngeal cavities have been made permeable to air. Moreover, when the growths are removed at one sitting, in the manner presently to be described, the improvement in the child will be immediate, especially as regards the character of the breathing, the quality of the voice, and oftentimes the hearing. And it is not long before their characters and facial expression undergo a complete change. It is true, as Prof. B. Fraenkel,⁶ of Berlin, says, "that the impairment of intellect and want of energy manifested by these children is real, and not merely in the expression of the countenance, is made evident after watching these same children after the growths have been removed. To the gratification and astonishment of the parents and teachers, the children hitherto sluggish and dull of comprehension now make rapid progress, and their comrades soon cease to make a laughing-stock of them. It seems, in fact, as if, through the removal of the obstructing vegetations in the naso-pharynx, they had become different beings."

Again, speaking of the nervous symptoms sometimes associated with this disease, such as abnormal sensations in the head, a feeling of weight and pressure in the upper and back part of the cranial cavity, melancholia, headache, etc., Professor Fraenkel continues: "The children come from school complaining of pain in the head, with a desire to lie down, and occasionally vomit, yet on the next day they have sufficiently recovered to go again to school. Slight fever sometimes accompanies these attacks. In many cases the parents and physician content themselves with the diagnosis of 'migraine' in explanation of these oft-recurring attacks. The children pass their holidays in the country or at some health resort, where

they are comparatively free from such attacks, yet they return home, bringing their old trouble with them. Then it is said, 'the child cannot bear the air of the school-room.' Finally, the adenoid vegetations are detected and removed, and the child is restored to perfect health."

The diagnosis of this complaint can be established with tolerable accuracy, even without direct examination of the naso-pharynx, from the train of symptoms already referred to, especially if the nostrils in front are free from obstruction, and if there are no enlarged faucial tonsils. Inspection of the cavity of the mouth will reveal almost invariably a high palatine arch, so marked in many cases as to be a deformity. The soft palate looks thick, and often seems to be bulged forward and immovable. Enlarged follicles are often seen on the posterior pharyngeal wall, and occasionally the uvula is relaxed. The faucial tonsils, similar in structure to adenoid growths (being, in fact, part of the lymphatic ring of the pharynx described by Waldeyer), are very apt to be simultaneously hypertrophied. Symptoms peculiar to adenoid vegetations have in former days been graphically described, but attributed wrongly to enlarged faucial tonsils. Dr. Henri Chatieller, of Paris, has called attention to this point in his recent interesting monograph.⁶ Adenoid growths in the naso-pharynx were unknown when Dupuytren (1824) and Alphonse Robert (1843) wrote their accurate descriptions of the evils which the pernicious habit of mouth-breathing entail, and which they considered to be due to enlarged faucial tonsils. Their account of the series of changes in mouth-breathers, such as impairment of hearing, alterations in the facial expression and in the quality of the voice, agitated sleep, obstinate cough, deformities of the bones of the face, nose, hard palate, dental arches, and of the chest-walls was exact and complete; but, as Dr. Chatieller observes, they mistook the real cause. The tonsil up behind the soft palate, which was not seen, was the real offender, and when it is removed, although the two lower tonsils may be enlarged, they will not impede respiration, and will, moreover, diminish in size after the naso-pharynx has been freed. Of the three tonsils, the third, or the pharyngeal tonsil, is the one that is causing the damage, and is the one to remove. Dupuytren himself remarked that excision of the faucial tonsils did not always relieve patients of their difficult breathing.

The change in the shape of the chest-walls in consequence of obstructed nasal breathing was strikingly shown in one of my cases, a boy nine years of age. He had suffered from his birth with labored breathing, difficulty in nursing when an infant having been one of the symptoms. When first seen by me, although his appetite was good, he looked ill-nourished and frail. His family history was good, and his three sisters healthy and robust. The appearance of this boy was brought about entirely through an insufficient quantity and a vitiated quality of air entering his lungs. His chest was thin and flat, the deep depressions of the intercostal spaces making the ribs appear unusually prominent, and, as his mother expressed it, in bathing the child it was like washing over a wash-board. At the lower end of the sternum there was a deep concavity. This boy's chest corresponded so perfectly with Alphonse Robert's description of this form of thoracic deformity, that I shall translate his

⁶ *Deutschen Med. Wochenschrift*, No. 41, 1884.

⁶ *Des Tumeurs adénoïdes du Pharynx*, Paris, 1886.

own words.⁷ He says: "The lateral walls of the chest, instead of being round and regular, are, on the contrary, depressed, flat, sometimes even concave, as if at the period when the ribs were soft and concave they had been laterally compressed. This depression is more pronounced towards the middle of the thorax than at its summit or base. It is also more marked near the middle of the ribs than at their extremities. The vertebral column is but slightly altered; the costal cartilages form a projecting angle at the point of their attachment to the ribs. The sternum, in extreme cases, presents at its lower portion a deep depression." Dr. Chatellier offers the correct explanation of this deformity in considering it to be the result of prolonged indrawing of the chest-walls, due to an insufficient supply of air. It is an exaggeration of what is seen in cases of acute laryngeal stenosis in children, the picture of which is familiar to all.

To be certain of the presence of adenoid growths, in cases where posterior rhinoscopy is not practicable, the forefinger should be passed gently up behind the soft palate. Although not painful, the procedure is disagreeable, and as the child is apt to rebel against a second trial, it is important that the first attempt should succeed. To accomplish this, the child is not to be made to anticipate pain by being coaxed or cajoled; but without any unnecessary preliminaries, it is asked to open its mouth, which it will almost invariably do. The examiner, steadying the head by placing his right hand behind it, now passes his left forefinger rapidly, gently, but firmly up behind the soft palate. The information gained by digital examination is very characteristic. The growths will be felt as soft, velvety masses, which bleed readily, and on withdrawing the finger it is commonly covered with blood. The growths may not bleed, however, if the finger is not moved about much in the cavity, or kept there but a moment.

Simple as this procedure is, it requires some practice, and the examiner should also know how the normal, unobstructed naso-pharynx feels. The difference between the smooth walls of the normal cavity and one blocked up with vegetations is so marked as to leave little chance for error. But there is one source of self-deception for beginners which may be mentioned. Some children are naturally much more difficult to examine than others. Some contract their soft palate against the examining finger with such force as to impede its movements, and the contraction of the muscular fibres of the palate itself feels oftentimes like a circumscribed swelling; but it is merely necessary to remember that it is the posterior wall and vault of the pharynx that are to be examined, and not the posterior surface of the palatal curtain.

Given, then, a child with this affection, the question is: how are the growths to be removed? Removed they must be, for it is a useless expenditure of time to attempt to reduce the growths when they are of large size by local applications. Moreover, long-continued local treatment of the naso-pharyngeal cavity of little children is not feasible. Certain phenomenal children, it is true, are occasionally met with who are tractable and submit to whatever is done to them, but they are obliged to come to the physician again and again, and always do so with fear and dread.

Yet most little children it is impossible to treat at

all. I have, therefore, long since abandoned all attempts to treat this affection unless the child is anesthetized. There are no contra-indications to the administration of ether for operations in the naso-pharyngeal cavity, and when adenoid growths are present in large masses their complete removal is too painful for children without anesthesia, as well as unsatisfactory for the operator.

In advocating the method for the removal of these growths, which has become my routine practice, I shall bear in mind Sir William Dalby's admonition, who, in writing⁸ on this subject, says: "If one thing more than another stands out in relation to what is written, said, and done in connection with this matter, it is the necessity of tolerance for other methods while advocating our own, and for the following reason: That it is characteristic of the complaint that if the growths are removed in any way, so long as they are completely removed, the patients get well both as to nasal breathing and hearing."

There are so many gradations in the size, toughness, and quantity of these growths, that I am inclined to believe that different operators, in extolling some particular method for their removal, have in mind only one form of the complaint; and while their particular procedure is applicable for certain cases, it is entirely impracticable for others.

The method I consider the best for a child when there is a large mass to be removed, and which I have carried out with great satisfaction in 104 children of ages ranging from twenty months to fourteen years, is as follows: The child is thoroughly etherized. It is then placed in a good light, and seated upright in the lap of an assistant, the operator being seated opposite to it. The child's mouth is held open by a small-sized mouth-gag inserted between the teeth on the right side. Any accumulation of mucus in the pharynx is to be wiped out. The operator should now pass his index-finger up behind the soft palate and assure himself of the quantity and situation of the growths. Then gently pulling the soft palate forwards and upwards by means of a palate-hook held in the left hand, a pair of post-nasal forceps, held in the right hand, is introduced, closed, into the naso-pharyngeal cavity. One soon learns to feel the growths with the closed end of the forceps. The blades are then opened, the mass grasped, and pulled off either by direct traction or by a slight twisting movement of the forceps, but under no circumstances is force to be exerted. If the growth comes away with difficulty, release the blades of the forceps and begin over again, taking hold of a smaller portion of the growth. Force, as well as hurry, is to be avoided. The rapidity with which the operation is completed depends upon the amount of the hæmorrhage. If there is much bleeding after a portion of the mass has been removed, wait until it has ceased, and then proceed with the operation. This it is usually necessary to do from three to six times or more before the cavity is cleared out. The finger is to be inserted in the cavity from time to time, until it is found that it is practically free. When it is considered that enough has been accomplished with the forceps, I hold the child's head well forward, so that the blood may flow out of the nose, and with the ball of the index-finger of the left hand and the finger-nail, attempt to smooth down the remaining ragged edges by passing the

⁷ Bulletin général de Thérapeutique, t. xxiv, 1843, p. 343.

⁸ The Lancet, October 2, 1859, p. 618.

finger first into one choana, then into the other, and then backwards and downwards along the posterior wall of the naso-pharynx; also, when necessary, along the lateral wall of the cavity, the Eustachian prominence, and in the fossa of Rosenmüller. This manipulation with the finger causes the blood to flow more freely than the previous evulsions with the forceps. Occasionally, also, after the larger portion of the growths has been plucked off with the forceps, a post-nasal curette may be introduced behind the soft palate and the remaining ragged masses scraped away. The steel finger-nail fixed to the finger and used as recommended by Sir William Dalby, is also serviceable for this purpose. In certain cases, Meyer's ring-knife introduced through the nostril is of use to scrape around the Eustachian orifices, the end of the instrument being guided by the forefinger behind the soft palate, as practised by Mr. Butlin, of London, whose method, in fact, of dealing with these growths, with the exception of the position of the patient and the management of the soft palate, does not differ very materially from the one described. But, as a rule, the happiest results may be accomplished with the forceps and the forefinger alone. With proper care and assistance there is no danger for the child, and in one sitting, occupying from ten to twenty minutes, it is practically cured of a complaint which may have existed for years.

The removal of the growths, however, is not accomplished in all cases with equal satisfaction. The conditions which make the operation difficult are an excessive amount of mucus in the throat, a large, thick tongue, enlarged faucial tonsils, a long distance from the lips to the posterior pharyngeal wall, a small space between the free border of the palatal curtain and the pharynx, and a deep naso-pharyngeal cavity. In no case has it been necessary to repeat the operation, though in two children, where the operation was prolonged, owing to some complication, it was thought at the time that a second sitting would be needed. Yet these children did perfectly well, which leads me to think that we need not be too energetic, or imagine that every particle of the growths must necessarily be brought away. The principal object of the operation is to establish free nasal respiration. If this be effected, a small amount of adenoid growth left behind may not do harm. The vitality of the remaining tissue is probably destroyed, and it will atrophy.

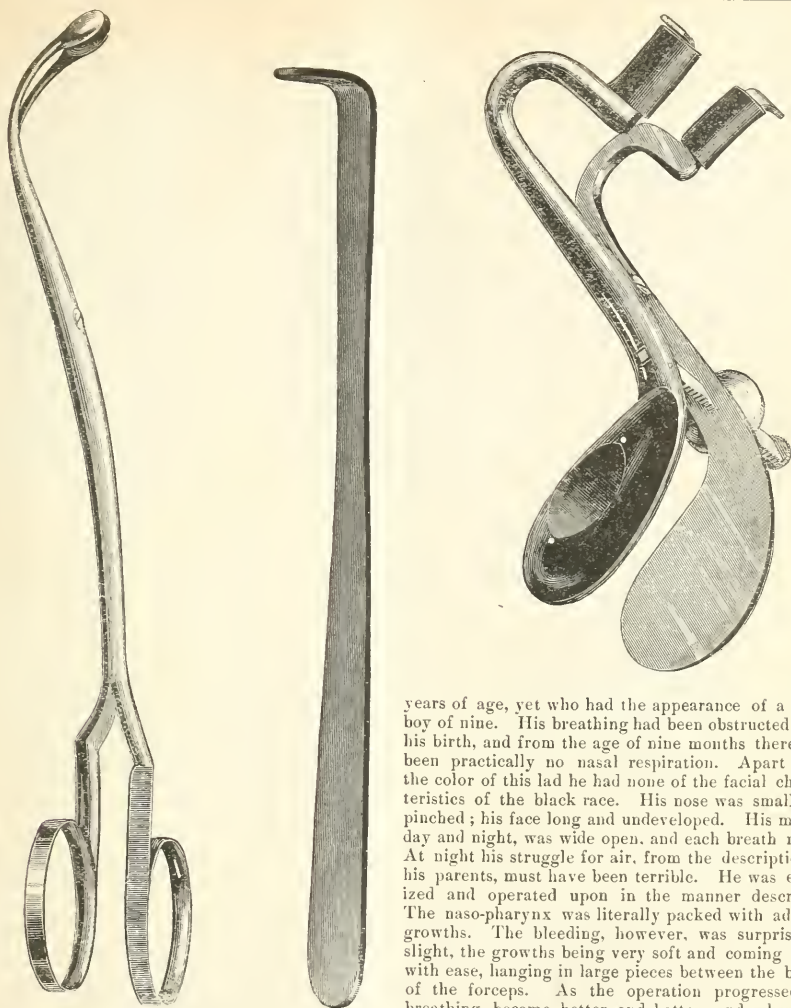
The growths do not recur after removal. In operating, as I invariably do, with the child in the upright position, it will be urged that there is danger of blood being sucked into the larynx. In speaking with practical surgeons concerning the operation this criticism has almost always been advanced. But the objection is theoretical, and with care and prudence no accident of this nature need be feared. There are no large bloodvessels in the naso-pharyngeal cavity to be wounded, and it is characteristic of the bleeding from the growths that it ceases completely in a few moments. The blood does not come with a gush, but will be seen to be trickling slowly down the posterior wall of the pharynx. That which is not sponged out flows into the stomach, and will be vomited later. Liquids naturally flow down the œsophagus, and not down the windpipe. The danger in operations about the mouth is from a clot of blood becoming wedged in the glottis, and it is easy to guard against its for-

mation in this operation. The bleeding varies greatly in different cases, and, as far as I am aware, there is no way of foretelling in any given case how profuse the hæmorrhage may be. The vascularity of the growths does not seem to be proportionate to their size, for some of the largest masses have bled insignificantly. In beginning the operation, go slowly and watch. When a portion of the growth has been removed, wait until the bleeding has ceased, and then proceed with the operation. These children with obstructed noses, especially if they happen to have enlarged faucial tonsils, are usually bad etherizers, and in many the accumulation of mucus in the lower pharynx is excessive, all of which is calculated to make the operator feel anxious; but no annoyance in any case has been caused by blood in the windpipe, and no surgeon who has been present at the operations, either at the Massachusetts General or the Boston City Hospital, or in my private practice, has seen cause for alarm on this score. There is more to be feared from vomited food lodging in the larynx than from a clot of blood. The ether, therefore, should be administered on an empty stomach. The degree of etherization must be sufficiently profound to abolish reflex action of the soft palate, so that it will yield to being held forward by the palate hook without resistance. It is important to keep the palate out of the way of the forceps, and no effort should be made to grasp the growths when it is contracted. For should its posterior surface or other healthy wall of the cavity be nipped, an obstinate and annoying hæmorrhage may take place. It will be an advantage for the operator to have a small index-finger; also a light hand and a delicate touch. It need hardly be said that he should possess a perfect familiarity with the situation of the different anatomical structures in the naso-pharyngeal cavity, and know the difference when feeling with the finger or with the forceps between the parts in a normal state and when covered by adenoid growths. In selecting a pair of post-nasal forceps for the operation, it will not do to take the first pair that comes to hand. The average instrument in the shops is unnecessarily cumbersome, and unnecessarily long. For children, the curve of the cutting end of the forceps should be small, and the length of the handles as short as possible and perfectly firm, so that when the cutting ends are in contact there will be no "give" at the handles. The ease and success with which these growths are removed under ether, where the sense of touch plays such an important part, depends very much upon the proper selection of instruments. The accompanying drawing shows the exact size of forceps¹⁰ which have been found to be the most serviceable for the average child up to the age of fourteen. The conventional hard-rubber palate-hook is also shown, as well as the mouth-gag preferred, which is easy to adjust, easy to remove, easy to keep clean, and never out of order.

With regard to the amount of this over-growth of glandular tissue which may be contained in the naso-pharyngeal cavity, it can only be said that it varies according to the size of the cavity; and this is subject to as wide variation in the child as in the adult. Children of the same age, therefore, having the same amount of adenoid hypertrophy, may present different symptoms of the complaint, owing to the relative capacity of their cavities, and consequently to the de-

* St. Bartholomew's Hospital Reports, 1885.

¹⁰ Made by Codman & Shurtleff, Boston.



Actual Size of the Three Instruments.

gree with which nasal respiration is obstructed. In one case the clinical picture would be complete, while in another deafness might be the only prominent symptom, owing to the situation of growths around the Eustachian orifices and at the pharyngeal vault, the large size of the space giving sufficient breathway.

The two cuts on the next page, photographed from the original specimens, and showing the exact size of the bottles, will give an idea of the quantity which may be taken out of a child's naso-pharynx.

Specimen No. 1 shows the largest amount removed at one sitting in any case, while No. 2 represents an average amount in typical cases about the age of eight years. Specimen No. 1 came from a negro fourteen

years of age, yet who had the appearance of a puny boy of nine. His breathing had been obstructed from his birth, and from the age of nine months there had been practically no nasal respiration. Apart from the color of this lad he had none of the facial characteristics of the black race. His nose was small and pinched; his face long and undeveloped. His mouth, day and night, was wide open, and each breath noisy. At night his struggle for air, from the description of his parents, must have been terrible. He was etherized and operated upon in the manner described. The naso-pharynx was literally packed with adenoid growths. The bleeding, however, was surprisingly slight, the growths being very soft and coming away with ease, hanging in large pieces between the blades of the forceps. As the operation progressed the breathing became better and better, and when the cavity had been completely freed, the change in the character of the respiration was most striking to all present. From being noisy and labored it had become free and peaceful. But this improvement in the breathing led to a new cause for alarm. The first night after the operation the boy slept so quietly that his parents could not persuade themselves that he was not dead, and went repeatedly to his bed to reassure themselves. They were actually kept awake by the absence of the noise which had disturbed them so many years. This is the only instance of the disease which I have met in the black race, and I was inclined to attribute the amusing account given by the parents of their experiences on the night in question to the mental peculiarities of the negro, and that it was based on ig-

norance and exaggeration. But another case, belonging to an entirely different station in life, recently operated upon, gave rise to the same kind of alarm to a near relative of the patient.

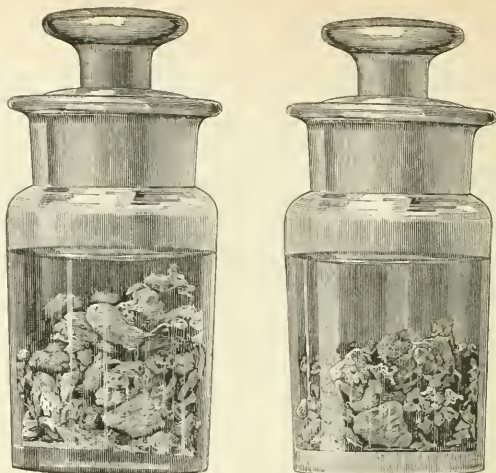
The patient was a girl nine years of age, and had always been under the special care of an older sister. Although the child had been a mouth-breather for five years her hearing was unaffected. Her breathing at night, according to her sister, who always occupied the same room, was distressing to hear. She was restless and liable to awake at the slightest noise. When taken with a cold she became feverish and slightly delirious. At such times she had to be propped up in bed with pillows, her breathing being of such a character that the sister feared the child was in danger of suffocation, and she often lay awake in anticipation of some accident, her chief guide being the noisy respirations. The sole cause of this child's trouble was a large adenoid growth completely obstructing the respiratory channel. After its removal her sleep became immediately so calm, sound and natural that the sister, not being able to accustom herself so rapidly to the change, found difficulty in convincing herself that the child was breathing at all, and was considerably exercised for three nights after the operation.

The treatment of a child in this condition is followed, not only by the cure of the patient, but by the restoration of peace to the whole household. Another good effect of the operation which may be noticed at once is the change in the quality of the voice. The first words the child speaks, in certain cases, are clearer, the resonating properties of the cavity being restored through the removal of the growths. This improvement is especially prominent in the singing voices of some children.

It is also surprising how soon the whole expression of the countenance changes. The mouth generally remains closed as soon as the nasal air-tract is made free, and the lines which have been formed at the angles of the mouth, nose, and corners of the eyes by the weight of the hanging lower jaw disappear very rapidly. In some of the children operated on more than a year ago, the improvement in their physique is most remarkable. The subjoined pictures will show the changes in three instances which have taken place after operation, and it is no exaggeration to say that the dispositions of these children undergo as important a change for the better as is manifested in their personal appearance.

Among the most gratifying results of the operation is its influence upon the restoration of the hearing. Of the 104 children operated upon, 47 have been in private practice. Out of these 47, 39 have been deaf. The majority of them have come to me through the advice of Dr. Blake, who has kindly consented to review this branch of the subject, and whose paper on the "Relation of Adenoid Growths in the Nasopharynx to the Production of Middle Ear Disease in Children" will be found in this issue of the JOURNAL.

The after-treatment is very simple, and, as a rule, there is nothing to be done beyond taking precautions



No. 1.

No. 2.

Actual Size of the Bottles.

to keep the child from catching cold. In winter, or in stormy seasons, the children should be kept indoors for a week, but in summer they may be allowed to go out and lead their natural lives as soon as they have fully recovered from the effects of the ether, or from any weakness due to the loss of blood. These points must be determined by the peculiarities of the individual children. Of my 104 cases, three, who had had previous trouble with the ears, developed an acute attack of inflammation of the middle ear; and one, on the sudden restoration of the hearing, suffered for weeks with a severe form of chorea. With these exceptions, there has been no accident to record due to the operation, nor is it followed by any shock. It is usually necessary to administer a large quantity of ether, and as soon as its effects have passed off, the patient may be said to be practically well. As a rule, the children breathe, sleep, and feel better than they have ever felt in their lives, and it is often difficult to restrain them and keep them in the house. Their regular diet may be taken, for, except in rare instances, there is absolutely no pain on swallowing in consequence of the operation. In fact, the children do not know that anything has been done to them. The absence of pain on eating after an operation on the "throat" where such large masses are removed, and attended occasionally by so much hemorrhage, makes a great impression upon those who are not acquainted with the situation of the growths, or with the physiology of deglutition. If any after-treatment is needed, it will consist of tonics and a detergent wash locally for the nose.

The foregoing remarks have intentionally been confined to the practical side of this complaint; namely, to the importance of its early recognition in children and its treatment. The removal of these growths, however, is not alone essential to the good health and personal appearance of children, for their indelible traces are often seen in adults. Although this glandular tissue tends to disappear after the age of puberty, it may be



M. M., age two years and seven months.



M. M., three months after operation.



E. A., age seven years.



E. A., six weeks after operation.



M. B., age twelve years.



M. B., three months after operation.

present in such large quantity as to lead to permanent damage before that period arrives, and its marks will be carried through life. Dr. Chatellier (loc. cit.) has called attention to the deformities of the bones of the head and face which result from neglected adenoid growths. He points out that the air-cavities, as the frontal, sphenoidal, and ethmoidal sinuses, and the antrum of Highmore, being normally in communication with the air, cease to develop when the circulation of air through the nose is interfered with, and hence the dimensions of the face are altered. The lower jaw, which follows its normal development, often protrudes over the upper jaw, which is contracted in front, the upper lip is drawn up, while the hard palate, from the constant atmospheric pressure within the mouth, is pushed upwards, terminating in a sharp angle, like the Gothic arch. It does not seem at all unlikely that the many cases of deafness in adults due to ankylosis of the ossicles, or other structural changes in the middle ear, and which are associated with the V-shaped palatine arch and contracted upper jaw, are the remains of these adenoid growths which accomplished their destructive work in early life undiscovered and unsuspected. The relation of this complaint to certain cases of deaf-mutism must be for future observation and experience to determine.

Dupuytren in his "*Mémoire sur la Dépression Latérale des Parois de la Poitrine*,"¹¹ says that no disease ever presented to him a more painful spectacle than that of an infant who had the parietes of the chest pressed in laterally, enlarged tonsils and violent whooping-cough. It experienced at each crisis of the cough such oppression that instant death seemed to be threatened; it died indeed in one of the paroxysms. That adenoid growths in the naso-pharynx were at fault in this instance, there can be but little question. Provided the naso-pharyngeal space be unobstructed, enlarged faucial tonsils cannot seriously interfere with inspiration, certainly not to the extent of producing the deformity of the chest walls described by the French writers already mentioned, also by Coulson,¹² of London, and by J. Mason Warren,¹³ of Boston. The children seen by Dupuytren "suffering under depression of the sides of the chest and enlarged tonsils at the same time, and who fell, after violent but useless efforts to breathe and after cruel suffering, into the most alarming state of convulsion, or into a state of suffocation, amounting to asphyxia from which state they recovered only to fall again into the same danger at the end of a few minutes," were the victims of adenoid vegetations.

It is apparent that the ravages of scarlet fever, diphtheria and measles, are more severe in children if these growths happen to be present. The various reflex phenomena, also, which may take the form of a true chorea minor, as Dr. A. Jacobi¹⁴ has observed, and for which the naso-pharyngeal cavity is responsible, should impress upon us the influence of this region upon the well-being of the child, and the importance of paying attention to it. Its most frequent affection in children is the one we have been here considering, and I can only repeat, what I said in my first paper on this subject, that there is no other disease in the domain of him who confines himself to the upper respi-

ratory tract, the treatment of which is attended with more satisfaction to the operator, or with more permanent relief to the patient. If the results in all children are not equally good, owing to more or less permanent damage before the removal of the growths, the operator has at least the gratification of restoring to the children a permeable air-tract.

RELATION OF ADENOID GROWTHS IN THE NASO-PHARYNX TO THE PRODUCTION OF MIDDLE EAR DISEASE IN CHILDREN.¹

BY CLARENCE J. BLAKE, M.D.

THE subject of adenoid growths in the naso-pharynx and their effect upon the organ of hearing has been so well treated by Meyer,² Loewenberg,³ and others, that the present paper must, in justice to these acute observers, be regarded rather as a recapitulation, the motive for which is that, in view of the large number of cases of this class among children, attention cannot be too widely drawn to a cause of aural disease often unrecognized, and when once found easily removable.

The fact that the artist Catlin⁴ was led to classify and contrast the so-called mouth-breathers among whites with the nose-breathing American Indians among whom he lived and sketched for many years, is sufficient evidence of the recognizable existence of such a class in our community, although the local cause of what he stigmatizes as a vicious habit was not appreciated by him, or indeed by any physician even, so far as we have record, until Czerniak signalized the invention of his method of rhinoscopy by the discovery of these glandular tumors.

That Catlin's artistic eye should have been offended by the distortion of the human face which he so graphically portrays is to be expected, but he also mentions impairment of hearing among the accompaniments of the "bad habit of mouth-breathing."

Since the organ of hearing is the channel through which, pre-eminently, in childhood the stimulus to mental development comes from the outer world, a fact of which we have ample evidence in the results both of physiological experiment and clinical experience, and since the enlargement of Luschka's glands is a disease of childhood particularly, though its consequences may continue through adult life, a recognition of the relation which this disease bears to the hearing power is of great importance.

The presence of adenoid growths in the naso-pharynx affects the organ of hearing and its function mainly in two ways — by interference with the ventilation and with the blood-supply of the middle ear. To clearly review the manner of this interference it is well to consider the means provided for continuing a definite supply of air in the middle ear, and for maintaining a just balance of the arterial and venous circulation in that part of the organ of hearing which suffers most immediately from the filling of the naso-pharyngeal cavity and consequent closure of the Eustachian tube. This passage, the Eustachian tube, which is both drain and ventilating shaft, is in the

¹ Read before the Boston Society for Medical Observation, February 6, 1888.

² W. Meyer. Ueber adenoidale Wachstungen in der Nase- und Rachen-höhle. Arch. f. Ohrenheilk., 1873-74.

³ B. Loewenberg. Les tumeurs adénoïdes du pharynx-nasal. Paris, 1879.

⁴ Catlin. The Breath of Life.

¹¹ *Répertoire Général d'Anatomie et de Physiologie*. 1828, p. 110.

¹² *Deformities of the Chest*, 1837.

¹³ Enlargement of the Tonsils attended by certain Deformities of the Chest. *Medical Examiner*, May 18, 1839, p. 309.

¹⁴ *The American Journal of the Medical Sciences*, April, 1886.

child both shorter and wider than in the adult, its tympanic orifice is comparatively large, but the pharyngeal orifice is indicated only by a slight depression or fissure in the lateral pharyngeal wall, and the posterior prominent portion of the tube which forms a decided projection in the adult is hardly noticeable.⁵ The former of these anatomical conditions, as is evident, favors rapid recuperation after restoration of patency of the Eustachian tube, and the latter renders that passage much more easily occluded at its faucial end by the pressure of any substance filling the naso-pharynx. The constant permeability of the upper portion of the Eustachian tube has long been a question actively and ably discussed on both sides for and against, but the weight of evidence is now in favor of the view that the Eustachian tube is not a constantly open ventilating shaft for renewal of the air in the middle ear. As the air in the middle ear is being absorbed constantly, with greater or less rapidity according to the state of the circulation in the mucous membrane, its renewal must be provided for by gaseous interchange,⁶ or by the operation of such mechanism as shall, by opening the Eustachian tube, and at the same time causing increased atmospheric pressure in the naso-pharynx, assure the ventilation beyond peradventure.

This process, in which the acts of deglutition and of phonation play an important part, is provided for through the operation of two muscles, the levator and tensor palati molles, both of which are double-action muscles, being attached at the one end to the soft palate, and at the other to the anterior and inferior walls of the Eustachian tube. Each voluntary movement of the soft palate, therefore, is accompanied by the contraction of the palatal ends of these two muscles, and by a corresponding movement at the tubal ends, the result being a withdrawal of the anterior from the posterior wall of the Eustachian tube, and at the same time a depression of the inferior wall or floor of that passage giving it a greater inclination downward toward the pharynx. The same movement which opens the Eustachian tube, by lifting the soft palate, tends to compress the air in the naso-pharynx, and so favors still further the ventilation of the middle ear.

The same simultaneity of action, and the same effect in a lesser degree, is found in phonation. In the production of all the consonant sounds, with exception perhaps of the sibilants, there is more or less back pressure, pneumatic pressure in the pharynx and naso-pharynx, while with all the back consonants so-called, *k, g*, for instance, there is in addition a very strong and decided muscular contraction of the soft palate, as shown by the very interesting tracings made with the palate myograph,⁷ and in the use of the glosso-graph of Amadeo Gentili. Control experiments made by the writer in cases of perforation of the membrana tympani by means of manometres placed in the ear, and in cases of manometric cicatrices of the membrana tympani by direct observation of the movements of the cicatrices show that there is a decided increase of air pressure in the middle ear coincidently with the pronunciation of the consonant sounds, and most markedly with *m n ng* and the back conson-

ants, while the forcible expulsion of air and the elevation of the soft palate in crying produces movements of the manometric cicatrices which show that this operation tends also to assist materially in the process of ventilation of the middle ear. In addition to these more active provisions for this purpose, namely swallowing, speaking, crying, and the numerous co-ordinate muscular movements of the throat, there are the passive movements of the soft palate and the changes of air pressure in the middle ear, which occur during sleep with each respiration.

With the presence of a growth in the naso-pharynx this admirably working mechanism is interfered with, and even if the growth is not sufficiently large to occlude the faucial orifices of the Eustachian tubes, it interferes with the palatal movements, and with the proper balance of air pressure in the naso-pharynx, and is inevitably productive of injury to the ear, the result of the decreased air pressure being the production of a partial vacuum in the middle ear, with its consequent train of congestion, swelling of the mucous membrane, and trophic changes of greater or less permanency according to the duration of the abnormal condition. That it is not necessary that the growth should be a large one to influence the ear is shown by the effect which a small growth has upon the pronunciation of all the nasal consonants; that is to say, upon the palatal movement. Where the growth is large and exerts considerable pressure on the walls of the naso-pharynx, there is in addition to the consequences already mentioned an effect directly upon the blood-supply of the Eustachian tube and middle ear by interference with the return of the blood from the middle ear through the tubal into the lateral pharyngeal veins.

A portion of the blood-supply to the anterior and superior portions of the tympanic cavity and to the membrana tympani comes through a small artery running along the upper walls of the Eustachian tube, the blood so supplied being returned in part through veins running superficially downward in the tubal mucous membrane. Mechanical pressure on the lateral pharyngeal wall, in the neighborhood of the Eustachian orifice may therefore result in a blood stasis in the middle ear, and in an objective condition similar to that admirably described by Boucheron, as seen by him in certain cases of so-called deaf-mutism in children whom he relieved by catheterization of the Eustachian tube. The description by Boucheron of a membrana tympani, dull, greatly depressed, and of the deep blue-red color indicating venous congestion of the middle ear, appearances markedly seen in some of the cases which suggested this paper, permits the supposition that in some of his cases, also, he had to deal with the results of adenoid growths in the naso-pharynx.

The train of aural symptoms which come from the presence of adenoids are, therefore, such as would result from interference with the normal ventilation and nutrition of the middle ear tract, and are more or less permanent, according to the duration and size of the adenoid growths.

In the earlier stages, when the growth is small, the ear is noticeably affected only when, in addition to the bulk of the growth in the naso-pharynx, there is added the encroachment upon the space of that cavity by swelling of the mucous membrane, accompanying so-called head-colds. As the growth increases less

⁵ Politzer, *Lehrbuch der Ohrenheilkunde*.

⁶ Loewenber, *De l'échange des gaz dans la caisse du tympan*, Progr. Méd., Feb., 1887.

⁷ A new method of studying the motions of the soft palate, Dr. Harrison Allen. Phila., 1884.

and less swelling effects the deleterious purpose, and the intervals of freedom from impaired hearing, nocturnal ear-ache, and subjective noises in the ears become shorter and more rare. In the meantime changes are taking place in the structures of the middle ear which are more or less permanent; the preponderating pressure on the outer surface of the membrana tympani pressing that membrane inward, and allowing the relaxed tendon of the musculus tensor tympani to contract and hold the malleus, and with it the membrana tympani, in its abnormal position, tends, as does also the thickening of the mucous membrane, to permanently impair the mobility of the sound-transmitting mechanism of the middle ear, or, as is seen in some cases, the impairment of nutrition, lowering the vitality of the delicate tissues in the middle ear, an ulcerative and suppurative process is easily set up under the necessary additional provocation.

In some of the cases mutually observed by Dr. Hooper and myself there was suppurative inflammation of the middle ear, which first showed any gratifying response to local treatment only after the removal of the adenoid growths.

In reference to the aural symptoms, the cases under consideration may be divided into three classes. The first includes those in the earlier stages of the adenoid growths, which have had occasional ear-ache and the occasional impairment of hearing apparently readily referable only to what is called a head-cold. These children have very variable hearing, are frequently accused of inattention and disobedience, and are either too young to know, or have too slightly noticeable an impairment of hearing to appreciate that their derelictions are sins of the flesh and not of the spirit. The effects to the ear of the removal of the growth in the naso-pharynx are often appreciable only to the trained observer; the child is freed from a catarrhal affection, and the improvement in hearing, if any is noticed, is taken for what it is, a matter of course. An objective examination of the ears, however, shows that there is no longer a slightly congested condition of the tympanic mucous membrane, and in the course of time the thickening of the mucous coat of the membrana tympani is seen to be decreasing. In the second class are the more advanced cases, in which, the preliminary stages being passed, the impairment of hearing and the structural changes have become recognized as fixed facts, the impairment of hearing in some of these cases being so great and so persistent that the child is regarded either as a deaf-mute, or even as idiotic, the well-known effect of obstruction of the hearing upon the mental development favoring the latter supposition. In many of these cases it has been found that catheterization of the Eustachian tubes, the air douche proving ineffectual on account of the blocking of the Eustachian orifices and interference with the movement of the palate by the growth, has decidedly and immediately improved the hearing, and entirely changed the objective symptoms in the ear, the membrana tympani, previously dull both in color and in lustre, returning to the normal appearance in a greater or less degree in both respects.

The improvement in both appearance of the ear and in hearing power in these cases, consequent upon the use of the Eustachian catheter, is, however, but temporary, the true cause of the abnormal condition remaining.

In by far the largest majority of such cases the removal of the adenoid growths is followed by an immediate and gratifying improvement in hearing, which in some of them remains unabated. In others, however, the impairment is again noticeable at the end of a few days. In all of these latter cases there is accompanying, and as a result of the adenoid, a considerable swelling and congestion of the naso-pharyngeal and tubal mucous membrane, enough in itself to interfere materially with the physiological action of the Eustachian tubes. The free bleeding following the operation upon the adenoids sufficiently depletes the swollen mucous membrane to bring about a condition of freedom for the middle ear temporarily, which is permanently attained subsequently only by patiently continued treatment.

To the third class belong those cases, already alluded to, in which suppurative otitis media is a result of the disease in the naso-pharynx plus some local exciting cause, or is merely a coincident of a suppurative disease of the middle ear of other origin. That the maintenance of patency of the Eustachian tube is an important factor in the successful treatment of these cases is well recognized, and in at least two of the cases which are the subject of this joint memoir, the effect of the removal of the adenoids upon the response of the ear to the same treatment which had been previously pursued was most gratifying.

A classification of the cases mutually observed and operated on under either by Dr. Hooper, which are the only ones here included, shows that out of the whole number, thirty-nine, or nearly eighty-three per cent., had evidence of more or less implication of the ear, and that of that number in thirty-five, or nearly ninety per cent., the result as evidenced by the improvement in hearing was eminently satisfactory.

Comment upon the importance of a recognition of these cases, and the application of an early remedy, is, in view of these and similar results of other observers, and of the known consequences to the hearing in later life, of the persistence of these abnormal conditions, quite unnecessary. It is well to bear in mind, however, that with the removal of the adenoid growths the work—as regards the ear—is not entirely done, and that the rhinologist and otologist must act as friends in council; the removal of the cause is the first step, it is true, but, though as Dr. Holmes says—and this seems especially true of children—"Nature is kinder than the doctors think," some assistance is needed in many of these cases to help on the removal of the consequence of the cause.

NOCTURNAL INCONTINENCE OF URINE.¹

BY F. M. BUCKINGHAM, M.D.,
Instructor in Diseases of Children, Boston Polyclinic.

THE subject of nocturnal incontinence of urine in children is of interest both from the obscurity that sometimes surrounds its etiology, and from the great annoyance to which it subjects the patient and his friends. It is a symptom, and, like many other symptoms, does not always depend on one and the same cause.

Aside from cases depending upon deformity, upon

¹ Read before the Boston Society for Medical Observation, February 6, 1888.

reflexes from outside the bladder, as phimosis or pinworms for example, or from calculus within the bladder, or an abnormal quantity or quality of the urine, causes which all together, probably exist in but a minority of the cases; writers on the subject seem to recognize quite commonly that the immediate exciting cause may be either an over-sensitive condition of the expelling muscles, or atony of the sphincter of the bladder. This explanation is of course only partial, it being still incumbent on us to explain the course of atony or over-sensitiveness. In looking over the record of the Medical Out-patient service of the Children's Hospital I find that of twenty-six cases applying for treatment there since early in 1883, five only have presented themselves in the six months April to October, while twenty-one have appeared from October to April, possibly because of greater perspiration in summer, and consequently fuller bladders in winter. The disparity is even more striking when one considers that the clinic is larger in summer, and, however explained, it certainly suggests weather as having an influence in the matter.

As my own service in this hospital has been until recently confined to the months in which these cases apply least frequently, I can say nothing learned from this source, nor have I had the time to study the records of the other out-patient rooms accessible to me. My recollection, however, is very strong that in the years when I was annually in charge of the children's room of the Boston Dispensary, for three of the winter months there were a number of debilitated anæmic children suffering from incontinence who were speedily relieved, for a time at least, by the use of iron. This is perhaps less likely to be the case in the better class of patients seen in private practice, and such an explanation accounts for their not being recognized by some good observers of considerable experience. I cannot recall any private patient of my own successfully treated by iron, although I have used it a few times.² These debilitated cases in so far as I can see, are as likely to have irritability of one muscle caused by their debility as atony of another; but it appears to me to be good practice to attempt the restoration of their health before beginning the use of sedatives, especially so as that may be all-sufficient, and as the prolonged use of sedatives, while often necessary, is not a thing to be lightly entered upon with a debilitated child.

The following case illustrates, to my mind, the existence of debility as a cause of nocturnal incontinence:

A not very strong boy of nine years had had for a long time attacks of incontinence at night, which had been relieved by belladonna or atropia, but which always returned after a time. When the course which I am about to describe began, the trouble had lasted for some little time, and the accidents were of nightly occurrence. He was given a solution of atropia in acidulated water, one grain to the ounce, making each drop contain gr. $\frac{1}{150}$ of atropia. Of this was given one drop for the first two doses, two drops for the next two, three for the next two, and at the seventh dose four drops, equal to gr. $\frac{1}{15}$, there being three doses in the day. At various times it became

necessary to stop the progressive increase of dose because of malaise or intestinal disturbance, or some symptoms more certainly attributable to atropia, but on the whole the medicine was pushed, except when some results, good or bad, indicated a stop.

When the dose equalled gr. $\frac{1}{30}$ incontinence occurred only once in every few days instead of every night, but there was some thirst, and the pupils were less active. The morning dose was then omitted, that at noon lessened, and the increase of evening dose went on, this increase stopping with temporary improvement, and beginning again with failure, until gr. $\frac{1}{8}$ was given at noon and at night, with the effect of giving a respite of nine successive nights. By this time, about two months from the beginning, the child was far from well. He was dull, with coated tongue, poor appetite, and dilated pupils. A bright red rash appeared for a few hours.

The night dose was then retained and the others omitted, a drop of tr. of nux vomica being substituted in the morning, that being a tonic that always agreed with the patient. Soon the night dose was reduced drop by drop, until, after ten days of a single daily dose, it being then gr. $\frac{1}{4}$, he wet the bed. The child looked very badly, with a very dry skin, and an absolute distaste for food. Fourteen nights had been the greatest success, and the use of atropia was stopped. Five nights passed without accident, and then incontinence gradually returned. The child was under treatment for another month for gastro-intestinal disturbance, with a general venous condition and a dry skin, none of which existed at the beginning of treatment.

During the following two and a half years the condition was much the same as before this course was begun; that is, he was a rather puny boy, with a whimsical appetite and possibly rather less incontinence than before, but never going over four nights without an accident. During this time he several times got nux vomica as a tonic.

Then an attempt was made with faradization from just above the sacrum to the perineum for four minutes at a time, every fourth day, he having in all six sittings. Perhaps this was not long enough for a fair experiment. At any rate he never went over three nights without accident, while without electricity he had sometimes gone four.

Shortly after this he went on a long summer vacation, learned to swim, I think, was out of doors all the time, and returned in the autumn nearly well, improvement having been gradual. More than two years later I learned from his mother that there had been no return of his trouble. At the same time the general improvement in physical condition and increased delight in out-of-door sports was something remarkable.

I am well aware that this case may be differently interpreted by different minds, but it is to be observed that the child was a weak one, that the case was severe and of long continuance, that there was no improvement during the use of electricity preceding the vacation; and that improvement, when it did come, came step by step with greatly improved physique, and was complete in a few months; and that, as the child was only eleven, one can hardly attribute recovery to the approach of puberty, as is sometimes done.

This case, in connection with those of relief closely following the use of iron, seems to suggest at least a

² Since the above was written, I have been able to relieve a private case of long standing, by the use of iron alone. The child being in good circumstances but rather anæmic. E. M. B.

possible lesson, and my apology for presenting them to the society is that there are, as before said, some good observers, of experience, who think that they have seen little or no result from treatment directed to the general condition alone.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

CHARLES P. STRONG, M.D., SECRETARY.

MEETING February 6, 1888, Dr. C. F. FOLSON in the chair.

Dr. F. H. HOOPER read a paper on

THE DIAGNOSIS AND TREATMENT OF ADENOID VEGETATIONS IN CHILDREN.¹

Dr. C. J. BLAKE supplemented the paper with

REMARKS UPON THE RELATIONS OF THESE GROWTHS TO DEAFNESS.²

Dr. E. D. SPEAR thought that he could add little in supplementing the instructive papers of Drs. Hooper and Blake, but wished to show photographs, taken by himself, of several cases in which adenoid disease of the naso-pharynx complicated various forms of disease of the middle ear, causing the peculiar appearance of the child's countenance referred to, and explained in Dr. Hooper's paper.

In the removal of the growths he had followed Sir Wm. Dalby in using the finger-nail, and in the majority of cases with success, though it was usually necessary to repeat the operation.

Marked improvement immediately followed the operation, both of the ear and throat symptoms.

Dr. Spear showed a "steel finger nail," which was suggested by Dalby's, but which was to be used upon the back of the finger, thus leaving its palmar surface free to feel the growth. He did not advocate its use, however, because cases requiring forcible scraping were best treated after Hooper's method, with anaesthesia.

Dr. KNIGHT said that the paper and experience of Dr. Hooper were very valuable contributions to the subject of adenoid hypertrophy in young children and its proper treatment, and that it might not be improper for one familiar with the subject to indicate in just what direction Dr. Hooper's communication was of much practical value.

In the first place, the large number of cases reported by Dr. Hooper, taken in connection with the large experience of Butlin, in England, and Hoffman, of Germany, to say nothing of the lesser experiences or others, should set at rest the fears of removing adenoid hypertrophy at the vault of the pharynx during general anaesthesia. There had been great dread when this was first proposed, and by none more than by surgeons familiar with anaesthetics, that blood would run into the larynx in such quantity as to produce danger of suffocation by spasm, or otherwise. Experience has shown, however, that the reflex excitability of the pharynx being retained, the blood is swallowed, and often vomited afterwards in large amount.

In the second place, Dr. Hooper's cases were evidence that the removal of the growth could be effectually performed under general anaesthesia, and without the aid of the rhinoscopic mirror. The contrary of both these statements had been quite recently made by eminent authorities. In regard to the latter point, a recent text book had declared that operations on the adenoid should never be attempted except the forceps were guided by the mirror.

In most cases of young children we have either got to make the diagnosis and carry out the treatment by the sense of touch alone, or let them go without either.

In the third place, Dr. Hooper's experience shows us that the number of cases of adenoid hypertrophy requiring relief is much larger than is generally supposed. It is only another instance of the fact that we don't see a thing until we look for it. A distinguished clinical teacher and writer in a paper on the relation of diseases of the throat to those of the ear, had said within a very few years that he had never seen a case of deafness due to adenoid hypertrophy! If he had examined all the deaf children who had come under his observation, using digital exploration when rhinoscopic was impossible, with reference to this one point, he would undoubtedly have found many.

Just what cases should be operated on, and just what cases can be left for the natural atrophy is not yet decided, but there can be no doubt about not only the propriety, but necessity, of operating, in case deafness is already present, or when the child is afflicted with serious nervous symptoms, deprivation of continuous sleep, etc. The immediate change in the whole well-being of such children after operation is wonderful.

Great care should be taken of children after the operation. Although it may be hard to follow the practice of Butlin and keep them in bed for a week, they can at least be kept in the house. Not only is the sudden communication of the middle ear with the out-door air liable to cause trouble, but the loss of so much blood is said to increase the liability to bronchitis and pneumonia.

Dr. KNAPP, who was present by invitation, said that he had been much interested in the result of Dr. Hooper's operations. He had seen adenoid vegetations a year ago in a patient who had cerebral infantile paralysis of an unusual type, — not the ordinary form of paralysis with rigidity and contraction, but a partial paralysis with intermittent spasm, ataxia, and associated movements. The combination of the paralysis with the peculiar expression caused by the adenoid growths — the half-open mouth, the dropped and protruding lower jaw, the half-articulate speech, the vacant expression, and the constant drooling — led to the thought of idiocy, but he was surprised to find that the child was bright and intelligent. The parents were anxious to have something done for the drooling, even if nothing could be done for the paralysis. Thinking that the drooling might be caused by some trouble in the nose or naso-pharynx, he sent the child to Dr. Hooper, who found a mass of adenoid vegetations, which were removed. On seeing the child a month or two later, he was struck with the change in her appearance, from an apparent idiot she became a bright and attractive child. Some time after he saw a second case of cerebral infantile paralysis, with the

¹ See page 261 of this number of the Journal.

² See page 268 of this number of the Journal.

same symptom complex, only less severe, where there was also drooling and mouth-breathing. This child suffered from frequent colds, which were doubtless induced or aggravated by the fact that the constant drooling kept the clothing over the front of the chest constantly wet. Dr. Hooper operated on this child, and the speaker had seen him a month ago greatly improved. A third case, on which he had seen Dr. Hooper operate was an idiot. He believed that adenoid growths were often the cause of the drooling seen in idiots, and he thought that operation might relieve a very unpleasant and repulsive symptom. He had been struck with the co-existence of this condition with the rare form of paralysis. Certain deformities of the bony structure of the nasal and oral cavities, notably the high narrow palate, are not uncommon in cases of arrested cerebral development, either secondary to it, or a cause of it, from premature ossification of the sutures; might it not be possible that there was also some connection between these growths and the arrested development?

Dr. DEBLOIS spoke of the atrophy of these growths in adult life, and alluded to cases in his practice where the extreme toughness of the vegetations rendered their removal impossible.

Dr. F. B. HARRINGTON said that the slight difficulty arising from bleeding was at first a surprise to him, but in the number of cases that had come under his observation he had never seen any trouble, the blood readily flowing down the œsophagus.

Dr. E. M. BUCKINGHAM read a paper upon

NOCTURNAL INCONTINENCE OF URINE.*

Dr. FOLSON had seen a number of cases of incontinence of urine in children, and had rarely failed of success in their treatment with electricity used persistently, and of as strong a current (faradic) as the child could comfortably bear. In a few cases, circumcision is also required. These children are chiefly neurotic or of neurotic families and for the most part sound sleepers. In some of them the neuropathic element is so strong that they never fully learn to control their bladders except as they grow older; in the mean time they must be awakened at night at gradually lengthening intervals.

Dr. F. C. SHATTUCK had in one case failed with the induced current, one pole in the rectum, the other on the perineum, and afterwards attained a large increase of success with belladonna and nux vomica.

Some years ago he had been called to advise a lady who for seventeen years had been unable to hold her water for more than an hour at a time, a source of very great inconvenience to her. She had been treated by one physician without benefit. She was of a gouty family and had also some symptoms of that disease. The diet was regulated, and moderate doses of belladonna and nux vomica combined effected a complete cure, belladonna alone having failed.

Dr. A. H. NICHOLS has found all medicinal treatment of *incontinentia urinæ* as a rule unsatisfactory, owing to the obscurity with which the cause of the disorder is apt to be surrounded. Where, however, the trouble is of mechanical or reflex origin, such as is furnished by intestinal parasites, prompt relief may at times be afforded. A rare instance of this kind was related where a boy, having been ineffectually treated for a long period, was taken, on account of

certain nasal symptoms, to Dr. Langmaid. This gentleman removed from the posterior nasal cavity a calculus, the nucleus of which was formed by a button which, it was then remembered, had been pushed within the nose some eight years previously. This operation was followed by an immediate and permanent cure of the incontinence.

Dr. J. S. GREENE reported a case of

ANEURISM OF THE ARCH OF THE AORTA.

The patient was a man, fifty-two years of age, a barber, of temperate and quiet habits. It is told that he used occasionally to have a wrestling struggle for fun with a man much younger than himself. Two-and-a-half years ago he began to be wheezy and to expectorate much mucus. Two years ago his voice began to be perceptibly husky, and after a few months he seldom spoke louder than a hoarse whisper. Two years ago, also, he had a sudden seizure of muscular lameness about the right shoulder which was promptly relieved by faradization; but thence forward he had frequently recurring stitches in the back and gradually a settled pain, which persisted during life at a point between the lower angle of the left scapula and the vertebral column. Decubitus was early limited to the left side. It became very hard and wearisome to keep his arms lifted at his work, and he was obliged to sit and rest after serving each customer. In the spring of 1887, he had to give up work. With some improvement in strength, he resumed for awhile in the autumn, but was unable to do much. Cough was a capricious symptom, being sometimes present to an annoying degree for weeks together, and then absent for a time. Late in November last he was suddenly seized at his shop after coughing, with urgent and alarming dyspnoea, accompanied by lividity, pallor and a thready pulse. After rallying from this condition under the influence of a quarter-grain dose of morphine used subcutaneously, he was conveyed home and there remained until his death, two days ago. During December, he had several similar attacks of dyspnoea without other apparent provocation than a slight cough, and always relieved by morphia. During the last five or six weeks of life, while exempt from these seizures, the mucus expectorated was daily more or less tinged with blood.

During the period of his final confinement to the house, he sat by day most of the time or wearily reclined towards the left, but at night could lie in bed without much orthopnoea. In the last two weeks of life, he had two or three choking fits with pallor, faintness, coldness and failing pulse, and in such a one he quietly died in his chair. The physical signs during his illness were a small pulse, without inequality at the two wrists: a heart with its apex-beat distinct and of about normal force, at the middle axillary line about level with the nipple; and a systolic impulse not strongly heaving but uniformly diffused over the whole left front, and extending at least an inch to the right of the sternum; marked venous turgidity at the neck; apparent pushing outwards of the upper part of the sternum; and bulging of the tissues at the base of the neck in front. There were never discovered any cardiac or other murmurs, nor abnormal chest-sounds of any kind, and there was never hæmorrhage more than the late bloody expectoration above mentioned. On this total of symptoms and signs, positive and negative, a clearly satisfactory diagnosis was not made:

* See page 270 of the Journal.

but an aneurism dislocating the heart toward the left was regarded as the most probable condition.

Dr. R. H. Fitz showed the aneurism.

The aneurism is fusiform, of the transverse portion of the arch, and is of the size of the head of a newborn child. The large branches of the arch arise from the anterior portion of the sac, near the middle, and are flattened but patent. The left pneumo-gastric nerve becomes lost in the wall of the aneurism.

The interna of the pulmonary artery, between the heart and the aneurism is separated from the middle coat over a distance of nearly two inches from immediately above the valves. Between the two coats is a dark-red thrombus of sufficient thickness to diminish the calibre of the cavity of the artery more than one-half. A probe passed beneath the detached interna at the upper end, enters the cavity of the aortic aneurism.

In the anterior wall of the trachea, about an inch above the bifurcation, is a nipple-shaped prominence in the centre of which is an opening permitting the passage of a probe into the aneurismal sac. A minute opening is also seen in the œsophageal wall through which a probe is passed directly into the aneurism. The left primary bronchus is flattened to a moderate extent. The corresponding lung is aerated, with the exception of a considerable portion of the lower lobe, which is collapsed and of a purple color.

The wall of the aneurism is thin and fibrous and is lined with a laminated, translucent, reddish-gray thrombus, in places nearly two inches thick. A less firm, darker thrombus, with an irregularly lobulated and ridged surface, is adherent to the older thrombus, and surrounds the canal for the passage of blood, which is large enough to admit the closed fist. The thrombus obstructs, though not completely, the orifices of the primary branches of the arch. The portions of aorta attached to the aneurism are dilated and elongated, the wall thickened, the interna wrinkled and opaque.

There is no enlargement of the cavities of the heart with the exception of a moderate dilatation of the right ventricle. The valves and muscular substance present no abnormal appearances.

THE NEW YORK ACADEMY OF MEDICINE.

STATED MEETING, February 16, 1888.

Dr. A. SEIBERT read a paper on

CHOLERA INFANTUM AND THE WEATHER.

Under the term cholera infantum, he explained that he included all cases of acute gastro-intestinal catarrh in children under five years of age. The paper was based upon observations made during a period of ten years, extending from January, 1878, to January, 1888, in the children's department of the German Dispensary, and was illustrated by a large number of charts. In a similar manner, he said, he had endeavored to point out the relation of the weather to fibrous pneumonia in a paper which he had published in the *American Journal of the Medical Sciences* in 1882.

The total number of cases of acute gastro-intestinal catarrh treated at the Dispensary during the ten years referred to was 8,036. As was naturally to be expected, the largest proportion of cases occurred dur-

ing the summer months, and the smallest number in the winter months. Thus, in the ten Julys there were 2,443 cases, and in the ten Augusts 1,524 cases; while in the ten Februarys there were only 117 cases. The monthly averages, however, were simply guides in the present inquiry, and it was not enough to take these alone. His statistics, as well as those of the Health Department, showed that the disease existed all the year round, even in the coldest weather, and that the proportionate mortality was just the same in cold as in hot weather—about one case in every four proving fatal.

It was a somewhat remarkable fact, the number of cases and deaths was always much greater in the month of July than in August. Thus, during the ten years the number of deaths reported in the city of New York in the month of July amounted to 12,428, and those in August to only 6,205. In July, 1881, when the mean temperature was 80°, the number of cases treated in the Dispensary was 290; in August of the same year, when the mean temperature was 82°, the number of cases was 223; and in September, when the mean temperature was 87°, the number of cases was 137.

During the summer months, it was found that the number of cases and of deaths bore no relation whatever to the rise and fall of temperature, and the same was true as regards the range of humidity; so that warm, moist weather did not predispose more to the disease than warm, dry weather. Dr. Seibert said that he had also made a very thorough investigation of the effect of light and heavy rain-fall, but totally without result. Previous to this it had been a favorite idea with him that want of water on the upper floors of tenement-houses was a somewhat important factor in the causation of summer complaint in the city. Local rain-fall also had no effect, and the same was true in regard to the velocity of the air-current.

Six years ago, he said, he had first pointed out the necessity of careful study of details, rather than of general averages, in connection with such subjects as this. As yet it was a disputed point whether direct heat was capable of causing the disease in question, and he had made a special study of all the hot days in the ten summers (when the thermometer reached 85° or higher). According to prevalent opinion, the months containing the greatest number of hot days ought to have had the greatest number of cases and of deaths; but he had found no evidence supporting this idea. Thus, in the last two weeks of June, 1880, there was a large proportion of these hot days, and in the same period of 1887 there were but few of them; yet the number of cases was just about the same in both of the fortnights mentioned. Again, in July, 1881, when there were but few hot days, there were 290 cases; while in July, 1887, which was considerably hotter, there were only 196, a ratio of 3 to 2. In July, 1884, the temperature never reached 90°, there were only three days when it went above 85°, and but eight days when it went above 80°. Yet there were 266 cases; while in August of the same year, which was a much hotter month, there were only 156 cases, or about one-third less. The difference in the mortality in the city during the two months was even more striking; the number of deaths being 1,109 in July, and only 633 in August. Yet this July was made up for the most part of what is usually regarded as very healthy weather; there

-being little excess of heat, frequent showery days, and many days with strong westerly breezes.

How, then, were we to account for the fact that in the warm months there are always such a large number of cases? It was evident, from the facts just pointed out, that *hot* weather was not necessary for the production of the disease. In regard to *warm* weather, however, the case was different; and the statistics collected showed that, in the early part of the summer season, as soon as the minimum daily temperature reached 60°, and this continued for a few days, an increase in the number of cases of acute gastro-intestinal catarrh was noticed. Furthermore, if the minimum daily temperature remained above 60° for a number of days (say for a week or more), it was noticed that the disease became epidemic; and this no matter how high above 60° the temperature might go, whether it was 75°, 80°, or 85°. These facts were found to be true in every one of the ten years which the statistics included. The reverse was noticed at the close of the warm season in October, the month of departure. During the first half of the month the minimum daily temperature usually reached 60°; but in the latter half, when the colder weather set in, the end of the epidemic occurred.

An examination of the records of every summer month, and of every day of each month during the ten years, had led him, thus, to the following conclusions:

First. Hot weather, either dry or moist, is not necessary for the epidemic appearance of acute gastro-intestinal catarrh.

Second. Warm weather, either dry or moist, showing a minimum daily temperature of not less than 60°, brings on the epidemic every year, irrespective of the height of the maximum daily temperature.

Third. The disease loses its epidemic character as soon as the minimum daily temperature falls below 60°, as in October.

Fourth. Therefore, this disease cannot be brought about by the direct effect of high temperature upon the child's body.

Dr. Seibert then went on to say that the lowest temperature of each day was reached during the night; and it was at this time that the milk which furnished the principal food of so many young children was brought into the city. It was often carried long distances, being much jolted about, and absorbing impurities from the time it left the cow. It was, therefore, only a question how far the decomposition of the milk had advanced by the time it reached the child. It was well known that a low temperature retarded decomposition, and Dr. Cyrus Edson, of the New York Health Department, had informed him that in his experience he had found that milk usually began to turn whenever its temperature reached 60° or higher. Chief Engineer Birdsall, of the Department of Public Works, had also informed him that whenever the temperature of Croton Lake rose to 60° or above, there was a peculiar taste about the water, which he attributed to the decomposition of certain matters contained within it.

As to the point why there are always so many more cases and deaths in July than in August, the difference usually amounting to at least one-third, it seemed to him that it might perhaps be explained by the fact that it took a few weeks after the onset of warm weather to fully arouse the tenement-house

population of the city to the danger to which their children were exposed from this disease, and to the necessity of taking suitable precautions as regards diet, fresh air, sanitary conditions, etc., for its prevention.

DISCUSSION.

DR. L. EMMETT HOLT quoted some statistics published by a writer in Liverpool, which covered the five years ending with 1883 in that city. In one of these years the mortality amounted to 347 in July and 969 in August. The average temperature of July was 58.9, and of August 59.2; and this would seem to corroborate Dr. Seibert's statement concerning the increase of the disease when the temperature reached the neighborhood of 60°. In September, however, when the average temperature was only 55.9, there were 559 deaths; which, while much less than the mortality of August, was yet considerably greater than that of July. Still he thought that this might perhaps be explained by the fact, which he himself had noticed repeatedly, that a very hot August was apt to be followed by a high mortality in September, irrespective of the degree of heat in the latter month. Very much the same ratio as regards the different months was observed during the other years covered by the Liverpool statistics.

Dr. Holt then went on to say that in summer there were different forms of diarrhoeal disease in growing children, and that he thought it was advisable that some distinction should be made between them. In the production of what is ordinarily known as "summer complaint," he believed that there were four principal factors concerned; namely, (1) heat; (2) feeding; (3) sanitary conditions; and (4) constitution; and that the most important of these features was heat.

DR. J. LEWIS SMITH said that he quite agreed with Dr. Holt in regard to the importance of distinguishing between the different forms of disease met with. He had seen cases in the warmest weather in which an aggravation of the symptoms resulted from reduction of temperature. The child took cold, and the disease was then apt to assume a dysenteric tendency. He thought there was perhaps a fallacy in comparing summer diarrhoea with the diarrhoea met with in cold weather, as he believed the latter to be an entirely different affection from the former. In the cooler months the causes of the trouble were usually so different that it was unjust to classify the two diseases together, although the lesions might be the same. The difference between the two was as great as that between the bronchitis incident to pertussis, or measles, and idiopathic bronchitis.

It seemed to him also that one might be misled by the number of deaths reported. Thus, many of the deaths occurring in August or September might be in children who had contracted the disease in the earlier part of the summer. The mortality, as a rule, was somewhat greater in September than in May, although the temperature was usually higher in the latter month than in the former; and the reason was because many of those dying in September had been taken ill in one of the previous months. He had noticed in his own statistics the difference between the mortality in August and that in September.

It could be stated in a general way, he thought, that the disease known as summer complaint is caused by heat; but in what way the heat operated to pro-

duce it was not as yet fully ascertained. It was evident that heat alone was not sufficient for its production, or else the disease would be found prevalent in the country as well as in the city. It must be a fact, therefore, that there were certain causes which were brought into operation by the insanitary conditions met with in the city in hot weather. How much gaseous exhalations had to do with the causation was not determined. At all events the opinion was gaining ground among the best observers that summer diarrhoea is a microbic disease. It was well known that milk which had begun to decompose had a tendency to give rise to the affection. In Asiatic cholera the causative agency of Koch's bacillus had been pretty generally accepted, and it was believed that this microbe was received into the mouth and acted as a source of irritation to the intestines by its actual presence, and not by causing decomposition of food. In like manner it did not seem unreasonable to suppose that micro-organisms might act in the same way in some cases of summer diarrhoea.

DR. A. CAILLE said that the investigation of Dr. Seibert had not only confirmed the general opinion that warm weather was an important factor in the causation of summer diarrhoea, but had also brought out a number of interesting new facts. In his opinion decomposing milk was the chief exciting cause of the trouble. While Dr. Seibert was on the whole no doubt right, it was his opinion that high temperature sometimes does have a pernicious effect upon the human body, and this serves to pave the way for some agency which will give rise to diarrhoeal trouble. It was a fact that children nursed at the breast or brought up upon some of the numerous infants' foods in the market, who never get cows' milk, will sometimes be attacked with serious gastro-intestinal disease if allowed to overload their stomachs in hot weather, while they will suffer but little, if at all, under the same circumstances in cold weather.

Two French physiologists had made some experiments by exposing animals to a continual temperature of 104°, and the phenomena which they observed to result from the exposure were: (1) increase of nervous excitability; (2) nervous depression, and (3) convulsions, coma and death; death resulting more speedily in a moist high temperature than in a dry high temperature. The same results had been noticed to be produced in children when the weather was very hot. It was his opinion, therefore, that while high temperature did not directly produce diarrhoea, it did have a pernicious effect upon the system, and under these circumstances any irritating substance would be likely to give rise to diarrhoea.

As regards the smaller number of cases of summer complaint, as well as of deaths from the disease, in August than in July, he thought that perhaps one reason for this was that a much larger number of children left the city in August than in July, while those which remained had the advantage of the numerous fresh air excursions then provided for the poor.

The President, DR. A. JACOBI, said that there was a great difference in the cases observed. The larger number were of a simple catarrhal nature. In others, where the discharges were serous in character, there was a tendency to collapse. In such cases the lesions found in the intestines after death might be very slight, while several of the organs of the body might be found to be in an advanced stage of granular de-

generation. He believed that great heat would kill by its direct effect upon the nerves and upon the muscular system, including the tissue of the heart itself; the high temperature having the effect of coagulating the myosine of the muscles. Intense heat also had a certain influence on the surface of the body; causing an immense dilatation of the capillary bloodvessels. Insufficient nutrition, particularly of the brain, would result from this, and thus collapse would be brought about. These were the cases of true cholera-infantum, which generally terminated fatally, and which were liable to be met with in well-to-do families as well as among the very poor. The large majority of the cases met with, however, were of gastro-intestinal catarrh.

DR. JACOBI said he had been much interested in the fact demonstrated by Dr. Seibert's investigations that 60° was the turning-point for this disease, and it was especially noteworthy in this connection that Dr. Edson had expressed the opinion that milk began to decompose, and Chief Engineer Birdsall the opinion that water began to be affected by decomposition, also at 60°. In conclusion, he made some remarks in regard to the importance of proper feeding.

STATE CARE OF THE PAUPER INSANE.

At the same meeting DR. SAMUEL SEXTON presented a resolution endorsing the bill prepared by the State Charities Aid Association in regard to the care of the pauper insane in State hospitals, and recommending its enactment by the Legislature. In connection with it he submitted a circular recently issued by the Board of Managers of the State Charities Aid Association in which they urge the passage of the Act, and bring forward the following arguments in its support. Those members of the Association who are as familiar with the management of the State Asylum, as they are with that of county poor-houses, find themselves obliged to acknowledge, in accordance with universal testimony, that, notwithstanding the fact that the condition of the insane in the latter is much improved, as compared with what it was not many years ago, the care furnished the insane by the State is vastly superior to that furnished by the counties. They know, also, that the counties do not propose to give the same character of care to their pauper insane, as that given by a State hospital, with its staff of alienist physicians always in attendance, its schools for training nurses, its large force of attendants, its various organized systems for occupation, instruction and amusement. This is impossible of attainment for any county at a weekly cost *per capita* of \$1.50. The expense of new or improved county buildings, and of a larger number and higher grade of attendants, which an advanced and enlightened public opinion now demands for the care of the insane, these two conditions alone — irrespective of maintenance and medical treatment — will impose a heavier burden on the tax-payer of the county than the additional increase of his State tax required to perfect the system already established by the State.

In seconding Dr. Sexton's resolution, DR. C. R. AGNEW said that for thirty years he had been interested, with others, in the amelioration of the condition of the pauper insane in the State of New York, and that the first result of the agitation of this subject had been the establishment by the State, of the admirable Willard Asylum. Later, those at Binghamton

and Poughkeepsie had been started. The opening of these institutions had withdrawn a considerable portion of the pauper insane from the county poor-houses. Now, however, an effort was being made to establish local asylums for the insane in various counties. The chief reasons alleged for this movement were the saving to a considerable extent, of the cost of the transportation of insane patients and because it was claimed that the cost of maintenance in the State hospitals was unnecessarily great. One of the counties declared its willingness to undertake the care of its insane at a cost not to exceed 97 cents per head per week, and another for \$1.19. At the Willard Asylum, where the number of inmates was nearly two thousand, the expenses could not be reduced below \$2.25 per head per week; but this included the best scientific care by expert physicians and specially trained nurses, the amusement and intellectual training of the patients, and their employment in the workshop and on the farm connected with the institution. It was a fact also, that some of the counties had tried the experiment of having their own insane asylums, and unsuccessfully. Thus, Rockland County had erected one at an expenditure of \$20,000, and it had now been abandoned. If the pauper insane were cared for by the counties they would be under the charge of the supervisors and superintendents of the poor, and these men, besides knowing nothing about the proper care of the insane, were altogether too close to the tax-payers. This class of cases could, in fact, only be properly taken care of in an institution where there was a board of managers, which was directly responsible to the State, and where everything was done in the full blaze of public scrutiny; and in the State hospitals he believed that the most enlightened modern treatment of the insane was carried out in as thorough a manner as was at present attainable.

The resolution was then unanimously adopted.

Recent Literature.

Transactions of the American Surgical Association, Vol. V: By J. EWING MEARS, M.D., 1887. P. Blakiston, Son & Co., Philadelphia. pp. 386. Illustrated.

The above report, with the exception of the first few pages, on which appear a list of the officers and members of the association with the president's address, consists almost entirely of a reprint in full of the papers read before the association at its meeting held May 11, 12, 13, 14, 1887, with the ensuing discussion by the association. The recent numerous reports and criticisms in all the principal medical journals have so familiarized the profession with the character of these monographs as to render a detailed review superfluous. It is exceedingly gratifying to find the original articles thus reproduced in a form so convenient and readily accessible as in the neat volume containing this report, which will for many years furnish much valuable information to those surgeons interested in the important subjects thus so fully presented by their respective writers. Of especial interest at the present time are the articles entitled "Suprapubic Cystotomy," and "Gunshot wounds of the Abdomen," to which 218 of 377 pages are devoted.

The Principles of Theoretical Chemistry, with special reference to the Constitution of Chemical Compounds: By IRA REMSEN, Professor of Chemistry in the Johns Hopkins University. Third addition, enlarged and thoroughly revised. Philadelphia: Lea Brothers & Co. 1887.

The demand for a third edition of a work of this character is perhaps the best evidence of the favor with which Professor Remsen's book has been received. In the present edition, the chapter on valence has been almost entirely re-written and at the same time enlarged, chapters on chemical affinity, and the connection between constitution and chemical conduct have been added, and other additions have been made here and there throughout the book.

We can recommend this book as containing a reliable and connected account of the theories of chemistry which prevail at the present time.

Medical Lectures and Essays. By GEORGE JOHNSON, M.D., F.R.C.P., etc. London: J. & A. Churchill. 1887.

This octavo volume of nine hundred pages is for the most part a reprint of papers, which have been published in various forms and at different times during the last thirty years or more, with the advantage of careful revision. In their present form, therefore, these papers are endorsed by the author as his latest and most matured opinions upon the subjects of which they treat.

The latest work of the emeritus professor of clinical medicine at King's College, London, in regard to the physiology of the circulation, the influence of the contractile power of the muscular-walled arterioles upon the circulation and its relation to renal and cardiac disease,—a subject with which his name is identified,—will be read with careful attention. The physiological functions of the arterioles is dwelt upon in several chapters of the present volume.

The book consists of fifty chapters upon an almost equal number of subjects in Clinical Medicine, but the question of "Bright's Disease" alone takes up one hundred and fifty pages, and here the author's well-known views are developed at length.

Practical Urine Testing: A guide to office and bedside urine analysis. By CHARLES GODWIN JENNINGS, M.D., Professor of Chemistry and of Diseases of Children, Detroit College of Medicine, etc. Detroit: D. O. Haynes & Co. 1887.

The object of this book is explained by the following statements of the author:

"It is the aim of this little volume to give concise directions for office and bedside testing. Particular attention has been given to the qualitative and quantitative tests, which from their cleanliness and ease of application, and the simplicity of apparatus required, commend themselves to the practising physician."

A number of books of similar character have been published. One or two of these are excellent, and we do not believe there is any real necessity for another at the present time. However, the book which Dr. Jennings has added to the list is a very good one, and we can recommend it to those desirous of such a work, as one likely to meet their requirements. Most of the new urine tests that have proved to be of value may be found in this volume.

W. B. H.

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THE DETTWEILER METHOD OF TREATING
PULMONARY CONSUMPTION.

DR. PAUL H. KRETZSCHMAR has published in the *New York Medical Journal* an appeal for the establishment in this country of an institution (or institutions) for the rational treatment of pulmonary consumption after the model of Dr. P. Dettweiler's sanitarium at Falkenstein.

From the paper referred to¹ we ascertain the following particulars respecting the Dettweiler method of treatment:

The sanitarium in Falkenstein was founded in 1874 by a stock company, the shareholders not to receive more than five per cent. dividend on their investment, the surplus income to be used for the improvement of the institution. It is situated on the northern slope of the Tannas Mountains, about fourteen hundred feet above the sea-level near Cronberg, and two hours' ride from Frankfort. It consists of three large buildings, together with gas-works, cow-stables, laundry, etc. The largest of the buildings presents the form of a horse-shoe, to protect the inhabitants from the rather heavy north winds which prevail there occasionally, and contains eighty rooms, with over one hundred beds, and the post and telegraphic offices, parlors, reading rooms, billiard room, offices, examination room, and the douche in the basement. The next building, connected with the others by an arcade, contains the large, high, and well-ventilated dining-room, which seats about two hundred people comfortably, the kitchen being outside of the building. The third building contains the residences of the medical superintendent and his associates.

The climate of Falkenstein is not alleged to have any specific influence on the diseased organs; it does not differ in any essential respect from that of Southern Germany in general, except that during July and August the temperature is quite high. The air is comparatively free from dust and other impurities. Well-cultivated pine and oak forests are in the immediate

neighborhood, with numerous attractive walks scattered through them, and with plenty of seats and places for rest. One of the points which Dettweiler considers as of the greatest importance in obtaining favorable results is the treatment of phthisical patients within institutions where they are constantly under the personal supervision of the attending physician. The medical profession of Germany approve of this view, and the institutions established in Germany on this basis have already made a good showing. In Goerbersdorf is the model sanitarium of Dr. H. Bremers, and two others have lately been established; even Falkenstein has a second one. Dr. Driver, of Reiboltsgrün, in Saxony, and Dr. Jacobasch, in the Hartz Mountains, are proclaiming good results in their respective places. In these institutions the smallest details of the patient's life are controlled by the supervising physician: the daily exercise in the open air, the use of lung gymnastics, the administration of stimulants, even the changing of garments, are matters not left to the judgment of the patients.

In connection with other phthisco-therapeutics, Dettweiler praises the invigorating influence of pure mountain air, and its great value as a remedial agent in the treatment of consumption, but to the patients boarding in his institution, he insists on the necessity of caution in outdoor exercise. New patients are not permitted to walk outside the immediate vicinity, or even remain outdoors a long time, until after the first careful examination, which is generally made by two physicians the day after arrival; the limit of outdoor exercise is then agreed upon; also the hours of rest in the open air, and the first instruction in lung gymnastics is given. Under ordinary conditions, the duration of outdoor living is increased daily, and the greatest importance is placed in "resting" in the open air. Over ninety *chaises-longues* — lounges made of rattan and upholstered with horse-hair — are placed over the verandas, the arcade, and the rotating pavilions, and the patients, after being acclimated, spend many hours daily, dressed properly, and covered with blankets, in accordance with the season, lying upon them. Dettweiler places great importance on this permanent air treatment, which is carried out even in cold weather, when snow and ice cover the surrounding ground. During the winter before last, which was an exceptionally cold one, a daily record was kept, and it was found that some of the convalescing and more energetic patients extended the so-called "*jour medical*" to ten and eleven hours; many of those that were advanced cases spent, at least, two or three hours on their rattan lounges. Only in exceptional cases — in highly anemic subjects and those suffering from continuous and decided fever, with frequent chills — is the permanent air treatment not indicated. Six hours is the average time spent on the lounges; many remain there till ten o'clock at night, passing the time reading or writing, playing dominoes or chess, the verandas and pavilions being well lighted after dark.

¹ *New York Medical Journal*, February 19, 1888.

Another feature of the treatment, supposed to strengthen the system and harden it against unfavorable external influences, is the systematic use of massage and the regular rubbing down of patients, early in the morning and before rising, by trained nurses, first by means of dry towels, afterwards with alcohol, and occasionally with salt water. The cold douche is added in most cases to other invigorating measures.

Much attention is paid to diet. Dettweiler considers anorexia, next to pyrexia, the most important factor in destroying the life of phthisical patients. All the delicacies of the season are provided, and much attention is paid to the individual wants of each case. As a rule, the patients take their meals together, one physician being always with them, and the time for meals is thus arranged: First breakfast, consisting of coffee, tea, chocolate, or milk, with cakes or rolls, and butter and honey, from 7 to 8.30 A. M. Second breakfast: bread and butter, with milk, always as much as desired, or bouillon and cold meat, at 10 o'clock A. M. Dinner, the principal meal, consisting of soup, fish, or broiled meat roast, with a variety of vegetables, salad and compote, and dessert, at 1 P. M. With the dinner, each patient drinks from one-third to half a bottle of Rhine or Hungarian wine and a cup of coffee. At 4 o'clock P. M., an additional lunch to those that require it of fresh milk, and a nice little room is arranged for this purpose in the cow-stable. Lastly, a warm supper is provided of soup, warm and cold dishes, of meat, etc., at 7 P. M., with a glass of wine. Instructions are given to eat slowly and chew well; milk, especially, must be taken only a swallow at a time. The food is well prepared and cooked rather rich, and the manner of cooking is often changed. Dr. Dettweiler himself directs the management of the kitchen. He says that few of the patients do not enjoy the meals at Falkenstein, and 86 per cent. of all patients gain an average of nine pounds each during a period of less than three months, while 14 per cent. do not increase in weight. The free use of alcohol is also a feature of Dettweiler's treatment. Dettweiler says that he would give one-half of the entire materia medica for this one remedy. The phthisical patient with a fair appetite and free from fever does not require more than three-fourths to one bottle of good Rhine wine a day; if, however, anæmia be a prominent symptom, with occasional chills, he orders the "brandy treatment": two teaspoonfuls of pure brandy, to be taken every hour or two from morning till night, amounting to eighty grammes a day, to be followed by a brandy milk-punch before retiring.

The laws of hygiene are strictly enforced at Falkenstein: the patients sleep with their windows open during the night, pure water is at hand, the greatest cleanliness prevails, the drainage is the best, and cuspidors are at hand filled with a solution of bichloride of mercury, to receive the expectoration of the patients. The average attendance during the last years has been 160 in the summer, and 120 in the

winter. The expenses, including wine, milk, douche, bath, and medical attendance, amount to not over twelve marks, or three dollars a day. Dr. Dettweiler has lately published a pamphlet relating to the permanent cure of seventy-two cases of pulmonary consumption by his "permanent air and rest treatment," with the administration of such a liberal and rich diet as to amount almost to over-feeding.

Dr. Kretzschmar, from whose interesting communication we have derived these particulars, pertinently asks: "Why should we not try the system in this country?" and calls for the establishment of sanatoria of the same kind in New York and New England.

The question naturally arises in this connection: Would such an institution in New England prove at once useful and self-supporting? It must be borne in mind that in this country consumption prevails largely among the poorer classes, few of whom could find three dollars a day for board and medical attendance.

THE FIRST CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

THE Executive Committee of the Congress of American Physicians and Surgeons has issued its preliminary programme for the first Congress, which it is proposed should be held in Washington on the evenings of September 18th, 19th, and 20th. All the special national societies and associations which have been approached on the subject have agreed to participate in the Congress, with the exception of the American Gynecological Society.

Surgeon John S. Billings, of Washington, has been chosen President of the Congress, and the various Presidents of the participating societies are *ex-officio* Vice-Presidents. Dr. William Pepper, of Philadelphia, is Chairman of the Executive Committee, and Dr. William H. Carmalt, of New Haven, is Secretary.

The daytime will be reserved for the usual work of the component organizations, whilst the evening hours only of the three days, it is proposed, shall be given to the exercises of the Congress as a body.

The subject assigned for the first evening, Tuesday, September 18th, is the important one of "Intestinal Obstruction," which will be considered in its medical and surgical relations; papers viewing it from these points of view respectively will be read by Dr. R. H. Fitz, of Boston, and Dr. Nicholas Senn, of Milwaukee, and a discussion will follow. The next evening, "Cerebral Localization in its Practical Relations" will be treated by Drs. Charles K. Mills, of Philadelphia, and Roswell Park, of Buffalo, and then discussed by the Congress. The third evening, Thursday, will be occupied by an address by the President, Dr. Billings, and by a subsequent general reception in the new United States Army Museum Building.

The occasion can hardly fail to prove one of much interest and improvement for those in attendance, who will probably include some distinguished members of the profession from the other side of the At-

lantic. The Congress means work, and no entertainments or distractions are provided for, other than the Reception above referred to at the end of the last day; in fact, for those who come with a serious purpose — and there will probably be no others — of attending the regular work of their special societies and of the Congress, there will be no time for other things.

We do not doubt that the impression made by this first Congress will be such as to establish the proposed triennial assemblages upon a firm and lasting basis.

ANNUAL REPORT OF THE TRUSTEES OF THE MASSACHUSETTS GENERAL HOSPITAL AND McLEAN ASYLUM.

The report of the trustees of the Massachusetts General Hospital for the year 1887, the seventy-fourth annual report, (which includes reports of the treasurer, of the resident physician of the Hospital, Dr. J. W. Pratt, and of the medical superintendent of the McLean Asylum for the Insane, Dr. Edward Cowles,) presents information upon the usual subjects.

Dr. Francis Minot resigned his position as visiting physician after twenty-eight years of valuable service. The office of aural surgeon was created, and Dr. J. Orne Green chosen its first incumbent.

The whole number of patients received at the Hospital in the course of the year has been 2,814 — 1,539 men, 1,083 women, and 192 children, of whom 36 were under two years of age. For the year 1886 it was 2,580 — 1,442 men, 948 women, and 190 children, 21 of whom were under the age of two. The average number of patients in the Hospital has been this year 185, of whom, on the average, 161 had free beds. Last year, the average number of patients was 173, with an average of 152 free beds. The Convalescent Home received 327 patients.

The number of surgical patients, as usual, considerably exceeded the number of medical. Of the former there were 1,674, and of the latter, 1,140. The number of patients received on account of accidents was 490. Of the total number of patients, 1,376 were American born, and 1,438 were foreign born. Fourteen per cent. of the free patients were female domestics; seventeen per cent. were laborers; thirteen per cent. were mechanics; and nine per cent. were minors.

The average time of paying patients was 2.90 weeks, and that of free patients 3.57 weeks. The proportion of deaths to the whole number of results was 8.78 per cent.

The total expenses for the Hospital were \$120,881.61 of which \$105,543.71 was on account of free patients and \$15,337.90 on account of paying patients. The average cost per week per capita in 1886 was \$12.50 and in 1887, \$12.56.

The receipts at the Convalescent Home exceeded the expenses \$809.39; the expenses at the Hospital exceeded the receipts \$18,772.11; the expenses at the McLean Asylum exceeded the receipts \$5,019.34; the net deficit for the year was \$22,982.09. It is

evident from these constantly recurring annual deficits, that the hospital must either secure increased funds for the support of free beds, accept fewer free patients or continue to encroach upon the principal of the general funds of the Hospital applicable to its yearly expenses.

The bequests and donations received during the year amounted to \$37,873, in comparison with \$70,403.71 received the preceding year.

At the McLean Asylum the whole number of cases within the year was 242 — representing 237 persons — of whom 78 were discharged within the year. The daily average number of patients was 160.24.

Of the seventy-four persons admitted during the year, thirty-nine were regarded as recent cases, and thirty-five as chronic, or incurable. Fifty-four persons, twenty-one men and thirty-three women, had never been in any hospital. Of the remaining twenty persons, fifteen, seven men and eight women, were admitted for the second time; three persons, two men and one woman, for the third time; one woman for the fourth time; and one man for the twenty-third time.

Thirty cases — representing twenty-nine persons, fourteen men and fifteen women — were admitted as voluntary patients upon their own written applications. Of these, seventeen were cases of melancholia, seven of mania, one of hysteria, and four of general paralysis. Of these twenty-nine persons, two were committed after entering the asylum as voluntary cases, and one was twice admitted as a voluntary case. The thirty voluntary cases admitted during the year furnished eight recoveries; and twenty-five such cases remaining from previous years furnished five other recoveries during this year, making a total of thirteen recoveries out of fifty-five cases, — the total number of this class under treatment during the year. Thus, the voluntary class has yielded a percentage of 36.66 on the admissions of 1887. Of this class admitted during the year, four other cases were discharged improved or much improved, and four not improved. Of these thirty cases admitted in 1887 there were remaining, at the end of the year, fourteen persons, seven men and seven women; and thirteen persons, six men and seven women, also remained from the admissions of previous years, so that the total remaining under the voluntary relation is twenty-seven persons, thirteen men and fourteen women. The number of persons admitted as voluntary patients under the present law is as follows: namely, 1881, 1; 1882, 11; 1883, 33; 1884, 49; 1885, 34; 1886, 29; 1887, 29, — a total of 186 persons in seven years.

Of the seventy-six persons discharged, including deaths, seven, three men and four women, were transferred to other hospitals in this State. Of the twenty-five persons discharged recovered, eighteen had never before been inmates of any hospital; and all of the remaining seven persons had been in this Asylum.

These seven persons had previously made thirty-five recoveries.

The average duration of illness from the beginning of attack in all cases recovered, was 10.34 months, and the average duration of their residence in the Asylum was 6.86 months.

The percentage of recoveries on all admissions, for the year 1887, was 34.7. There were ten less recoveries than in the previous year. There were seventeen deaths, three more than last year.

The introduction and development of a training school for nurses has continued to give satisfactory and gratifying results.

THE BEST METHOD FOR THE EXECUTION OF CRIMINALS.

At its last meeting, held March 8th, the Society of Medical Jurisprudence and State Medicine of New York discussed the best method of executing criminals. Dr. William A. Hammond, who opened and closed the discussion, advocated strangulation by a silk or cotton rope as the most satisfactory method at command. He criticised the recent report of the State Commission, which recommended the use of electricity, and said that the objections raised against the present method of execution would apply with equal force to any form of execution. Several of the members took exception to Dr. Hammond's statement that strangulation was painless, and Drs. Spitzka and Brill spoke in favor of the guillotine.

The Society finally adopted, by a nearly unanimous vote, a resolution condemning the bill now before the Legislature, which embodies the recommendations of the State Commission referred to.

MEDICAL NOTES.

BOSTON AND NEW ENGLAND.

— A large number of members of the City Government visited the Boston City Hospital in an official capacity last week.

— Dr. Alexander Fulton, an aged and popular physician of Ellsworth, Me., died recently.

— Ellen Murphy, sixteen years old, living at No. 16 Berlin St., Roxbury, availed herself of the short and easy means to suicide provided (we had almost said — it is, at least, permitted) by the State laws, and took a dose of "Rough on Rats" at 1.15 o'clock one morning last week. She was removed to the City Hospital, where she died at six o'clock.

— Dr. C. A. Lovejoy, Superintendent of the Lynn City Hospital, reports the number of patients admitted during the year at 260; in the Hospital December 1, 1886, 11; total number treated, 271. Of the 255 discharged, 163 were well, 52 relieved, 11 not relieved, and 29 died; expenses, \$8,639, an average of \$40 per annum, or \$3.56 week for each patient. The average cost for each admission to the Hospital has been \$32.18. While the number of patients the

past year has materially increased, the accounts show that the expenses have been considerably less. For instance, the item for household expenses has been reduced from \$4,131, with an average of sixteen patients, to \$3,602, with an average of nineteen patients, or from a cost for fuel, light, and provisions of \$258 per head in 1886, to \$189 per head the past year.

NEW YORK.

— The forty-seventh annual commencement of the Medical Department of the University of the City of New York was held at the Metropolitan Opera House, March 7th, when the chancellor of the university, the Rev. Dr. John Hall, conferred the degree of M. D. upon one hundred and sixty-four candidates. The usual prizes were awarded, and the address to the graduating class was made by the Rev. William M. Taylor, D. D.

— The annual commencement of the Long Island College Hospital was held at the Brooklyn Academy of Music, March 9th, when the address to the graduates, who were thirty-six in number, was made by the Rev. Dr. T. deWitt Talmage.

— President Baylies, of the Board of Health, has just received the diploma awarded to the department for Designs for Sanitary Works by the International Health Exhibition, which was held in London in 1884. It is signed by the Prince of Wales, as president of the exhibition, and the Duke of Buckingham, as chairman of the executive committee.

— At the unveiling of the tablet in memory of Prof. Austin Flint, erected in the Carnegie Laboratory by the Alumni Association of Bellevue Hospital Medical College, which took place on the evening of March 10th, Dr. David Webster, President of the Association, presided, and opened the exercises, after which a eulogy of Dr. Flint was delivered by Dr. Leroy M. Yale. The tablet, which was accepted by the president of the College, Dr. Isaac E. Taylor, in behalf of the faculty and trustees, was executed by Alexander Doyle, of New York, and presents an excellent likeness of Dr. Flint in bronze.

— Dr. T. R. S. Drake, Professor of Clinical Medicine in the New York University Medical School, died, after a brief illness, on March 9th, in the forty-third year of his age. He was a native of Connecticut, and a graduate of Yale College. He studied medicine at the college where he afterwards became professor, and after receiving his degree served on the house-staff of Charity Hospital, Blackwells Island. On entering private practice he became the junior partner of Dr. Alfred L. Loomis, and during his association with the latter became attending physician first to Charity Hospital, and subsequently to Bellevue. He was distinguished for his skill as a diagnostician and the aptness which he showed as a clinical lecturer, while he greatly endeared himself to the students under his instruction. He was for a number of years president of the Alumni Association of the University Medical School, and recently was

vice-president of the Medical Society of the County of New York. In both the County and State Medical Societies, as well as the Pathological Society, he took a deep interest, and he was always very active in securing desired medical legislation at Albany. Generous to a fault, devoted to his friends, and with a warmly sympathetic and genial nature, he was beloved and esteemed by his patients and a wide social circle, and his untimely death is a most deplorable loss. Dr. Drake leaves a widow and two young children.

PHILADELPHIA.

— At the last meeting of the College of Physicians Dr. John Ashhurst, Jr., presented a patient about twenty years of age, upon whom he had successfully performed a synchronous triple amputation. As a result of being run over by a train on the railroad, the man had suffered the following injuries: crush of the right leg, which was lacerated above the knee; avulsion of the leg at lower third; crush of right hand and wrist; scalp lacerations, and compound fracture of the skull in frontal region, impacted; with laceration, followed by deep sloughing on buttock. He was immediately brought into the hospital of the University of Pennsylvania, which was near the scene of the accident, when his general condition was found to be very good; temperature, 99°. On the same day, November 28, 1887, primary synchronous amputation was performed of the three injured members: the right thigh by anterior and posterior flaps, using Es-march tubes to prevent hemorrhage; the left leg was amputated by a modification of Sédillot's method; and the right forearm was removed at the lower third. No irrigation was used. Antiseptic dressings were applied. The fracture of the skull and scalp laceration were treated as usual. At the conclusion of the operation the patient's temperature was 98°. The reporter particularly insisted upon the danger of allowing the patient's temperature to be lowered by exposure of the body during operation, and for this reason deprecated the use of wet towels and irrigation as ordinarily used in antiseptic surgery, and which often turn the scale against the patient. The man made a rapid recovery without any unfavorable symptoms. This is the only case on record of successful triple synchronous major amputation. He reported a second case in a man twenty-one years of age, in which both legs and the right forearm had been amputated for similar injury, but which had proved fatal on the tenth day, death being due to alcoholism. Out of fifteen double synchronous amputations he reported five recoveries, with ten deaths. Of two triple synchronous amputations the one presented alone recovered.

— At the same meeting Dr. John B. Chapin read a paper entitled, "Report of Cases of Traumatic Tubercular and Syphilitic Insanity." Dr. H. C. Wood took exception to the term syphilitic insanity, since the insanity is due to lesions which may or may not be due to syphilis. He also doubted the propriety of

the use of melancholia as a term indicating a morbid state. He claimed that it was only a symptom, and was no more correct to call it a disease than a similar application of "d Dropsy" would be. Dr. Woodbury cited "morbid fear" as a condition accepted by alienists as indicating mental unsoundness, yet no gross lesions may exist to account for it; and cited syphilophobia" as a form of mental disturbance which may become so severe as to lead to insanity and suicide. If a group is to be made of syphilitic insanity, possibly some such cases might find place therein.

— The Second Sanitary Convention, to be held under the auspices of the State Board of Health, has been postponed from May 8th and 9th to May 17th and 18th, as the earlier date was found to conflict with the time for the meeting of the American Medical Association. The convention will be held in Lewisburg, a pretty university town, five hours distant by rail from Philadelphia. Prominent sanitarians will be invited from all parts of the country, and attention will be directed to the good work done by our State Board of Health, in the hope that the legislature will appropriate sufficient funds to enable it to largely extend its usefulness.

— Dr. M. B. Musser, in early middle-life, died rather suddenly of Bright's disease, a few days ago. He was one of the obstetricians to the Philadelphia Hospital, and probably the most prominent and successful physician in the western part of the city, and was universally loved and respected. He was a member of many medical societies.

— Dr. O. H. Allis has commenced a course of free lectures to the profession on the Mütter foundation, at the College of Physicians, on the "Articulations." This is a subject to which the lecturer has devoted much study, and the results of his many years' observations and experience as a surgeon promise to make this course unusually interesting and valuable.

Correspondence.

COMMITTEE ON ETHICS AND DISCIPLINE OF THE MASSACHUSETTS MEDICAL SOCIETY AND THE MURDOCK LIQUID FOOD HOSPITAL.

Boston, March 12, 1888.

MR. EDITOR,—Owing to correspondence published in the JOURNAL of the 1st inst., the Committee on Ethics and Discipline desire to make the following statement:

Shortly before the Councilor's meeting in October, 1886, Dr. E. W. Cushing called upon three members of the Committee separately, and asked for a formal opinion as to the propriety of his accepting the position of surgeon to the Murdock Liquid Food Hospital. Each member declined to express an official opinion, but each stated his views. October 8, 1886, Dr. Cushing addressed a letter to the Chairman of the Committee stating his relations to the Hospital, but he did not request action by the Committee.

The Committee had never been asked to consider the subject, and they desire to say that if asked, they could not have done so without exceeding the powers delegated to them.

Very respectfully,
FRANCIS W. GOSS, M.D., Secretary.

PRELIMINARY PROGRAMME, THIRD ANNUAL MEETING OF ASSOCIATION OF AMERICAN PHYSICIANS.

The following is the preliminary programme of the Third Annual Meeting of the Association of American Physicians, to be held in Washington, D. C., on the mornings and afternoons of September 18, 19 and 20, 1888. The meeting will be held this year in September, instead of June as hitherto, on account of the assembling at that time of the first Congress of American Physicians and Surgeons.

President's Inaugural Address, William H. Draper, New York.
Discussions. The Relation between Trophic Lesions and Diseases of the Nervous System: *Referee*, Edward C. Seguin, New York; *Co-Referee*, William T. Councilman, Baltimore. The Absolute and Relative Value of the Presence of Albumen and Casts, and of Renal Inadequacy, in the Diagnosis and Prognosis of Diseases of the Kidney: *Referee*, Robert T. Edes, Washington; *Co-Referee*, Edward G. Janeway, New York.

Papers. The Cardiac Changes in Chronic Bright's Disease, Alfred L. Loomis, New York; The Relation between Chronic Interstitial Nephritis and Angina Pectoris, Samuel C. Chew, Baltimore; Diarrhoeas of the Heart-Rhythm, with Reference to their Causation and their Value in Diagnosis, Gustavus Baugarten, St. Louis; Fatty Heart, Frederick Forchheimer, Cincinnati; The Cardiac Lesions producing the Presystolic Murmur, Frank Donaldson, Baltimore; The Treatment of Val-

vular Affections of the Heart, Jacob M. DaCosta, Philadelphia; Clinical Investigation in the Treatment of Cardiac Disease, James K. Thacher, New Haven; Casual Therapeutics in the Infectious Diseases, James C. Wilson, Philadelphia; Management of the Stage of Convalescence in Typhoid Fever, James H. Hutchinson, Philadelphia; The Geographical Differences in Typhoid Fever in the United States, W. W. Johnston, Washington; The Pathology of the Thyroid Gland, Abraham Jacobi, New York; Gastric Neurasthenia, George M. Garland, Boston; Neuritis, Francis T. Miles, Baltimore; The New Casarean Section, William T. Lusk, New York; Is Hysterio-Epilepsy Better Treated by Medical or Surgical Means? William L. Polk, New York; Subject not yet announced, Samuel C. Eusey, Washington; Subject not yet announced, George Ross, Montreal.

Demonstration in Pathological Anatomy: T. Mitchell Prudden, New York; William H. Welch, Baltimore.

APPOINTMENT.

Members of the family of the late Dr. Samuel Cabot have offered the Massachusetts General Hospital a fund of \$10,000 to be known as The Samuel Cabot Fund, the income to be used as a salary for the Pathologist. The offer has been accepted by the trustees, and Dr. W. F. Whitney has been appointed under the provision with the title of Assistant Pathologist.

REPORTED MORTALITY FOR THE WEEK ENDING MARCH 3, 1888.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diarrhoeal Diseases.	Diph. & Croup.	Scarlet Fever.
New York	1,481,920	803	296	34.06	49.40	4.68	16.12	7.28
Philadelphia	993,801	408	119	11.18	15.08	.78	2.08	2.08
Brooklyn	715,108	—	—	—	—	—	—	—
Chicago	725,000	—	—	—	—	—	—	—
St. Louis	420,000	—	—	—	—	—	—	—
Baltimore	417,000	186	77	13.50	—	1.62	2.70	—
Boston	400,000	207	62	9.60	26.88	.48	4.80	.48
New Orleans	242,750	119	35	14.62	14.62	6.02	2.58	—
Buffalo	225,000	—	—	—	—	—	—	—
District of Columbia	210,000	102	39	14.70	13.72	1.96	—	—
Pittsburgh	210,000	73	27	13.90	25.41	2.78	4.17	—
Montreal	186,257	—	—	—	—	—	—	—
Milwaukee	170,000	74	37	10.80	16.20	—	1.35	2.70
Providence	121,000	—	—	—	—	—	—	—
Richmond	100,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,000	20	8	10.00	30.00	10.00	—	—
Charleston	60,145	19	9	—	5.26	—	—	—
Portland	40,000	4	0	—	25.00	—	—	—
Worcester	68,383	27	9	11.10	29.60	—	4.40	—
Lowell	64,051	33	13	18.18	6.06	—	3.03	—
Cambridge	59,660	22	8	9.10	4.55	—	4.55	—
Fall River	56,863	33	15	12.12	9.09	—	3.03	3.03
Lynn	45,861	—	—	—	—	—	—	—
Lawrence	38,825	17	—	23.50	—	—	5.88	5.88
Springfield	37,577	18	8	33.33	16.66	5.55	5.55	5.55
New Bedford	33,393	13	2	—	15.38	—	—	—
Somerville	29,992	11	5	18.18	—	—	9.09	—
Salem	28,084	11	4	—	33.33	—	—	—
Holyoke	27,834	21	7	14.28	23.80	—	4.76	—
Chelsea	25,709	13	3	30.76	23.07	—	23.07	—
Taunton	23,674	8	2	—	25.00	—	—	—
Haverhill	21,795	9	5	—	—	—	—	—
Gloucester	21,713	9	3	—	—	—	—	—
Brockton	20,783	6	3	16.66	—	—	16.66	—
Newton	19,739	8	—	—	12.50	—	—	—
Malden	16,407	5	2	—	40.00	—	—	—
Fitchburg	15,375	4	2	—	25.00	—	—	—
Waltham	14,609	7	4	14.28	14.28	—	—	—
Newburyport	13,716	6	1	16.66	—	—	—	—
Northampton	12,896	—	—	—	—	—	—	—

Deaths reported 2,300; under five years of age 806; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 310, acute lung diseases 413, consumption 264, diphtheria and croup 105, scarlet fever 44, diarrhoeal diseases 40, typhoid fever 53, measles 26, cerebro-spinal meningitis 20, whooping-cough 16, puerperal fever 12, erysipelas 10, malarial fever three, small-pox one. From typhoid fever, Philadelphia 12, Boston four, New York, District of Columbia and Lowell three each, New Orleans and Pittsburgh two each, Baltimore, Lawrence, Springfield and Holyoke one each. From measles, Baltimore 13, District of Columbia eight, New York two, Philadelphia, Pittsburgh and Holyoke one each. From cerebro-spinal meningitis, New York six, Philadelphia, New Orleans, Milwaukee and

Lowell two each, Boston, Pittsburgh, Worcester, Fall River, Springfield and Somerville one each. From whooping-cough, Philadelphia five, New York four, Baltimore two, Boston, District of Columbia, Cambridge, Fall River and Lawrence one each. From puerperal fever, New York four and Milwaukee three each, Baltimore, Boston, District of Columbia, Pittsburgh, Chelsea and Waltham one each. From erysipelas, New York and Philadelphia four, Boston and Newburyport one each. From malarial fever New Orleans three. From small-pox, New York one.

In 20 cities and greater towns of Massachusetts with an estimated population of 1,029,813, the total death-rate for the week was 24.59 against 24.03 and 23.20 for the previous two weeks.

The meteorological record for the week ending March 3, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barometer.		Thermometer.		Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.			Rainfall.
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	
Saturday, Mar. 3, 1888.																		
Sunday, ... 26	29.66	41.0	52.0	36.0	91.0	57.0	64.0	71.0	W.	W.	W.	8	8	10	O.	F.	O.	1 .10
Monday, ... 27	29.82	27.0	37.0	21.0	77.0	43.0	59.0	60.0	W.	W.	N.W.	12	8	18	F.	O.	O.	0 0
Tuesday, ... 28	30.17	13.0	22.0	11.0	63.0	50.0	62.0	58.0	N.W.	W.	N.W.	14	24	8	C.	C.	F.	0 0
Wednesday, ... 29	30.30	20.0	28.0	8.0	64.0	36.0	67.0	62.0	N.W.	W.	N.W.	6	12	8	C.	C.	O.	0 0
Thursday, ... 1	30.33	29.0	37.0	10.0	64.0	43.0	70.0	59.0	N.	W.	N.	6	10	2	F.	O.	O.	2 T.
Friday, ... 2	30.21	28.0	34.0	16.0	89.0	66.0	72.0	76.0	N.	W.	N.	14	7	11	C.	O.	R.	2 T.
Saturday, ... 3	29.20	27.0	36.0	20.0	66.0	47.0	69.0	61.0	W.	W.	N.W.	4	24	24	C.	C.	C.	0 0
Mean, the Week.	30.057	26.4	35.0	17.0				63.7										5 .10

O., cloudy; C., clear; F., fair; O., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 3, 1888, TO MARCH 9, 1888.

FISHER, W. W., first lieutenant and assistant surgeon. Sick leave extended one month on surgeon's certificate of disability. S. O. 50, A. G. O., March 2, 1888.

SHILLOCK, PAUL, first lieutenant and assistant surgeon, recently appointed. Ordered for duty at Fort Assiniboine, Mont. S. O. 50, A. G. O., March 2, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING MARCH 10, 1888.

STONE, E. P., assistant surgeon. Detached from the Coast Survey Steamer "Bache," and to Hospital, New York, for treatment.

KRENEY, JAMES F., assistant surgeon. Commissioned March 1, 1888.

BRUSH, GEORGE R., surgeon. Ordered to the "Omaha" when "Pensacola" arrives at Aspinwall.

MEANS, VICTOR C. B., passed assistant surgeon. To the "Omaha" when "Pensacola" arrives at Aspinwall.

SOCIETY NOTICE.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT.—The Section for Obstetrics and Gynecology, will meet at 19 Boylston Place, on Wednesday, March 21st, at 7.45 o'clock. Dr. J. W. Farlow will report a "Case of Suppression of Urine for Thirteen Days, from Compression of Both Ureters," with specimen. The discussion will be opened by Drs. A. T. Cabot, R. H. Fitz, W. W. Gannett, and E. S. Wood.

J. W. FARLOW, M.D., *Chairman*.
GEORGE HAYEN, M.D., *Secretary*.

"The Pinckney."

RESIGNATION.

Dr. G. W. West has resigned his position as Surgeon to Outpatients at the Massachusetts General Hospital.

OBITUARY. DR. CHARLES B. WELLINGTON.

Dr. Charles B. Wellington died in Cambridge, Mass., (where he was born), February 17, 1888, aged twenty-eight years. He graduated at the Harvard Medical School in 1885. Not long afterward, at the opening of the New Cambridge Hospital, he was chosen the House Physician. After holding this office a year he resigned it, and became associated with his father, Dr. W. W. Wellington, in the general practice of his profession in Cambridgeport.

He was a young man of singular sweetness of character and unusual professional promise, as will be seen from the following well-merited tribute paid to his memory by the Trustees of the Cambridge Hospital, who at a recent meeting of their Board:

Voted, That the Trustees have learned with much sorrow of the death of Dr. Charles B. Wellington, the first House Physician of the Hospital; and they wish to place on record the high

esteem in which they held him. They bear witness to his fidelity in the new duties which were assigned to him in the organization and administration of the Hospital; to the constancy of his service; to the carefulness and ability of his professional work; and to the uniform courtesy and thoughtfulness and heartiness which marked his personal and official life.

His name will be cherished by all who have been associated with him; who have valued his friendship, and will tenderly preserve the memory of his generous and helpful life.

The Trustees desire to extend to the family of Dr. Wellington their profound sympathy at the removal of one whose character and spirit rendered him peculiarly endeared, and whose life held so much promise of usefulness and honor in the profession which was his heritage and choice.

BOOKS AND PAMPHLETS RECEIVED.

The Cure of Hernia. By Henry O. Marey, A.M., M.D., of Boston, Mass. Reprint. 1887.

The Passage of Air and Feces from the Urethra. By Harrison Cripps, F.R.C.S., Assistant Surgeon to St. Bartholomew's Hospital, London: J. & A. Churchill. 1888.

The Cartwright Lectures of the Alumni Association of the College of Physicians and Surgeons of New York, for 1888, will be delivered at the College by Prof. Wm. H. Welch, of Johns Hopkins University, on Thursday evenings, March 29th, April 5th and 12th, at 8.30 p.m. The subject will be the "General Pathology of Fever."

A Manual of Physiology: A Text-Book for Students of Medicine. By Gerald F. Yeo, M.D., Dublin, F.R.C.S., Professor of Physiology in King's College, and Third American from second English Edition. With 321 illustrations and a glossary. Philadelphia: P. Blakiston, Son & Co. 1888.

The Year-Book of Treatment for 1887; A Critical Review for Practitioners of Medicine and Surgery. Philadelphia: Lea Brothers & Co. 1888.

On the Use of the Vaginal Tampon in the Treatment of Certain Effects following Pelvic Inflammations. By Thomas Addis Emmet, M.D., Surgeon to the Woman's Hospital in the State of New York, N. Y. Reprint. 1888.

Diseases of the Skin: A Manual for Practitioners and Students. By W. Allen-Jamieson, M.D., F.R.C.P., Extra Physician for Diseases of the Skin, Edinburgh Royal Infirmary. With woodcut and eight colored illustrations. Edinburgh: Young J. Beutland; Philadelphia: J. B. Lippincott & Co. 1888.

Diseases of the Heart and Circulation in Infancy and Adolescence. By John M. Keating, M.D., Obstetrician to the Philadelphia Hospital, etc., and William A. Edwards, M.D., Instructor in Clinical Medicine, and Physician to the Medical Dispensary in the University of Pennsylvania. Illustrated with photographs and wood engravings. Philadelphia: P. Blakiston, Son & Co. 1888.

The Wills Eye Hospital, Philadelphia. Founded April 2, 1832. Report for the Year ending December 31, 1887.

1887. Tenth Annual Report of the Presbyterian Eye, Ear and Throat Charity Hospital, No. 1007 East Baltimore Street, Baltimore.

A Very Valuable Lesson for Those who Use Anæsthetics. By Julian J. Chisolm, M.D., Professor of Eye and Ear Diseases in the University of Maryland, and Surgeon-in-Charge of the Presbyterian Eye and Ear Charity Hospital of Baltimore City. 1888.

Original Articles.

CASES OF OPEN INCISION IN WRY NECK, CONTRACTED KNEE AND TALIPES VARUS.¹

BY E. H. BRADFORD, M.D.,
Visiting Surgeon, Boston City and Children's Hospitals.

OPEN INCISION IN WRY NECK.

THE ordinary method, as is well known, for operating in wry neck due to contraction of the sternal cleido-mastoid muscle is by subcutaneous tenotomy of the muscle. The advantage of the subcutaneous method may be stated to be as follows: the absence of scar; the lessened danger of suppuration. The disadvantages of tenotomy in this locality are: (1) the difficulty of dividing thoroughly all the fibres of the fasciæ; and (2) in case of imperfect division, it is difficult to thoroughly find the resistant point without incurring a danger with deeper incisions of dividing important vessels. The advantages of the open incisions are chiefly that the surgeon is thereby enabled to clearly view the resisting points. The disadvantages are those of scar and the danger of suppuration. The danger of suppuration can be entirely done away with by proper aseptic precautions. The danger of scar is very slight, provided there is no suppuration and a clean incision is made. Moreover, if the incision is made in the hollow above the clavicle, parallel to the clavicle, a linear scar will not be noticed. The great advantage of an open incision is the thoroughness of incision and the lessened time required for mechanical after-treatment. The two following cases will serve as illustrations:

CASE I. Boy, aged eleven, congenital, anterior torticollis; right sterno-mastoid prominent; slight lateral curvature of spine, with bony distortion of vertebrae. An open incision was made one inch and a half above the clavicle, reaching from the outer border of the clavicular insertion of the muscle to the inner border of the sternal insertion. Incision was made down to the platysma muscle, which was divided on a director. The outer fascia of the neck was divided also, and the belly of the muscle thoroughly divided on a director—first the clavicular, then the sternal branch. After thorough division, the finger was inserted into the wound and some contraction felt of the fascia beneath the muscle. This was easily seen by opening the wound by means of retractors and divided without difficulty. The skin was then sewn up with catgut, leaving catgut drainage, and septic dressing applied, operation having been done with antiseptic and aseptic precautions. The head was kept in the corrected position and the boy kept in bed for a week, after which the dressings were removed and the wound found entirely healed. No mechanical after-treatment was applied. Boy was seen six months later. There has been no re-contraction, the wry neck was almost entirely corrected, a slight distortion remaining, due to the twist in the spine and the osseous change in the vertebrae.

CASE II. Girl, fourteen years of age. Similar distortion of the right side. The right sterno-mastoid divided in the same way, healing up equally readily. A wire collar was applied, and is worn now by the patient, three months after operation, to correct, if possible, the slight distortion of the head secondary

to the twist in the spine, in the hope that this may diminish on the growth of the patient. In this, as in the preceding case, there was no contraction of the sternal cleido-mastoid muscle, the left. The scar in both these cases is hardly noticeable.

OPEN INCISION IN SPASTIC CONTRACTION OF THE KNEE-JOINT.

In cases of spastic paralysis or Little's disease, it has been shown by Rupprecht and others that a thorough and permanent cure of the contraction of the gastrocnemius muscle is possible by division of the tendo Achillis. It may be inferred, therefore, that perfect and thorough division of the ham-string muscles would also be beneficial in such cases, with contraction of the ham-string muscles causing a contraction at the knee. A thorough division of the ham-strings is, of course, possible by subcutaneous tenotomy, but a thorough subcutaneous division of the ham-string muscle is not always easy, and in the following case an open incision was done in the hopes of thorough correction.

CASE I. Boy eleven, with spastic paralysis of both legs. Walks about with both knees bent. Tenotomy had previously been performed on both tendons Achillis, thoroughly correcting the equinus, but no attempt had been made to correct the contraction at the knee-joint. With proper antiseptic precautions, the skin in the popliteal space was divided by a V-shaped incision, the apex pointing downwards, and the ends reaching beyond the hamstring tendons. The skin was dissected back, and the fibres of the fasciæ divided by cross incisions as the limb was carefully straightened, the tendons of the ham-string being divided in the same way. After thorough division of all the fasciæ and tendons the limb was straightened and the skin sewed together. A straight splint applied outside of aseptic dressings. The wound healed readily, and two weeks later the operation was repeated upon the other limb, which also did well. The patient was seen six months later, and there was no return of the deformity, but the patient's attitude was not materially improved, for the reason that there was found to be a spastic condition of the psoas and iliacus muscle, which, when the lower limb was straightened threw the trunk forward, making locomotion ungainly.

OPEN INCISION IN CLUB-FOOT.

Open incision in club-foot has been recommended by some surgeons, but in ordinary cases, when operative interference is necessary, a division of the skin is unnecessary. Tenotomy and division of the ligaments answer every purpose if followed by proper mechanical treatment.

In certain cases, however, of resistant club-foot the foot cannot be thoroughly corrected ordinary even by operative measures, after forcible mechanical correction following tenotomy, with complete division of the ligaments as has been advocated by Shattuck and Parker. In these resistant cases, marked distortion of the neck and head of the astragalus delays cure, and after thorough correction, the front of the foot readily slips back, so that the scaphoid should articulate with the distorted facet of the astragalus. In such cases open incision (which is simply a more extensive tenotomy) will not be thoroughly adequate. Treatment in these cases

¹ Read at a meeting of the Surgical Section of the Suffolk District Medical Society, January 4, 1888.

has been the application of a retention appliance after correction, (involving the thorough stretching or division of the contracted ligaments, fasciæ and tendons), until such time as is required for the formation of a new facet in the astragalus. Other treatment has been excision of the tarsus or removal of the astragalus. The former method of treatment is successful in a very large number of difficult cases. The latter method is also successful, and is without great danger, but both involve necessarily a considerable mutilation of the foot, which is to be avoided if possible.

The following method was tried in the accompanying case; namely, An open incision on the inner side of the foot, with division of the ligaments between the scaphoid os calcis and astragalus, also of the plantar fasciæ and a linear osteotomy of the neck of the astragalus. It is manifest that where the astragalus is distorted at its neck, if it is possible that the neck be so twisted that the facet should come facing forwards instead of sideways, that the danger of relapse to former deformity is diminished. McEwen and others have demonstrated the feasibility and utility of this method of correction in knock-knee, and also the freedom from risk. If the same method can be employed on the astragalus, it is evident that there is very slight subsequent distortion of the bone. It is manifest that beside osteotomy it is essential that all ligaments and tendons should be thoroughly divided. The dangers of suppuration are no greater than in excision of the tarsus and can be disregarded in severe cases where thorough asepticism is carried out.

CASE I. Boy aged seven, with congenital talipes varus of the right foot. After the usual precautions, an incision was made from a little way below the internal malleolus downwards and forwards, directly down to the bone, and extending to the head of the metacarpal bone of the great toe. The wound was held open by means of retractors, and using a long narrow knife the plantar fascia was thoroughly divided. The astragalo scaphoid, ligament and the fascia containing the insertion of the tibialis anticus and posticus were divided by direct incision. The scaphoid was found almost touching the top of the inner malleolus. On stretching the foot outwards the head of the astragalus could in part be seen. An osteotomy was inserted and driven three-quarters through the neck of the astragalus transversely to its normal axis. The foot was then twisted outwards and a cracking sensation felt as the remainder of the astragalus was broken similar to that felt in MacEwen's operation for knock-knee. Tenotomy of the tendo Achillis was then done, the incision sewed up, the foot dressed with aseptic dressings, and held in an over-corrected position by means of a fixed bandage (plaster-of-Paris) applied over the whole dressing, the foot being held until the plaster was hard. This was removed in a fortnight, and the wound was found healed without having caused any constitutional disturbance. A Taylor's retention appliance was then used, although there was no tendency toward recurrence of the varus deformity. The boy was seen four months later, and there had not only been no return of the deformity, but it was found that there was a slight valgus of the foot, resulting from the over-correction.

It would be incorrect to infer that such an operative interference as the above is indicated in many, even of the severer cases of club-foot, as in by far the

larger number permanent cure can be accomplished by less radical means. The measures mentioned may, however, be advisable in the severer forms with much osseous deformity when a prolonged treatment is impracticable or where such treatment has not been successful.

The need of thorough asepticism is, of course, manifest, for although the articulations of the joint are not opened, yet prompt healing without suppuration is essential to a perfect and speedy cure.

Two difficulties in the procedure may be mentioned: (1) The difficulty of a proper insertion of the osteotome in the neck of the astragalus. (2) The difficulty of keeping the incision by the osteotome in the proper line nearly transverse to the axis of the corrected foot.

A dissection and performance of this procedure on a cadaver will demonstrate the fact that the main artery and the articulations of the foot can be avoided.

THE VALUE OF SO-CALLED DIABETIC FOODS.¹

BY CHARLES HARRINGTON, M.D.,
Instructor in Hygiene and Assistant in Chemistry in the Harvard Medical School.

It is not my intention to attempt in any way to discuss the etiology or pathology of diabetes mellitus, a disease little understood even by those of large clinical experience, but to confine myself strictly to a consideration of certain foods, which are recommended as valuable in the diabetic dietary. It is, I believe, undisputed, that a most important point in the treatment of the disease is the more or less complete elimination of sugar and starch from the diet, and it is a natural corollary that the ingestion of these substances except in very small amounts, is often equivalent to the administration of a poison. This deprivation is borne with great difficulty by the average patient, and consequently substitutes for the carbo-hydrates have been sought for, to satisfy the intense craving for the forbidden articles of food.

Glycerine and the newly-discovered saccharin are said to satisfy in a measure the longing for sweets, but a perfectly satisfactory harmless substitute for starch has been more difficult of attainment. Various diabetic flours and biscuits have been prepared, and are widely advertised as being non-starchy, and as giving complete satisfaction to the patient. Having examined occasional specimens of biscuits and bread made from these flours brought me by physicians, and having never obtained any very satisfactory evidence of their value, I determined to secure as many different diabetic foods as possible, make analyses of them, and report the results, good or bad, to the profession. I have succeeded in obtaining eleven different kinds of flour and biscuit, advertised or recommended as substitutes for starchy foods; have examined them, and have now the honor to report the results to the Society. The foods, the claims that are made for them, and the results of examination, are as follows:

(1) Gluten Flour: Farwell & Rhines, Watertown, N. Y. This and the next-mentioned are quite extensively advertised as particularly adapted to the dietary of diabetics and dyspeptics. The circulars describe it as "substantially free from starch which is like poison

¹ Read at the Boston Society for Medical Improvement, February 27, 1888.

to the diabetic, and produces acidity, flatulence, and indigestion in dyspeptics." "It is as nearly free from starch as practicable to make a flour suited to general daily use." "The majority of diabetics find it just what they need." Examination shows moisture (at 100° C) = 8.69%, starch = 67.17%, which will produce sugar = 74.63%. A bread of this flour with the usual amount of moisture would contain over 30% of starch, or the equivalent of 35% of sugar.

(2) Special Diabetic Foods: Farwell & Rhines, Watertown, New York. This, according to the circular "is a flour for extreme cases of diabetes, a more crude gluten, pronounced by the highest authority to contain much less starch than the gluten imported from Paris at great cost." "As a diabetic flour it defies competition in this country or Europe." "Beware of hurtful imitations." The name of the "highest authority" is not given, nor is the amount of starch in the foreign gluten with which the comparison is made. Moisture = 8.10%, starch = 68.18%, which will produce sugar = 75.76%. Its bread would contain about 33% of starch, which will produce 40% of sugar.

(3) Health Flour. This brand was recommended very highly as a diabetic flour by a wholesaler, who claimed for it a great superiority over all others. It is not, I understand, very extensively advertised. Moisture = 8.03%, starch = 72.00%, which will produce sugar = 80.00%. Its bread would contain about 40% of starch, which would yield over 44% of sugar.

(4) Gluten Flour. New York Health Food Company. The company assert that "the foreign gluteins are found to contain a larger percentage of starch;" that "the gluteins offered by many millers, bakers and dealers, is simply ground bran and impure middlings, a sort of fine feed or offal of very small nutritive value aside from the liberal percentage of starch and the trifling proportion of gluten which it contains." It is further asserted that "the gluten manufactured by the Health Food Company is commended by the medical faculty as almost the only allowable and palatable bread food for the diabetic." Examination shows moisture = 9.30%, starch 66.18%, which will yield sugar = 73.53%. Its bread would contain about 35% of starch, which would produce about 38.5% of sugar.

(5) Gluten Wafers (plain). These were purchased at the agency of the same company and were guaranteed by the salesman to contain no starch, or at most, only the most accidental trace. The same guarantee was given for the Gluten Flour (No. 4), and for No. 6. Moisture = 8.10%, starch = 66.96%, which will yield sugar = 74.40%.

(6) Gluten Wafers (butter). These biscuits were represented as similar to No. 5, with the exception that they are made with butter, which proved to be the case. They are much more palatable than the plain biscuits. Moisture = 7.74%, butter not estimated, starch = 51.14%, which will yield sugar = 56.82%.

(7) Dr. Johnson's Educators. These biscuits are recommended very strongly by the seller, who assured me that they are absolutely free from starch. Moisture = 5.44%, starch = 71.43%, which will yield sugar = 79.37%.

(8) Boston Health Food Company's Diabetic Flour, No. 1. This flour and the next succeeding, (No. 9),

were sold as absolutely non-starchy, and in every way superior to all others for diabetics. Examination shows moisture = 8.13%, starch = 62.94%, which will yield sugar = 69.93%. Its bread would contain about 30% of starch, or the equivalent of 33.33% of sugar.

(9) Diabetic Flour, No. 2, (same company). Moisture = 7.66%, starch = 54.88%, which will produce sugar = 60.98%. Its bread would contain about 23% of starch, or the equivalent of 25.55% of sugar.

(10) Flour of Bran. This is sold as a pure bran flour devoid of starch and very valuable as a food. Examination shows it to be as nearly free from starch as possible, there being but a mere trace present. It seems to be a finely-ground washed bran. As to the claim that it is of value as a food, it may be said to be about as nutritious and palatable as exhausted sawdust.

(11) Carlsbad Wafers. These, I am informed by one of our prominent practitioners, are held in high favor by ladies of gouty diathesis, diabetics, and persons avoiding sugar on account of increasing portliness, by reason of a popular idea that they are made of white of egg and glycerine, to the latter of which ingredients they are supposed to owe their sweet taste. I very much doubt that a wafer of this degree of dryness could be made of these two substances, and I do not know that the manufacturers claim that they are so made, or that they are free from carbo-hydrates. However that may be, it is very easy to demonstrate that sugar enters very largely into their composition. They are made in three thin layers, the middle one consisting wholly of white sugar.

For purposes of comparison I have made three additional examinations of bread foods of acknowledged richness in starch, in order to determine whether it would not be as well, or better, in case a bread or biscuit must be given to satisfy the craving for starch, to allow a small amount of palatable ordinary bread or biscuit daily, rather than the more or less unpalatable and fraudulent substitutes.

As a fair example of palatable crackers, I chose Graham Wafers; the other bread foods were ordinary home-made white bread, and corn-cake made with "white meal." Graham Wafer, moisture = 3.94%, starch = 58.45%, (sugar = 64.94%).

Compared with the diabetic biscuits above mentioned, the Graham Wafer may be almost regarded as a superior form of diabetic food. It contains a smaller percentage of starch than the Educator with its 71.43% and the Gluten Wafer (plain) with its 66.96%, and but little more than the Gluten Wafer (butter) with its 51.14%. It is in addition a remarkably palatable food, while the other three are anything but pleasant to the taste, according to my own view and that of others who have tried them at my request. Moreover, the Graham Wafer is honest, while the others are fraudulent. Home-made Bread, moisture = 37.25%, starch = 44.99%, sugar = 49.55%. Corn Cake (white meal), moisture = 44.62%, starch = 38.04%, sugar = 42.37%.

In making my estimates of the amount of starch in breads made with the diabetic flours, I have supposed them to contain about the usual 40% (or thereabouts) of moisture. Comparing the estimated figures with the amounts of starch in the two ordinary breads, it is observed that the difference is but slightly in favor of the diabetic breads, whereas according to the claims

made by the manufacturers and retailers, the difference should be overwhelming. But the item of palatability is something to be considered, and the slight difference in the percentage of starch might well be waived in favor of the great difference in taste.

There is another and more serious side to this question of diabetical foods. That they are in the highest degree fraudulent has, I consider, been proved. They are in addition a positive danger, for the diabetic accepting as truth the assertions that they are non-starchy, takes into his system that which even the circulars of the manufacturers admit to be virtually a poison in its effect on the course of the disease, and thus innocently more than counteracts the benefit which he otherwise would derive from his medical adviser. In conclusion, I have to express the hope that every practitioner will do his utmost to discourage the use of these fraudulent and dangerous foods, and to drive them out of the market.

A CASE OF MACEWEN'S OPERATION FOR THE RADICAL CURE OF INGUINAL HERNIA IN A WOMAN SIXTY-THREE YEARS OF AGE.¹

BY G. H. MONKS, M.D.,
Surgeon to the Boston Dispensary; Surgeon to Out-Patients at the
Curry Hospital.

THE patient was admitted to the Carney Hospital on October 1, 1887, at a time when I was temporarily in charge of the surgical wards. She was small in stature, but well nourished and in remarkable good physical condition for one of her years. She could not remember that she had ever been sick in bed before.

She attributed the hernia from which she suffered to a fall about six years previously, shortly after which she experienced occasional "sickening pains" in the lower part of the abdomen, on the left side. The left labium became gradually enlarged, and there was pain in that region more or less constant, particularly severe during defecation. The patient had been advised to wear a truss, but she stated that with the use of one she had never been able to satisfactorily control the rupture. Eventually, the swelling became so large and troublesome that she was unable to get about. Being at this time in no condition to help herself, and becoming more and more a burden to her family and friends, she came to the Hospital, fully resolved to have anything done which offered a chance of cure.

An examination showed the existence of an inguinal hernia on the left side, of the size and shape of a large pear, the body occupying the left labium, and the neck extending to the external ring. The ring was so large that three fingers could be inserted without difficulty. The hernia was readily reducible.

Dr. A. T. Cabot saw the case in consultation, and, under the circumstances, advised operation. On October 12th, after the patient had been properly prepared, ether was given and the operation was carried out with thorough antiseptic precautions, Drs. Whitman and Monro kindly assisting.

The parts were shaved and rendered aseptic by washing with ether, and then with corrosive sublimate solution, with soap. A straight incision was made from the region of the ring to the lower extremity of the hernial protrusion, and this was deepened until

the sac was reached. The sac, which was unusually adherent, was then separated as carefully as possible from the adjacent tissues, partly by cutting and partly by tearing. The index finger introduced into the canal freed the neck of the sac.

It was then possible to separate with the finger-tip the peritoneum from the abdominal margins of the internal ring. The sac was now puckered up by a continuous suture of stout chromicized catgut, in the manner recommended by MacEwen, and the needle was pushed through the abdominal wall from behind forwards. On drawing upon this suture, the puckered sac was with the assistance of the finger made to occupy a position within the abdomen, where it considerably overlapped the margins of the inner ring. The suture, thus drawn tight, was made fast in the muscles of the abdomen. The walls of the canal were now drawn together with chromicized gut, so that the conjoined tendon and Poupart's ligament should be approximated as closely as possible. It was now evident that it would be impossible, on account of the size of the cavity left after removal of the sac, to sew up the wound in the ordinary way without leaving pockets. A large number of sutures of fine catgut were, therefore, buried, and the margins of the wound brought together with a continuous silk suture. No drainage was used. Iodoform was sprinkled on the wound, and flexible collodion, layer after layer, with strips of cotton. This was covered with a large pad of absorbent cotton kept in place by a firm T-bandage.

The patient rallied from the immediate effects of the operation, but the recovery was complicated by a failure of the wound to unite in that part superficial to the external ring. It is difficult to say whether this was due to some defect in the antiseptic precautions or to the age of the patient, which was certainly unfavorable for rapid repair. The deep sutures apparently held the walls of the inguinal canal in perfect apposition. The condition of the parts gradually improved by the free use of antiseptic solutions, and the wound slowly healed by granulation. The patient now sits up a few hours each day.

There has never been any sign of a recurrence, though no bandage or pad of any kind has been used since the first few days succeeding the operation.

I report this case as interesting on account of the age of the patient, but am well aware that no case should be considered cured until a period of, at least, one year has passed without recurrence, during which time no artificial support of any kind has been worn. It certainly does not seem to be advisable to attempt a radical cure in old persons, except in such cases as insist upon an operation, after they have been made acquainted with the dangers, as well as with the chances of recovery and of a permanent cure.

A CASE OF MACEWEN'S OPERATION FOR THE RADICAL CURE OF CONGENITAL INGUINAL HERNIA IN A BOY.²

BY ROYAL WHITMAN, M.D.,
Surgeon to the Orthopedic Department at the Boston Dispensary.

THE patient, a boy eleven years of age, was brought to me with a left scrotal hernia, which had existed since birth. Various trusses had been applied with

¹ Read before the Suffolk District Medical Society, Surgical Section, January 4, 1888.

² Read before the Suffolk District Medical Society, Surgical Section, January 4th, 1888.

but partial relief, and finally their use had been abandoned. Both mother and child were anxious for a radical operation, as the affection prevented the boy from playing with the other children, and was the cause of more or less continual discomfort, with at times severe pain. The hernia was about the size of an orange. The external opening admitted two fingers, the bowel slipping easily in and out of the abdominal cavity.

On May 9, 1886, eight months ago, I performed MacEwen's operation, assisted by Drs. Monks and Conant. The sac of the hernia, congenital, was easily dissected out, divided above the testicle, separated from the cord and returned to the abdominal cavity, the lower segment being sewed together over the testicle to form the tunica vaginalis. The sac was attached to the abdominal wall, and the canal closed with thick chromicized gut. The wound was closed with fine gut, several strands of which being placed superficially for drainage. The dressing consisted of iodoform gauze, covered with a thick pad of corrosive sublimate cotton, and held in place by a T-bandage of thin sheet rubber, which provided equable pressure, and prevented any contamination of the dressing. The leg was then flexed upon the body, and securely bandaged to a bent wire frame, known as the "Cabot hip-splint." This apparatus was of great service, preventing the child from tearing off the dressing; and I should strongly recommend its use for children, where, as in this case, constant attendance cannot be provided. In any event, too, this immobilization of the leg must materially aid in the cure.

During the night there was retention of urine, and afterwards elevation of temperature, which rose to 103° on the third day. The superficial stitches were then removed and the wound explored, but nothing was found to account for the fever except some induration about the parts. The temperature then fell to normal. On the twelfth day when the dressing was removed the wound had closed. During the third week the child who is now presented for examination, was about as usual, and has since suffered no discomfort, no bandage or support having been worn.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M.D., SECRETARY.

FEBRUARY 27, 1888, the President, DR. O. F. WADSWORTH, in the chair.

RESULT OF RESECTION OF THE ANKLE-JOINT.

DR. CABOT showed eight cases of resection of the ankle-joint illustrating the final result that can be hoped for from this operation. Tracings made by Mr. C. L. Scudder from several of the cases, were also shown; which gave the mobility of the diseased joints as compared with the well ones. The patients had all been treated at the Children's Hospital, and were not selected cases, as all of those operated upon by the reader, whose addresses he knew, had been sent for, and all of those who responded were shown.

The periods elapsed since the operation varied from one to seven years, and the joints were all solidly

healed and free from tenderness or swelling. In one large girl operated upon seven years ago, in whom the astragalus and a considerable portion of the lower end of the tibia and fibula with the malleoli, were removed, there was a tendency to pes varus, not sufficient, however, to cause inconvenience. The joint was firm and caused no discomfort, although she was constantly on her feet.

One rather puny boy had a slight degree of pes equinus, but with these exceptions the joints were in good position. In several instances, the bones removed, were shown with the patients. In all of the cases the disease was a caries of the smaller bones, often affecting the ends of the long bones and probably always tuberculous in character. In one case, disease of the knee-joint (white swelling), and in another, caries of the lower dorsal vertebrae complicated the condition.

The reader said that this operation was often, perhaps usually, unsatisfactory in adults, but that in children it almost invariably resulted in cure and in the restoration of a useful joint, as the cases present would help to show. He then went on to say: "In regard to the operation, the first important thing is the thorough removal of all diseased tissue, osseous, cartilaginous and synovial. In my earlier cases I often tried to limit the operation to the parts evidently diseased, and scraped out the softened portions with a sharp spoon. In dealing with the small bones, however, I soon found that the part left, almost certainly became affected with the disease and had subsequently to be removed, so that I later adopted the plan of removing the whole of any of the small bones which showed unmistakable caries. The only exception to this rule was made in cases of caries of the os calcis, in which the disease seemed to be wholly extra-articular. Of the longer bones the metatarsals were treated by the removal of the diseased ends.

When we come to the tibia and fibula, we have strong reasons for trying to save all of the healthy bone possible:

First: Interference with the epiphysal cartilage checks the future growth of the limb and may unnecessarily add to the shortening.

Second: The malleoli when they can be preserved add greatly to the strength and steadiness of the new joint. The shortened foot falls in between them and they give it much lateral support. It is therefore better, when possible, to thoroughly scrape out the diseased tissue in these bones and not, except in extreme cases, to saw off the ends evenly.

Several of the cases here this evening show, however, that even when the malleoli are lost, a very useful joint may still be obtained. After the removal of the bones the diseased synovial membrane should be carefully dissected out. This brings us to speak of the incision used in these cases. I have always used the old method with two lateral incisions, which avoid the injury of any tendon or vessels, and which I have found to give easy access to all parts of the cavity. The incisions should be of good length, as the thoroughness of the operation is important, and the skin readily heals.

In the after-treatment, one or two points seem worthy of attention: In the dressings, iodoform is a valuable auxiliary, as it seems to have the power of checking any subsequent tubercular formation which might start from small portions of granulation tissue, overlooked in the dissection. A seton of iodoform

gauze is kept through the joint from side to side until the wound has healed about it, and when it is finally withdrawn the sinus usually soon closes.

When the wound does not contract healthily and the granulations assume a pale, flabby look, it is usually evidence that the tubercular process has not been eradicated, and a second operation with the erosion of the granulation tissue and the thorough inspection of the bones, is usually wise. It is further of the first importance that these ankles should be kept immovable, not only during the healing process but for a considerable time (several months), after the joint is apparently sound. While dressings are necessary, I usually treat these cases on a posterior wire splint, such as I show here:



Wire Splint with padding for Leg and Foot.
Behind the ankle and heel the wire is covered with rubber tubing.

This is made of an iron rod $\frac{3}{8}$ of an inch in diameter, which after being bent to fit behind the leg, is padded for the reception of the calf and foot, while the wire which passes the ankle is left unpadded, but is protected with rubber tubing drawn on over it. This splint should reach to the middle of the thigh, and should be slightly bent at the knee to prevent the leg from turning upon it. With this last object in view, care should be taken not to make the splint wider than the leg, so as to allow lateral motion. With attention to these details, very perfect fixation can be obtained, and the dressings can be easily changed without removing the splint. After the wounds have healed, a plaster or silicate bandage may be applied, and the patient allowed to go about with crutches and a high shoe on the well leg. In one or two of my earlier cases, in which I neglected fixation after healing, the wound broke out afresh when the joint was put in use, but quickly closed when it was again immobilized.

Dr. E. H. BRADFORD said these cases of Dr. Cabot are of value in showing what may be gained by the operative treatment. A short time ago, Dr. Gibney, of New York, showed some excellent results from conservative treatment. Dr. Cabot, by these cases, has shown that much time can be saved in the treatment. The value of curetting is not great when applied to the ankle joint. This can readily be understood when we consider the anatomy of the joint. He preferred plaster-of-Paris bandages for fixation after operation to the wire splint in small children, because he thought it gave better fixation.

There is great danger of relapse of the tubercular condition, and for this reason the new-formed tissues should be protected for a long period. He is in the habit of using a Thomas splint after operation during the convalescence. It is important to protect the inflamed joint not only from motion but also from jar, and by means of a Thomas splint locomotion is possible with fixation of and protection to the joint.

Dr. Bradford has of late been using the method of Kocher¹ in operating. This method gives a very excellent view of the joint. A curved incision is made under the external malleolus backward to the external

border of the tendo Achillis. This incision divides the peronei tendons and the lateral ligaments. These tissues are reunited by suture at the end of the operation, care being taken to reunite appropriate tissues. The foot, after the incision has been made, is forcibly inverted, and a very excellent view of the joint is obtained. The astragalus can then be easily removed, and other bones if necessary.

Dr. H. W. CUSHING said: Fixation of the ankle, as has been already stated by Drs. Cabot and Bradford, is a very important element in the subsequent treatment of these cases, not only directly after the operation, but during the time when the patient is discharged from the immediate care of the surgeon. This favors apparently the closure of sinuses, and certainly prevents the subsequent deformities which are occasionally seen in cases which, at the time of discharge, were in good position. This prolonged fixation gives an opportunity for the necessary consolidation of tissues to take place before the ankle is called upon to bear the weight of the body. It has been found that a tin shoe for fixation of the ankle is a useful addition to the "Thomas" knee-splint alluded to by Dr. Bradford, since it, in addition to fixing the ankle, can be removed without inconvenience for necessary changes of dressing, and the condition of the seat of operation more easily controlled than where a fixed bandage, as plaster-of-Paris or silicate.

Dr. CABOT said that he was much interested in what Dr. Bradford said about Kocher's incision; he had often intended to try it, but had adhered to the old method from force of habit. He had always found it possible with the two lateral incisions to inspect all parts of the joint, and had sometimes passed two strips of bandage through from side to side, with which the assistants could pull the soft parts forward and back, and thus hold the wound widely apart. The lateral incisions have also an advantage when it is necessary to carry a saw through the joint for the removal of the ends of bones.

RUPTURED OVARIAN CYST.

Dr. F. B. HARRINGTON showed an ovarian cyst which had ruptured in the abdominal cavity, allowing its contents to escape among the intestines, causing considerable peritoneal inflammation. The cyst-contents, which weighed twenty-two pounds, were jelly-like and very tenacious. The patient's age was forty-two years. She was unmarried, and apparently in good health. A portion of the omentum was removed with a mass attached to it, resembling, but somewhat harder than the contents of the cyst. It was impossible to say how long the rupture had existed. The patient was doing well.

Dr. FITZ stated that the microscopic examination of the gelatinous material showed a homogeneous substance giving the reaction of mucine. It contained large, round cells in considerable number. The diseased part of the omentum was a tissue of an alveolar structure, the meshes being filled with the jelly-like substance. No traces of clusters of epithelioid cells were found. Numerous fibrous sprouts were seen projecting into the gelatinous mass, and their tops were covered with elongated cells, in which were hyaline globules.

The appearances corresponded with those which have recently been described as a pseudo-myxoma of the peritoneum. The suggestion is that the gelati-

¹ Arch. f. Klin. Chir., 1886-87, xxxiv, 318, 328.

nous contents which have escaped from the cyst have produced a certain degree of peritonitis, and are traversed by fibrous growths from the peritoneum. The gross appearances are suggestive of malignancy, but the structure gives no evidence of a cancerous growth.

Dr. JOHN HOMANS called attention to the adhesive quality of the mass. He said it could not be called a fluid. He had seen such cyst-contents several times, but it was not common. The cyst-wall was usually very thin—much more so than in the specimen shown. In his experience the pedicle had always been very small. When the contents escape into the abdominal cavity it is very difficult to remove, as it clings to the intestines with great tenacity. His cases had all recovered from operation, but two of them had subsequently died with what seemed like malignant growth. In one of these latter cases he had found hairs in the cyst, and some time after the operation an opening was formed into the bladder, through which, from time to time, particles of hair escaped. As a result of the accumulation of hair in the bladder a stone was formed, which he subsequently removed by operation.

In reply to Dr. Homans, Dr. HARRINGTON said that the pedicle in this case was not remarkably small, being as large as two fingers.

Dr. CHARLES HARRINGTON then read a paper entitled

THE VALUE OF SO-CALLED DIABETIC FOODS.²

Dr. E. S. WOOD said that he had looked up some notes of some analyses which he had made a few years ago; he found that his results compared very closely with those of Dr. Harrington. At one time Dr. Bowditch sent to him for analysis a diabetic flour, which the manufacturers represented to be free from starch. This was found to contain $70\frac{1}{2}$ per cent. of sugar when the starch had been converted. The manufacturers were informed of this, and they then sent a sample containing $39\frac{1}{2}$ per cent. This shows that by using care the amount of starch may be much reduced.

Ordinary Graham flour yielded a little over 70 per cent. of sugar. He had found that two samples of Paris diabetic bread had yielded—one about 27, the other about 37 per cent. of sugar.

Dr. F. C. SHATTUCK expressed his appreciation of the service which Dr. Harrington had rendered in so clearly demonstrating the grounds for the belief held and acted on by many members of the profession, that the claims of the so-called diabetic foods are fraudulent. In a paper read before the American Medical Association some years ago, Dr. Austin Flint—then Junior—remarked on this fact, and advocated giving ordinary bread rather than any of these patent foods, if bread in any form were given at all: thus the physician knows what he is doing, at all events.

Physicians are partly, but not wholly responsible for the popularity of these foods. Patients take advice from their friends, as well as from their doctors, and diabetics soon find fellow-sufferers, ready with suggestions. Some are unwilling to carry out as strict a diet as is desirable for a sufficient length of time, and deliberately transgress; others are deluded directly or indirectly by these swindling claims.

Some years ago, a lady asked the speaker if she might take the diabetic bread of the New York Health Food Company, and said that a diabetic acquaintance

enjoyed it very much. A sample was procured and given to Dr. Harrington for analysis, who found about 70 per cent. of sugar-forming material. Very recently, a young man sent by Dr. Greenough with a urine containing $8\frac{1}{2}$ per cent. of sugar was given minute directions as to diet, and told to report again in five days. At the expiration of that time the urine showed that the directions could not have been followed, and it was found that the patient had laid in a supply of diabetic crackers at Dr. Johnson's Educator Establishment: he carried the crackers in his pocket, and eat them freely between meals, having been assured by the clerk that they contained no starch. The crackers were interdicted, and when the urine was examined again at the end of five days sugar had disappeared.

There are doubtless many diabetics who are the victims of this knavery.

The diabetic preparations of the Health Food Company receive a practical endorsement in the article on "Diabetes" in "Pepper's System of Medicine."

The *New York Medical Journal* of January 7, 1888, contains a receipt for a substitute for bran-bread, which is found useful and grateful by a patient of the speaker. The only sugar-forming material it contains is the small percentage in the baking-powder. It is as follows: Beat six eggs, add one teaspoonful of baking-powder—or its chemical equivalent—one-fourth teaspoonful of salt, and beat again. Pour the mixture on a hot wattle-iron smeared with butter, and bake in a very hot oven. Powdered nuts may or may not be added. Eat hot with butter or cheese, or they will keep well, and may be eaten cold.

Dr. B. F. DAVENPORT said that what analyses he had made had resulted about the same as those of Dr. Harrington. He had been surprised at the amount of starch which he had found in ordinary bran—some 30 per cent.—but thought a bran could be prepared which would contain as little starch as macaroni or vermicelli.

Dr. HARRINGTON remarked that the "bran-flour" which he had examined contained a quantity of starch too small for chemical estimation, and that he had found it to be a very difficult matter to estimate starch in any form of bran, on account of the inevitable conversion of a large part of the cellulose into sugar by the action of the dilute acid, which might account for Dr. Davenport's very high figures. He had examined some samples of macaroni and spaghetti, hoping to find a low percentage of starch, in which event they might be recommended as substitutes for bread; he had, however, found upwards of 80 per cent. of starch.

Dr. G. K. SABINE said: Knowing the result of the analysis of some of the diabetic foods, and, in fact, many of them, I have been accustomed for a long time to have a bread made of Graham-flour and nice, clean wheat-bran in equal parts. As the whole wheat or Graham-flour contains a little more than seventy per cent. of starch, this mixture reduces it to the amount contained in some of the best specimens of diabetic flour. A patient of mine has succeeded in making the bread with a large number of eggs, butter, and baking-powder, in the form of biscuits or gems, so that each one contains, at least, half an egg. The advantages of it are that it is nutritious, palatable, and easily and quickly made, requiring only about twenty minutes for that purpose, and the amount of sugar-forming material is constant, not varying with differ-

² See page 286 of this number of the Journal.

ent specimens. Another advantage which it possesses over ordinary bread is its bulk, a property of no little importance, as diabetic patients frequently insist on having fairly large quantities, no matter what may be the character or composition of the bread.

Dr. R. H. FITZ thought that Dr. Harrington's investigations were likely to prove of especial value to physicians, as diabetic patients frequently insist on having fairly large quantities, no matter what may be the character or composition of the bread. His results confirmed most satisfactorily the statement of Ferrieh's, that the various substitutes for starchy foods usually contained more or less starch. He, therefore, recommended the use of ordinary bread in place of these substitutes.

A diabetic patient under Dr. Fitz's care for a year and a half was daily allowed a certain quantity of Graham-bread. During this time his weight and strength increased, while the daily quantity of urine diminished from six quarts to less than three quarts. Death eventually resulted from pneumonia with coma. He was constantly provided with almonds, and ate them between meals, when hungry.

It might be doubted whether Dr. Harrington's analyses could lead to a verdict of fraud against the manufacturers of the so-called diabetic foods and their agents. There are mild cases of diabetes which improve under a restricted diet, and severe cases which grow worse, despite the diet. There can be no question that under the restricted use of bread made from flour, called anti-diabetic, some cases will improve as they grow better under the limited use of ordinary bread. The manufacturer can undoubtedly show, as in the case of Dr. Rotch's patient, that certain diabetics improve while using their food. In the light of such evidence, a jury would not be likely to form a verdict of criminal fraud.

Dr. HARRINGTON answered that, in his opinion, the statutes relating to the sale of foods and drugs covered such fraudulent articles as these diabetic foods, and he had no doubt that an indictment could be drawn which would lead to a verdict for the Government. He did not believe that in such a case the defendants could show that the improvement spoken of was due to the use of *diabetic* flour, or that it would not have occurred with any other ordinary flour used in moderation. In any event, he was of the opinion that, under an indictment for fraudulently selling as non-starchy an article containing as much as sixty-five or seventy per cent. of starch, which substance they state in their circulars to act as a poison to the diabetic, the court would rule that evidence as to benefit derived from its use would be irrelevant and inadmissible.

Dr. GEORGE B. SHATTUCK expressed a fear that "diabetic foods" containing starch would continue to find the same market with sufferers from diabetes that the cures for the opium habit, containing some form of opium, have with those addicted to the opium habit, and the remedies for the alcohol habit, which contain alcohol, have for reforming drunkards—and this in spite of such good work as that done by Dr. Harrington, and in spite of the protest of the profession.

In a recent case of diabetes under his care, in a young girl ten years of age, where the ultimate prognosis was unfavorable, the patient and her mother eventually refused the annoyances of restricted diet, calmly preferring immediate comfort and a possibly earlier termination.

Dr. JOHN HOMANS was struck by the prevalence of diabetes at the present time, and its apparent increase. Something is due to more careful investigation, and yet he felt that the disease must be on the increase. He had recently seen a number of cases in private practice.

Dr. C. E. STEDMAN said that he had not had half a dozen cases of diabetes under his care in the City Hospital in fourteen years. In the last few years he had seen a number of cases in private practice.

Dr. E. N. WHITTIER said that in the last four months, at the Massachusetts General Hospital, there had been four cases under his care. He had found the insatiable appetite the most difficult thing to contend with. He recommended a coarse Graham-flour, rolled out into very thin sheets or sticks. Most diabetics insist upon a certain amount of bread. Cases of diabetes are frequently seen in out-patient departments.

SUFFOLK DISTRICT MEDICAL SOCIETY. SURGICAL SECTION.

G. H. MONKS, M.D., SECRETARY.

MEETING, Wednesday, January 4th, the chairman, Dr. J. COLLINS WARREN, presiding.

Dr. E. H. BRADFORD presented a communication on

OPEN INCISION IN WRY-NECK, CONTRACTED KNEE, AND TALIPES VARUS.¹

Dr. M. H. RICHARDSON said: I would like to ask Dr. Bradford under what circumstances he would consider it necessary to remove the plaster in order to change the dressings.

Dr. BRADFORD: Of course if there were constitutional symptoms, high temperature, etc., indicating the possibility of sepsis, the plaster should be removed and the wound inspected. There is usually some elevation of temperature the first night from the disturbance of the operation, but after that everything, as a rule, goes on well.

Dr. RICHARDSON: It seems to me that the operation on club-foot, as described by Dr. Bradford, avoids one of the great dangers existing in former osteo-plastic operations; namely, the opening of the synovial cavities of the tarsus. I think that such an operation may often be done without involving them. The less we lay open the synovial cavities the more favorable is the prognosis, and it seems to me that that operation is to be selected which, on the whole, renders septic infection of the joint least probable.

Dr. WARREN: I would say in regard to open incision in place of subcutaneous incision, that the small experience I have had shows that there is a little difficulty in managing the integument of the part where an incision has been made and the parts dissected away beneath and then stretched. The result is a lack of coaptation of the skin to the soft parts below, and a considerable delay in the union of the parts consequently. I have in mind a case of Dupuytren's contraction where I did the operation on both hands. On one hand a long incision was made, exposing the band, which was subsequently dissected out, after the skin had been removed from its surface. On the other hand I merely made a few subcutaneous incisions. In the latter case

¹ See page 288 of the Journal.

the wound healed rapidly, whereas in the former it was two or three weeks before firm union of the tissue had taken place, and the wound had ceased to secrete. I don't know that it is a disadvantage in all cases of deformity which are treated in this way, but at the same time it does not make the operation quite as simple as one would suppose where with antiseptic precautions one expects to get rapid healing.

DR. MIXER: There is one point in regard to this class of operations where the bone is partially chiselled through, and which shows particularly well in the specimen of Dr. Cabot's, referred to by Dr. Bradford. (and also on the caliver); namely, the forcing together and locking as in an impacted fracture of the fragments. The part that is not cut makes a sort of a lock that does not break, but bends. It may not do so in this operation, as the force is applied in such a manner that the fragments may be more inclined to separate than in McEwen's operation. This kind of impaction probably tends to hold the parts more firmly in position, and to hasten union.

DR. KINNEAR: I would like to ask Dr. Bradford whether in any case of tenotomy the muscles ever became strong again. Are the legs as strong as if the tendons had not been cut?

DR. BRADFORD: That would be a physiological question pretty hard to answer, and I do not know. I cannot answer positively from the results of experiments on animals, but my impression is that they do recover their strength. Certainly so far as we can tell from clinical results, they do.

DR. KINNEAR: Would it be so also in children over ten or fifteen?

DR. BRADFORD: If we compare cases that have not been operated upon by cutting (but where the tendon has been stretched) with cases that have been cut, I should say that the strength in one case is as great as that in the other. I refer to cases that have been watched several years.

DR. KINNEAR: I ask because we naturally suppose that the muscle would not have the same contractility as one that had not been operated upon.

DR. BRADFORD: Theoretically you would say so, but clinically the difference seems hardly noticeable.

DR. KINNEAR: The reason I ask the question is because it seems to me that the nervous lesion connected with the contraction of muscles is a subject which will occupy the attention of the profession a good deal in the future. Taking contraction of all kinds, it is a very wide subject. You begin with twitching of the muscles, which is a slight clonic contraction. Then you get real clonic contractions of the muscles, which last a very short time. Then tonic contraction, and then chronic contraction. The nervous influence is, without doubt, very powerful.

In a case that I saw last year one of the symptoms was that the head was suddenly drawn backwards some dozen or more times a day, to the terror of the patient. It was held there for a few moments each time. It was treated by ice to the spine, drawing blood, as I supposed, from the cells producing the contraction and it was overcome. After four or five weeks the patient entirely recovered. In a case that Dr. Chapman reports in a work on Neuralgia, an adult had a tonic contraction of the splenius and the trapezius, which was accompanied by neuralgia, and there was great tenderness over the second cervical vertebra. This head would jerk over to the right

side. By the application of ice to the whole length of the spine, in the course of ten days the trouble was entirely overcome, and the patient got well. He records other cases of chronic contraction, which were entirely cured, after lasting several years, by the application of cold to the spine, showing apparently that the central nerve cells must be in many cases the origin of the contraction of the muscle itself.

The point which I wish to bring up is simply whether, in many cases, such as for instance the contraction of the sterno-mastoid muscle, whether such an application might not very well overcome such a contraction without any operation at all, so that if there is a loss of contractility in the muscles produced by an operation, e. g. tenotomy, whether such a loss might not be prevented by having no operation at all in quite a number of cases. I don't mean to apply it to all cases, but to a great many. I thought it would be an interesting point in connection with Dr. Bradford's paper.

DR. BRADFORD: In regard to that matter there are a certain number of cases of wry neck that could undoubtedly be corrected without operation, but in cases where tenotomy is done there is a certain degeneration of the muscles themselves, whatever the original cause may be. Here, of course, the condition of the muscles is such that no alteration in the cells of the spinal cord would affect the fibrous tissue substance which is no longer muscular. In that case I think tenotomy would have to be done.

DR. ROYAL WHITMAN then read a paper on a

CASE OF MACEWEN'S OPERATION FOR THE RADICAL CURE OF CONGENITAL INGUINAL HERNIA IN A YOUTH.²

He showed the patient, and exhibited large diagrams copied from MacEwen's original article in the *Annals of Surgery*.

DR. G. H. MONKS followed with a

CASE OF MACEWEN'S OPERATION FOR THE RADICAL CURE OF INGUINAL HERNIA IN A WOMAN SIXTY-THREE YEARS OF AGE.³

DR. H. O. MARCY said: As the gentlemen of the Section know, I am deeply interested in the cure of hernia, and believe it is now conceded that I was the first to advocate and put in practice the open method of dissection and closure of the parts by buried animal sutures.

The operation under discussion, of Professor MacEwen, has been known to me for some years. I think it has many features which commend themselves to your approval. The author emphasizes as distinctive the treatment of the peritoneal sac. His method of intra-folding, without opening, is the essential point under discussion.

As will be seen in some of my earlier publications, I emphasized the importance of obliterating the sac for the same reasons advocated by Professor MacEwen. My attention, was directed to it many years ago by our distinguished pathologist, the late Dr. J. B. S. Jackson as a factor causing often the return of the hernia. I do not now recall a single surgical author who had mentioned it, in this relation, before the reading of my paper upon "Hernia" at the International Congress in London, 1881. Before this I

¹ See page 288 of the Journal.

² See page 288 of the Journal.

had treated the sac in various ways, sewing through its base and returning unopened, transfixing it through with the ring, etc. To all these procedures there appeared to me a marked objection. With the peritoneum, it seems clear, there can be no probability of reinforcing a weakened ring. The object to be attained is to leave a smooth, unobstructed peritoneal surface, over which, avoiding friction or interference, the semi-fluid intestinal folds may easily glide, without a depression to receive an impulse therefrom, and thereby cause a possible return of the hernia.

This does not appear to be the object sought by the author, since he thinks there is an advantage from the projecting button which he hopes may result therefrom, deflecting an impulse in another direction. Before the perfection of our antiseptic methods of operation, it can easily be seen that there was a distinct gain in not opening the peritoneum. Now, in the hands of competent operators, I suppose few would think the danger greatly increased by a free dissection. Not seldom is the opening of an old and thickened sac, filled with adherent omentum, rendered a necessity; very likely, also, the resection of its contents. I cannot help thinking, it is usually much safer to open an old sac and know the condition of the parts, and thereby, as in no other way, protect the abdominal contents in its closure. In due deference to an excellent authority, for whom, personally, I have the highest respect, I beg leave to differ from Professor MacEwen, since it seems a clumsy, unscientific method of treating a redundant, oftentimes half disorganized tissue, the theoretic resultant of which would, if attained, in my judgment be detrimental. The twisting of the sac and then ligating its base, as recommended by Dr. Banks, appears preferable in case of operation and in result; but both methods seem to be dominated by the teaching of all save recent surgery, where the treatment of the peritoneum by any method was undertaken with fear and trembling. In the large umbilical or abdominal hernia, would Professor MacEwen or his followers advocate this disposition of the redundant peritoneum? and if not, why not?

If we consider hernia in its essence, regardless of its particular variety, as a yielding of the abdominal wall, whereby its contents are displaced or extruded, then is not the surgical problem, the restoration as nearly as possible to the normal standard, the theoretic solution? If nature demanded the buttressing the parts by a "button," why are we not all thus provided in advance? Let us believe that nature, in her wise conservatism, soon disposes of the redundant tissue thus ingeniously left. In my judgment, Professor MacEwen is much more scientific and happy in result, from the careful way in which he closes the abdominal rings. I cannot doubt the method excellent, and the good results due in great part to his carefully placed buried sutures.

As early as 1870, I first began their use in operation for strangulated hernia, and, surprised at the result, I began a careful laboratory study of the histological changes incident to the burying of animal sutures in rabbits and dogs. To my delight, I found there was an active proliferation of connective tissue about the suture, which in itself had the appearance of having been vivified, doubtless replaced cell by cell by connective tissue.

This was the basis of my premises for the new op-

eration for the cure of hernia by open dissection and suturing. I have twice had the opportunity of making sections through the parts, after operating for hernia followed by cure, where death supervened some months after from other causes. Here similar results were also distinctly seen, and the peritoneum was perfectly smooth, without depression. These specimens were shown to the Society.

Earlier I resected the peritoneum, and coapted with a continuous over-and-over suture of gut or tendon: now I prefer to open the well-freed sac, and, the edges held by an assistant, with the finger within the cavity for protection of the parts, sew in a continuous even seam with a double kangaroo chromicized tendon. This I devised more than ten years ago, using a curved needle, not very unlike that of Professor MacEwen, the essential of which is the eye near the point, since thereby a double sewing-machine stitch can be made, threading the opposite end and withdrawing, thus carrying the sutures in opposite directions through the same puncture. This is repeated in stitches, not to exceed one-third of an inch, until sewed across. One knot suffices, regardless the number of stitches, an important desideratum with animal suturing. When the redundant sac is resected the peritoneum is returned. Then, with a larger needle and tendon, the refreshed walls of the ring are carefully approximated by sutures in a similar way. Sometimes the overlying fasciæ is also independently thus brought together and the external wound closed by an over-and-over continuous suture. Unless the abdominal wall is fat, I find it better to omit drainage and then seal the wound with iodoform collodion; over all, a wool-pad dressing.

I have operated in this manner over fifty times without the loss of a single life, excepting strangulated cases, where the abdominal contents were involved, and although I have not been able to trace the results in all cases, I am sure not less than seventy-five per cent. are known cures. I am glad to listen to the discussion of hernia and see the excellent results obtained, since I feel the operation by the open method a great advance in modern surgery. To relegate so many of our patients to lifelong suffering and a more than possible danger, is an *opprobrium* to our art.

DR. BRADFORD: I have had, I think, five cases of MacEwen's operation, and one of an operation recommended by Mr. Paul; namely, the twisting of the sac. I can only corroborate what has been said about the advantages of the operation and which are clearly stated in Mr. MacEwen's paper.

DR. MARCY: When I discuss the disadvantages of puckering, I discuss them as Mr. MacEwen does, theoretically, and all we may know about it is what we may get from the operation. The danger to the peritoneum, it seems to me, would be this: it makes a point against which something may be brought into contact, to the detriment of the peritoneal contents. If it is left alone we get a depression, a pocket, and that acts toward making it easy for the return of the hernia. I suppose this occurs in the way that has been recommended of sewing the sac into the ring, in which I have also had a considerable experience, because it holds and fixes the peritoneum to the point, and does not allow an easy gliding of the surfaces. In other words, it makes a point of fixture, and perhaps tension.

DR. BRADFORD: Do you think you can sew the edges of the sac together so that the peritoneum at that point can become as tense as the abdominal wall?

DR. MARCY: I believe it.

DR. BRADFORD: Then Dr. Marcy's experience differs from that of other surgeons. Other surgeons have not been able to get that theoretical result that Dr. Marcy claims.

DR. MARCY: I have just reported two cases where the surfaces were as smooth as if there had been no hernia.

DR. BRADFORD: The statistics, as collected, show that the results, as far as we can get at them, so far as prevention and relapse are concerned, are not so good as those reported by Dr. MacEwen. Although it is a comparatively recent operation, still we can see the results for eight or ten years, and though very good results can be obtained by the method described by Dr. Marcy, I think he is rather sanguine if he thinks that other surgeons are likely to be as successful as he has been in that respect. My experience has been simply with children, and the results have been very satisfactory.

The method introduced by Mr. Paul with the idea of giving an operation introducing the torsion method, I tried in one case, and, although the case was successful, I think MacEwen's method is rather preferable.

DR. MARCY: Pardon me a moment more. I was lead up to this operation in two ways. First, I ligatured the base of the sac, and then returned the whole peritoneal pouch *en masse*; which would be a modification of the MacEwen operation of puckering it into a mass and returning. That was unsatisfactory in a certain measure. I obtained good results, but at the same time it did not seem to me that the operation was so easy, or the convalescence was so rapid. Again, in a certain class of old and large cases I puckered it, and purposely sewed it into the ring. That is not original with me. But the cure was not so satisfactory or easy.

Then, reasoning still further upon the subject, (and so far as I know I was the first one to call the attention of the profession to this), the sac was drawn well down and then resected, the stump sewn through and through, and then returned, as I have described. That I do believe is preferable to the method of MacEwen. The other steps of his operation are not so different from my own, although I use a great deal more suturing than MacEwen.

DR. BRADFORD: Of course it is too much to claim that any one method would be desirable in all cases of hernia, and I don't think Dr. Marcy would claim that his method should be used in every case. You must cut your pattern according to your cloth. When you have a large ring you must act differently from what you would when you have a small ring.

If we have a case with the sac glued down, we cannot do as well as when the conditions are otherwise. I cannot see why Dr. Marcy should be so sweeping in his condemnation of the method, which has been pretty thoroughly followed out. It has certain advantages in some cases; it cannot be done in all cases. But I still think that in a child with congenital hernia the operation as described by Dr. Marcy could not be done. The sac is too thin. You cannot sew it. You can bunch it up. No matter how many times you

sew it you would find it difficult to get so firm a plug as in the way advised by MacEwen.

DR. MARCY: I would like again to say that I don't think it is wise to make a plug out of the sac. It is faulty in so far as you rely upon it as a plug. Professor MacEwen does not attempt that as I understand it. He simply intends to keep something on the inside that prevents the intestines coming out. He does not use it as a plug.

DR. BRADFORD: Perhaps Dr. Marcy is right. I should call it a cover, perhaps. I say that the objections that Dr. Marcy has advanced, which are theoretical objections, have been refuted by practice.

DR. MARCY: I am perfectly willing to leave it open to personal opinion. I am glad to have the matter brought up. I think that anything which calls the attention of the profession to hernia is a distinct gain. We have been too fearful about operating.

DR. S. N. NELSON: If the sac which is put back in the MacEwen's operation remains free, as is presumed by the operator, it seems to me, especially if there be any weakening of the abdominal walls, that it acts something like the cone which the plumber uses to open a pipe and thereby is detrimental. If it becomes adherent to the wall, as Dr. Marcy suggests, perhaps it thereby tends to strengthen the ring. If it is absorbed as we know in other cases similar processes are absorbed, for example in the callus of bone, then as Dr. Marcy has said there is obtained, in several weeks or months, the same result as he obtains at the time of the operation. The advantages of Dr. Marcy's suture I think are something very great. In these operations the changing of the sutures into connective tissue must be so much gain. The fact that sutures are put in in superimposed layers is also, I think, a great gain. I have aided Dr. Marcy in this operation in many cases, and I have, as testimony in its favor, the results where he has performed it upon myself.

DR. WHITMAN: Of course the sac becomes adherent, for the fresh surface resulting from its dissection is placed upon the fresh surface formed by the separation of the peritoneum about the internal aspect of the ring.

As to Dr. Marcy's treatment of the sac, it only differs from the ordinary operation in that he sews up the sac with a special stitch, and cuts it off, instead of simply tying it and cutting it off. It seems unlikely that any great advantage is thus obtained.

DR. MARCY's method of sewing up the canal must close it in a very thorough manner.

DR. GREEN: It seems to me that theoretically this operation of MacEwen promises more than any other operation that has yet been devised for the radical cure of hernia. Of course it is too soon for us to be sure that it is going to prove as beneficial as we hope. We have been disappointed so much in the previous operations for radical cure that I think it leads us to be a little sceptical in regard to this one. But I hope it will be tried here, and in the case of adults.

In children a large proportion, if they are carefully looked after, can be cured by the wearing of a truss. Perhaps not as surely as they would be in this way. I should think well of doing this operation in the case of children. In the case that Dr. Whitman shows to-night he has a firmer closure of the ring than one often sees from the radical cure. Two or three years is not sufficient. I often see them recur after a longer period than that.

DR. WHITMAN: Speaking of recurrence, there are some very interesting observations in the article edited by Professor Socür, in which it is stated that three-fourths of all recurrences take place in the first year. After the first year the patient has but one chance in fifty of having a recurrence.

DR. GREEN: There is no question but that the first year is the time when recurrence is very much more likely to take place. I have seen a good deal of it in the case of Heaton's operation. The recurrence there is a very common thing. Usually there is a large number of cases in the first year. I have known a good many ruptures to come down three or four years after the operation.

DR. WARREN: I think Dr. Green has touched the main point that most operations that have been hitherto devised have not been attended with so uniform success as MacEwen claims for his. And MacEwen's published cases are still, of course, small as compared with those of any other operation of an older date. MacEwen, therefore, has got to stand the test of time which the others have gone through.

A great deal was claimed for Wood's operation, yet we know that a great many failures followed it eventually. Although Wood still claims very satisfactory results, I do not think the profession has fully indorsed him. So with other operations for radical cure. What interests me in MacEwen's operation is not so much the theoretical statements as the fact that his operations are so uniformly successful. Perhaps that may be due to his skill as an operator, to his manipulation, dressing, etc.

The members of the profession are still undecided as to what operation to select. The operations of older date show a great many failures. Thus far, although perhaps the returns are not all in, MacEwen's operation seems to have a good show. When they are all in, whether they will be so favorable time only can show. It seems to me that eventually we shall get satisfactory results.

THE NEW YORK ACADEMY OF MEDICINE.

STATED Meeting, March 1, 1888.

DR. EDWARD B. BRONSON read a paper on

PREVENTIVE TREATMENT IN THE PRIMARY STAGE OF SYPHILIS.

By preventive treatment, he said, was not necessarily meant abortive treatment; but it embraced all measures tending in any degree to abridge or mitigate the subsequent course of infection and its effects on the constitution. The utility of any such measures would depend, first, on what the nature or essential quality of syphilitic infection is, and, second, on the special status of this infection during the primary stage of the disease. Of syphilitic infection, however, we had no positive knowledge, either as to what constitutes its essential element or what is its mode of progress; so that, until more light was shed upon the unsolved problem, we had to make the most of what there was.

The question in the form in which it immediately presented itself might be stated as follows: Are the indications thus far afforded by our imperfect knowledge of syphilitic infection such as to render any attempt at preventive treatment in the primary stage of

the disease unavailing and absolutely hopeless, as is maintained by many? There were two modes of approaching this question, one theoretical, and the other empirical.

In considering the indications furnished by the pathological conditions in syphilis, the first inquiry was naturally directed to the essential cause of the disease. Here, all was, as yet, hypothetical, and the most that we could do was to accept provisionally that view by which most was explained. No theory accounted for the observed phenomena of syphilitic infection so satisfactorily as that which attributes them to the presence and growth in the tissues of certain specific micro-organisms. Thus far, the microbe of syphilis had not been positively determined; but even were it fully established that syphilis is a parasitic disease, due to known forms of micro-organisms which could be cultivated outside of the body, it was by no means certain that the answer to the question of the utility of preventive treatment would be affirmative. Judging from experience in such diseases as tuberculosis and contagious anthrax, in which the specific germ had been identified, the success of antiseptic treatment was far from assured.

But the conditions in syphilitic infection were peculiar. Not only did the inoculation usually take place at a single point where it was freely accessible to manipulative procedures, but there were indications, in the slow and gradual progress of the disease, that general infection does not take place immediately, while there was a temporary sojourn of the virus in the region where first implanted. After describing the phenomena presented in the ordinary course of syphilitic infection, Dr. Bronson remarked that the most satisfactory explanation of the various events was that when first implanted in the tissues, the virus does not immediately pass into the general circulation, or what portion does is insignificant; that, mainly at least, it is at first confined to the spot where the future chancre is to develop; that here finding a favorable soil, it grows and slowly increases till its intrusive presence becomes a source of offense to the tissue harboring it, and gradually inflammatory reaction results. From this source of generation the virus contaminates, sooner or later, the nearest lymphatic glands, which in turn become other sources of supply, until, finally, from these multiple foci, the whole organism becomes infected. According to this view, the main route to the general circulation was by way of the lymphatics and through the *receptaculum chyli*. The pathological conditions seemed to imply that the disease advanced by way of the lymphatics in a manner analogous to the diffusion of the malignant tumors.

Whether, however, in syphilis the contamination advanced by such regular approaches from one gland to another that any definite interval could be said to exist between the affection of one gland and that of the next in succession was very doubtful.

In the indications presented up to this point, he went on to say, we found nothing incompatible with the position that during the primary period of syphilis the disease is located within the vicinity of the point of inoculation; but the view was current among syphilographers that the manifestations of this stage are always anticipated by infection of the general system. According to this position, directly upon its inoculation, the syphilitic virus passed into the general circulation, and the incubation pertained, not

to any *materies morbi* in the vicinity of the point of inoculation, but to something in the blood; while the initial lesion was the first tangible sign of the blood disease; reflected in some arbitrary and inexplicable manner to the spot where the virus affected its original entrance.

Two facts were alleged concerning the primary stage of syphilis upon which the theory of the symptomatic character of the initial lesion was based: (1) That an individual who has been inoculated with syphilis has always acquired immunity from any subsequent inoculation of the syphilitic virus before the chancre develops; and (2) that extirpation of the chancre does not prevent the regular course of the disease. That there was a period within a certain time after inoculation when the tissues were not refractory to a second implantation of the virus, was shown by the fact that when a second or third inoculation takes place within a short period from the first exposure, successive and multiple chancres result. The immunity, therefore, was not established at once. But it was claimed that after the chancre had once formed, constitutional infection was an accomplished fact, and immunity was then complete. In verifying this point, however, the length of time it required for the chancre to develop should be taken into consideration. The second inoculation might have its effects forestalled and prevented by constitutional infection intervening before the completion of its inoculation. While it was true that as a general rule auto- and re-inoculation in the primary stage failed to produce any perceptible effect, a sufficient number of cases had been reported to show that the rule was not invariable, and that if immunity were the test of general saturation with the syphilitic poison, we had to conclude that the chancre is not positive evidence of constitutional disease, and hence cannot be its symptom.

It might be conceded, however, that in the majority of cases immunity did precede what is known as secondary syphilis. It seemed not improbable that a slight degree of general infection might exist in primary syphilis, which, though sufficient to confer immunity upon the individual from any second installment of the virus, was yet insufficient to cause general disease. A notable illustration of such an immunity was shown in the case of the mother of a syphilitic child, who, notwithstanding she might at no time present any outward sign of syphilitic infection, was immune from contagion, and suckled her child with impunity. Moreover, there was nothing in the view proposed, that did not accord with the results of preventive inoculation in other infectious diseases.

The results of ectrotic treatment had thus far afforded but little encouragement. It was affirmed to be the rule in infectious disease generally, which take their origin from a local point of inoculation, that it is impossible to prevent general infection. In syphilis, however, all the obvious signs pointed to a much slower development than in the others. Certain results reported by Signund would seem to be clearly in favor of abortive cauterization immediately after syphilitic inoculation. Of 57 patients who presented themselves with abrasions after suspicious connection, 35 were cauterized; and of these, only 10 developed syphilis. Out of the 22 not interfered with, 11 became syphilitic. There were also indications that the earlier the cauterization was practised, the better the chance of its success. Thus, of the 35 cases cauter-

ized, in 24 this was done from the first to the third day following the suspicious exposure; and of these only three became syphilitic. Of 11 cauterized from the fifth to the tenth day, 7 became syphilitic; and this would tend to show that after the fourth day the chances were against the success of the operation.

Most discouraging was the well-known case reported by Berkely Hill, in which a patient with a torn frenum was cauterized twelve hours after a sexual encounter, returned a month later with the cicatrix indurated, and afterward developed constitutional syphilis. A possible loop-hole of escape might be found in the supposition that the patient had exposed himself to the disease during his month of absence. Still, there was evidence enough to show that the virus of syphilis passes beyond the reach of caustics within a short time after its inoculation. *A fortiori* by the time the chancre was developed it should be still further removed. But, though inaccessible to caustics, it had been hoped that the infected part might be included in a free incision, and while the results reported had shown a most exasperating diversity, the fact remained that in a considerable percentage of the cases the occurrence of constitutional syphilis was apparently prevented.

It could not be said, however, that the results of excision made conclusively either for or against the hypothesis of the local character of primary syphilis. As a manifestation of the primary stage, the chancre was hardly of more importance than the indolent adenopathy. That the indurated lymphatic glands in the vicinity of the initial lesion were contributory sources of infection there was little reason to doubt; and were the initial lesion removed, they would doubtless still suffice to contaminate the system.

While, then, it could not be affirmed of any period in the course of the malady that the disease is strictly limited to the site of the initial lesion, the proposition that syphilis is at first essentially a local disease remained still uncontroverted. As to the hope of interference afforded by the views now presented, Dr. Bronson said it had been intimated the answer to the question might be equally valid whether based upon theoretical or empirical grounds. Empirically, the answer was so ambiguous that we had been forced to have recourse to theory; and here we found the omens not unpropitious. An infection whose limits were circumscribed and more or less definable was a very different thing to one that had already taken possession of the entire organism. During the forty days' sojourn of the enemy in its outlying camps, while the insidious infection was slowly advancing its outposts from the periphery to the vital centres, he asked, are there no other resources than in excision of the initial lesion, which is but one of the multiple foci of infection, or this, together with extirpation of a few inguinal glands, and in constitutional treatment?

Excision of the initial lesion might have accomplished something. Certainly, where practicable, it was a perfectly rational, safe, and proper procedure. It was removing an annoying symptom and a possible source of danger to others. In a few instances excision of inguinal glands, together with the initial lesion, had been reported, but thus far without noteworthy results, though it was by all means desirable that experiments in this direction should be continued. Inspired by the success of Pasteur in his preventive inoculations for charbon, it occurred to Diday that by

inoculating a patient recently infected with syphilis with an attenuated syphilitic virus, the course of the disease might be prevented; but this idea had never been put in practice. As to the value of medicinal anti-syphilitic treatment during the primary stage, there was a diversity of opinion. While it was pretty generally conceded that the employment of mercury in this stage tends to retard the appearance of constitutional symptoms, the apprehension had been expressed by some that in repressing the outward manifestations of infection, we were risking a more serious implication of internal organs. There was an inconsistency, however, in the idea that for the mouth or so of primary syphilis the same remedy was to be shunned because of dangerous after-effects, whose continued employment during the years of the constitutional disease was accepted without demur. In many instances, mercury was given internally in syphilis for strictly localized lesions, where the general system showed no sign of the disease, and with unquestionable effect; while there was hardly any one but admitted that when the chancre was formidable in size, or slow in yielding to local measures, a mercurial course would hasten its resolution.

Supposing that mercury does not act as an antiseptic in syphilis, it was very questionable whether it could have any effect upon germs circulating in the blood; and it was much more probable that the effect would be exerted where both the germs and the mercurial would be apt to accumulate, as at such places of elimination as the skin, or where deposited in the tissues. That mercury does exert a most decided influence upon the local manifestations of syphilis when topically applied, we had undoubted evidence; then why should not this potent influence be brought to bear directly upon those local lesions which were also dangerous foci of infection in the primary period of the disease? It was only recently that the so-called "regional treatment" of primary syphilis had received much attention, and as yet no remarkable results had been reported. Dr. Bronson said that his own experience had been mainly confined to certain experimental attempts as to the possibility of the method, and it was almost purely on theoretical grounds that he recommended this treatment.

The scheme consisted in the local use of anti-syphilitics by a method designed to bring the remedy in direct communication with the whole of the affected region in primary syphilis, including more particularly the initial lesion and the diseased glands. As commonly employed, the regional treatment had consisted chiefly in the use of mercurial hypodermics beneath the initial lesion (unless this was excised) and into the mass of the indurated lymphatic glands. But the plan might be easily extended. The field of operation might include all of that district whose lymphatic vessels tend in their course towards the ganglia which are the seat of the disease. Where the initial lesion was situated upon the genitals, the area most available would consist of the external genitals, the perineum, and the upper inner and anterior aspect of the thighs, together with the inguinal region and lower part of the abdomen. By multiple small injections and by inunctions within this area, the remedy might be introduced little by little into the lymphatics, with the hope of its being conveyed in sufficient amount to the diseased glands to destroy the infectious germs, or to retard their multiplication.

The only agent thus far employed for this purpose was mercury. No substitute for it had been found, and the question was how to introduce this irritating substance into the affected region with the least amount of offence to the normal tissues, but in sufficient quantity to exert its antidotal or antiseptic influence upon the germs of the disease. When hypodermics were used it was not necessary that the drug should be injected in large quantity in any one spot, nor in a concentrated form. A twentieth of a grain, or less, of the bichloride, introduced in separate injections of not over the hundredth of a grain each, would afford a more reasonable hope of effectively reaching the seat of the disease than a much larger dose given by the mouth. Dr. Bronson said he had used a solution of one part in four hundred or five hundred of mullage and water, with a small quantity of common salt added. Of this four or five injections were made, of four or five minims each, distributed over different parts of the cutaneous area described. The discomfort caused by the injections was insignificant, especially if care were taken to avoid any escape of the fluid into the corium. The number and frequency of the injections must depend on circumstances and on individual judgment. Into the skin of the abdomen and thighs they might be repeated daily, or every second or third day. Together with these injections, but more especially in situations where the latter were less admissible, as in the perineum and over the penis and scrotum, inunctions also might be employed; and for this purpose a mercurial soap was preferable to mercurial ointment. Many modifications of the plan thus outlined would doubtless suggest themselves. It might be said that regional treatment was also constitutional treatment, as in a degree it no doubt was; but it was something more, and surely it was something better than doing nothing at all.

DISCUSSION.

DR. EDWARD L. KEYES regretted that Dr. Bronson had not been able to present more practical results from the method advocated in the paper. His impression had always been that the disease becomes general from the time it is acquired, (before the appearance of the primary lesion, which occurred only after a period of inoculation); and he believed, therefore, the virus at once got beyond the lymphatic chain. He related a case in which, notwithstanding the complete excision, within twelve or fifteen hours after a suspicious connection, of a small livid papule on the back of the penis, the most marked constitutional symptoms subsequently occurred. In this instance there was no further trouble whatever about the local lesion, and not the slightest enlargement of the inguinal glands. Whether washing the parts immediately after suspicious contact would in any case have the effect of preventing infection of the system he could not say.

The objection to local treatment, before the diagnosis of syphilis was established, with the only agent that was of any service afterwards consisted in the fact that such a course was always likely to throw more or less discord into the life of the patient, while if constitutional symptoms did develop they are apt to run an irregular course. He then related the case of a medical student who, contrary to his advice, commenced a mercurial course in consequence of a slight abrasion of the prepuce. At the end of six months, no

evidence of syphilis having in the meantime presented itself (if the enlargement of a single one of the post-cervical glands were excepted), he gave up the treatment. Within two years, however, he became the subject of hemiplegia, and eventually died of syphilitic brain disease. As a rule, he believed it was much better to delay treatment until the diagnosis was confirmed by the appearance of secondary symptoms. Otherwise a patient might be treated for syphilis who did not have the disease at all; and he referred to an instance that he had known in which a gentleman who never had the disease took bichloride of mercury for twelve years in consequence of a mistake of this kind.

DR. ROBERT W. TAYLOR said that he agreed with Dr. Bronson that the history of the disease and the analogic evidence afforded by certain other infectious diseases showed that syphilis is at first a local affection; but a very extended experience had convinced him that neither excision nor cauterization would prevent constitutional infection. There was already evidence enough to show that syphilis could not be exterminated at the radicals. Bloodvessels were frequently found running up to the chancre, and the new-growth cells germinated indefinitely; so that he did not believe that a single case of true syphilis had ever been aborted. He thought Dr. Bronson was wrong in regard to the immunity of the mother of a syphilitic child, for, while it was true that a woman could have a syphilitic child and yet not take the disease herself, it was a fact, as shown by Caspari, that she might contract the disease in the ordinary way.

In primary syphilis, Dr. Taylor went on to say, the circumstances were entirely different from what they were later on. We had to deal with a nascent disease which exhibited marked activity, and hence the most prompt remedies were required to destroy the new growths that were forming. He believed it was impossible, however, to safely employ mercury, the only agent at our command for this purpose, in sufficient quantity to have the desired effect. He agreed with Dr. Keyes that it was most rational to begin the treatment with the secondary stage of the disease. By so doing a more orderly sequence was secured, and the moral effect upon the patient was also much greater. As far as we could judge, mercury acted by causing fatty degeneration of the syphilitic cells, and as these cells did not become matured until the constitutional symptoms of the disease appeared, he thought it was altogether irrational, as a rule, to use this agent until the secondary stage was reached, especially since it had been shown that syphilis does not run the tractable course in those who are treated early as in those from whom mercury is withheld until after the primary stage. There were, however, certain conditions which called for early treatment, and among these were the following: When the chancre is so large as to impede urination, when there is phagadæna; and when the chancre is situated about the eyes, mouth or fingers, where it is liable to communicate infection to others. There were also social reasons sometimes why early treatment should be instituted.

DR. BRONSON said that in the paper he had acknowledged that his views were based largely on theoretical grounds. He held that it was necessary that the subject should be approached in a speculative spirit, and what he had endeavored to do was to point out the indications which called for early treatment.

If the disease was primarily constitutional there were no such indications; while the fact that the disease was primarily local did not imply that excision of the initial lesion should abort it. In his argument he had expressly discarded excision as a means of abortion, because by the time the chancre appeared the disease had advanced to the lymphatics. In order to abort it it would be necessary that all the foci of infection should be eliminated, and this had been proved to be impossible. Believing, however, that the disease was still local, he thought it was philosophical to treat it regionally, and thus counteract the infection as far as possible in this early stage. The objections which have been urged to such a course seemed to him altogether trivial, and he felt confident that any patient would prefer to take the chances of this prompt treatment rather than do nothing until the fully developed secondary symptoms presented themselves. Although he had no results to offer, he could abundantly testify from his own experience that the method was entirely feasible, and he certainly thought it was worth a fair and systematic trial.

MEETING OF THE MASSACHUSETTS MEDICO-LEGAL SOCIETY.

W. H. TAYLOR, RECORDING SECRETARY.

FEBRUARY 1, 1888. The meeting was called to order by PRESIDENT WINSOR. Twenty-three members were present. Records of the last meeting were read and approved.

DR. R. H. FITZ, chairman of the committee on preparation of a blank form for autopsy returns made his report. He acknowledged the receipt of criticisms from various medical examiners, and proceeded to discuss them. They were mainly as follows:

- (1) The blank form is too full and complete.
- (2) It is not detailed enough.
- (3) Its phraseology might be improved.
- (4) It does not give enough blank space.
- (5) It will aid the defendant.

DR. FITZ stated that the committee had carefully considered the objections and answered them at some length. He said that he thought the objections could be met without changing the form, and recommended its adoption with a few unimportant changes. The word *inquest* should be left off the outer fold of the blank, and a declaration that autopsy is necessary inserted just below the statement of name, age, etc. He moved the following for adoption by the Society:

I. That the Society provides its members with copies of the printed form prepared by the committee, and a sufficient number of blank pages of corresponding make for use in recording the evidence furnished by a post-mortem examination.

II. It further recommends the general use of such blanks in reporting to the judicial officers the results of a medico-legal investigation requiring a post-mortem examination.

III. A blank should accompany the above and should interpret the evidence contained in the record of autopsy, as well as include a statement of such additional facts as were necessary to determine the cause and manner of death, and the committee recommends that the standing committee be requested to prepare a blank for this purpose.

MEDICAL EXAMINER HARTWELL moved that the

report be received and its recommendations adopted—seconded by Medical Examiner Mead.

MEDICAL EXAMINER PINKHAM suggested that a statement of the supposed time of death might be inserted with advantage. Would also have headings for rigor mortis and post-mortem discoloration. In the section on injuries, would have headings for varieties of wounds, fractures, etc. Would crowd printed headings farther toward left side of the form, and draw a heavy line to limit the blank space.

MEDICAL EXAMINER ADAMS made some remarks regarding the phraseology of the blank form, and inquired of Dr. Fitz the use of the form.

Dr. FITZ replied that such forms are used abroad as an aid to the medical examiner, the court, and expert witnesses. He thought that it might be as useful here as there.

MEDICAL EXAMINER PRESBRY believed in the use of a very complete system for aid to the medical examiner, but would object to such returns to the District Attorney.

Further discussion was made by members Adams, Morse, Presbrey, Pinkham and Fitz. Medical Examiner Pinkham moved to lay the report on the table, and take it up at the June meeting—lost.

MEDICAL EXAMINER PINKHAM moved adoption of his suggestions as an amendment to the blank—lost.

Dr. FITZ moved that the report be accepted and its recommendations be voted on seriatim. The motion prevailed; and the Society adopted recommendations I and II, and rejected II.

A communication from the Secretary of the Georgia Medical Society requesting cooperation in securing legislation favoring importation of surgical instruments, drugs, and medical supplies, free of duty, was laid on the table.

MEDICAL EXAMINER TOWER moved that the Corresponding Secretary be instructed to print three hundred copies of the blank form for autopsy returns, and send three copies to each medical examiner belonging to the Society. The motion was adopted.

On recommendation of the Executive Committee, Medical Examiner O. H. Howe, of Cohasset, was unanimously elected a regular member of the Society.

MEDICAL EXAMINER PINKHAM reported an interesting case of manslaughter from a blow on the temple which fractured a remarkably thin skull.

Voted to adjourn.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

JANUARY 25, 1888.

By the courtesy of PROF. F. W. PUTNAM, the Section was convened in the hall of the Peabody Museum at Harvard University, Cambridge. The night was one of the most inclement of the entire winter, which greatly diminished the number of those who would have attended the meeting. The Chairman, Dr. A. L. MASON, being absent, Dr. G. H. LYMAN was unanimously chosen Chairman *pro tem*.

PROFESSOR PUTNAM addressed the Section upon

the subject of the recent excavations which have been carried out under his direction in the Ohio Valley, in a location where abundant evidences of a prehistoric residence of man exists, and in which researches much valuable information concerning the habits and customs, as well as of the diseases and their treatment in the unknown races of men which occupied this portion of our country at that remote period, have been gained.

The time during which the peoples lived whose remains and whose handiwork we now find cannot be accurately determined by years. It is determined by the geological chronology to have been at or subsequent to that period during which the glacier which covered a great part of this continent was retreating toward the north, from the gradual elevation of the temperature of this part of the earth's surface. At this time and from this cause, a great moraine was left, extending from the vicinity of New York across Ohio, to Cincinnati, then turning northward to the Rocky Mountains, near St. Paul. All this region, and all to the north of it, was covered with ice, and at the lower edge of the ice-field, where the melting line of the ice was reached, there was left a line of gravel extending across the continent. Man was at that time living on the south side of this moraine. The melting of the ice and the consequent rise of the waters during the period spoken of brought down great amounts of *débris*, gravel, etc., from points higher up, and gradually covered the surface of the ground with a layer of soil varying in thickness from six to thirty feet. In many parts of the continent which were situated at the border of this moraine, and which were similarly affected by the melting of the ice and the retreat of the line of the glacier, there are found the same relics of human life, the same implements, the same ornaments, and these are always found in precisely the same geological formations, underlying the same geological strata. Thus quartz tools of similar pattern and quality have been discovered at Trenton and at Little Falls, Minn. We find, then, that this portion of the globe was inhabited by man at a time when a large portion of the American continent was covered with ice and uninhabitable. On the southern side of the ice was the residence of man. As the ice retreated, man moved further and further toward the north, being crowded by other races from the south, until this form of civilization was extinguished throughout this region. The only existing remnant of the peoples who inhabited the territory at the edge of the great moraine is found in the Esquimaux, who still preserve the type of skull, and the shape of the cranium and face peculiar to the race occupying the area of the ice-moraine, whose skeletons are still preserved in the mounds which are now being explored. The skull of these early inhabitants of this part of the country is long and narrow, and is keel-shaped, the parietals are high, and the head is narrow. The Indian, so called, has a skull long and narrow, but not keeled. This form of skull is found along the coast of California, extending along the base of the Rocky Mountains, through the Mississippi Valley and that of the Columbia River, the upper Missouri, thence along the Great Lakes, and down the valley of the St. Lawrence, with many branches to the north and south. This race evidently reached America by the Aleutian Islands from Asia, and the first traces of their presence on this continent are to be found near

the Rocky Mountains. From the West the race pushed to the Atlantic, near the Carolinas, and then turned backward and to the north to the valley of the Ohio. The broad, short head which is also found in this region belongs to a tribe which came from the South, being found in Mexico and in northern parts of South America. They evidently originated in the southern islands of the Pacific, and are of distinctly Mongolian type. These peoples advanced toward the North, and came into contact with the longheads in the valley of the Ohio. In this region their burial places are still found, and their remains are discovered in great number.

Professor Putnam gave a detailed and most interesting account of the habits of these people, their religious observances, their mode of dress, their taste in ornamentation, the textures of their clothing, and materials of war and domestic use. He then exhibited a series of pathological specimens collected from the mounds and other burial places, or found in accidental locations, showing unmistakable evidences of surgical knowledge and operative skill among these primitive people. Several cases of fracture of the long bones were shown, in which the bone had united at an angle, with great shortening. A tibia was exhibited in which there was the unmistakable evidence of a perforation of the tuberosity into the interior of the head of the bone, produced by a surgical instrument of the nature of the trephine. Several cases of injury to the skull were observed, in which there had been surgical treatment of the patient, with subsequent processes of repair, and the recovery of the patient.¹

Before adjournment, DR. LYMAN said that the members of the Suffolk District Medical Society would consider him derelict in his duty, were he not to offer to Professor Putnam their thanks for his great kindness in opening the museum to its Section of Clinical Medicine, and for the delightful and interesting lecture upon his recent exploration in the Miami Valley, with which he had favored them. He begged to assure him that the Section would cordially appreciate his courtesy.

Recent Literature.

Doctor and Patient. By S. WEIR MITCHELL, M.D., LL.D. Philadelphia: J. B. Lippincott Co. 1888.

This little volume of 177 pp. octavo, consists of an introduction and six essays on as many different subjects, which have more or less connection with each other, and easily range themselves under the title chosen by the author. In the introduction Dr. Mitchell says: "I was tempted when I wrote these essays to call them lay sermons, so serious did some of their subjects seem to me. They touch, indeed, on matters involving certain of the most difficult problems in human life, and involve so much to war or make human character, that no man could too gravely approach such a task. Not all, however, of these chapters are of this nature, and I have, therefore, contented myself with a title which does not so clearly suggest the preacher." Even though the title may not suggest the preacher, the pages everywhere sug-

gest the experience of the confessor. And the physician, certainly he who has to deal with the class of patients with the treatment of which Dr. Mitchell's name is especially associated, is, in Protestant countries, the father-confessor of this generation. Though modestly stating that the book is for popular use, rather than for the profession, the latter will find in it quite as much that is wise and helpful.

We cannot forbear quoting with the heartiest approval a few more paragraphs from the introductory portion: "What I shall have to say in these pages will trench but little on the mooted ground of the differences between men and women. I take women as they are to my experience. For me the grave significance of sexual difference controls the whole question, and, if I say little of it in words, I cannot exclude it from my thought of them and their difficulties. The woman's desire to be on a level of competition with man and to assume his duties is, I am sure, making mischief, for it is my belief that no length of generations of change in her education and modes of activity will ever really alter her character. She is physiologically other than man."

The six essays are entitled: "The Physician"; "Convalescence"; "Pain and its Consequences"; "The Moral Management of Invalid Children"; "Nervousness and its Influence on Character"; "Outdoor and Camp-life for Women."

Photographic Illustrations of Skin Diseases: an Atlas and Text-Book Combined. By GEORGE HENRY FOX, A.M., M.D. Complete in twelve parts. Second Series. New York: C. B. Treat, No. 771 Broadway.

The first two parts of the second series of Dr. Fox's well-known photographic illustrations of skin diseases, colored by hand, contain representations of seborrhœa, erythema multiforme, erythema exfoliatum, erythema bullosum, variella, variola, urticaria, urticaria pigmentosa, dermatitis caloricæ, dermatitis venenata, and erythematous eczema. They are undoubtedly the best photographic representations of skin diseases which have yet appeared, and the cases portrayed have been selected with care from a large amount of clinical material.

We do not, however, share in the opinion that the photographic process is the one best adapted to give a good picture of cutaneous pathology. The distribution and grouping of cutaneous eruptions are, of course, recorded with exactness, but the morphology and color of the individual lesions are not shown with the clearness and accuracy needful for purposes of instruction, and which may be better exhibited by a good lithographic reproduction of life-size paintings in water-colors. This is more particularly true of photographs like those of Dr. Fox, in which the representations are, as a rule, much less than life-size, and the individual lesions correspondingly small. Indeed, the two best plates in the above list are the two which approach most nearly to life-size; namely, those representing seborrhœa and erythematous eczema. In many of the others the special characteristics of the separate lesions are not exhibited with sufficient distinctness to be apparent, and the small size of the photographs also renders the proper application of color almost an impossibility. The accompanying text furnishes a concise account of the various diseases, together with directions for treatment.

¹ A more complete account of the explorations which furnish the basis of this report may be obtained from the *Boston Herald*, November, 1886, also from reprint from the *Johns Hopkins University Circulars*, Vol. I, No. 49, Baltimore, May, 1886, p. 89.

Parts three and four contain examples of eczema rubrum et squamosum, squamous eczema, intertriginous eczema, facial eczema in children, eczema of the bearded face in adults, scyris non parasitica, trichophytosis barbe, squamous eczema of the palm of the hand, squamous syphilide of the sole of the foot, dermatitis exfoliativa, and psoriasis guttata. They are admirable photographs, and give good general pictures of the diseases represented. The effect produced, however, resembles somewhat that of seeing a patient at such a distance, that, although the general appearance of things may enable an expert to make a diagnosis, the nicer distinctions of form and color necessary to a decision in doubtful cases are not obvious. As in the plates contained in the first two parts, the best representations are those which are the nearest to life-size.

G. H. T.

The Vermont Asylum for the Insane. Its Annals for Fifty Years. Brattleboro: Printed by Hildreth & Fales. 1887.

This handsomely printed volume of three hundred pages has been carefully compiled from old asylum reports and other sources by the present superintendent, Dr. Joseph Draper.

The period of time covered embraces the most important events in the history of lunacy, and a continuous chronicle like this is valuable for purposes of historical reference apart from its value as a history of the foundation and development of a great institution of which Vermont may well be proud.

It appears that Mrs. Marsh, who died in 1834, appreciated the needs of the insane, saying that "nobody cared for the poor insane; they were neglected and shifted about, and she wanted to provide a home for them." She accordingly left ten thousand dollars in her will which was to be used to erect and support an insane hospital.

In 1835 the asylum was incorporated, there being at that time but ten other institutions of any size devoted to the care of the insane in the United States. But three of these were in New England; namely, the McLean Asylum, the Hartford Retreat, and the State Lunatic Asylum at Worcester.

On the 12th of December, 1836, the first patient was received, and thirty-four were remaining at the end of the first year. From this small beginning the asylum has gone steadily and prosperously on, until at the date of its report in 1886 it was able to accommodate four hundred and fifty patients, and owned property valued at upward of four hundred thousand dollars.

Practical Microscopy; A Course of Normal Histology for Students and Practitioners of Medicine. New York: WILLIAM WOOD & Co. 1887. Svo. p. 217.

Miller's Microscopy does not differ essentially from other elementary treatises on histology intended for the use of medical students. It gives a brief account of the microscope and methods of making sections, etc. The greater part of the work is devoted to histology, the successive sections take up tissues and organs in the usual order, and in each case there is first given a brief general description and then directions for practical demonstration. The illustrations are nearly all original, being photo-engravings from the author's own pen drawings, the descriptions and directions are brief and in some respects good. We wish it were

possible to commend the work more liberally, for the author has evidently worked out the subject for himself, and is more than a mere compiler. Such an effort to be fresh and independent, deserves recognition and acknowledgment, unfortunately we are deterred from giving the praise it would be pleasant to bestow, because the standard of accuracy followed in this work is much lower than ought to be the case in a scientific text-book. Take, for instance, diagrams, Figures 69, 85 and 87, the first is intended to show the structure of the lungs, the second that of the kidney, the third that of the bloodvessels in the kidney; they are all three very misleading. The enlargement of the air-passages in the lungs is fundamentally different in nature from the arrangement shown in the figure. Figure 85 is a diagram showing the plan of structure of the human kidney. It is grossly inaccurate; the shape of the pelvis is imagined, and the medullary rays widen toward the outside; there are large spaces in the cortex without any rays at all. The cortical columns there represented have no existence anatomically, and inasmuch as it is especially characteristic of the medullary regions to contain no Malpighian capsules, it is curious to find them shown there in Dr. Miller's figure. Figure 87 purports to be after Ludwig's well-known figure in Stricker's handbook (Figure 150, page 500 of German edition), but of this it is a mere travesty.

Again, in Figure 121, representing a section of the spinal column, the neuroglia of the posterior horn is designated as the root of the nerve, and the root itself is not represented. The figures drawn from preparations, though better than the diagrams, leave a great deal to be desired; thus, in Figure 122 of the spinal cord, the characteristic and important differences in size and distribution of the nerve-fibres is not shown. In Figure 126, a section of the cerebellum represents the Purkinje's cells and their branches as quite different from the actuality. In some cases, as, for instance, Figure 53, the author has not drawn the cells according to the preparation, but like imbricated scales, as is evident at a glance at the cells above and below the layer of prickly-cells. Within the limits of accuracy which satisfy our author, he renders his descriptions and directions succinct and clear; but even in these respects his work ranks below Stöhr's "Histology," which still remains the best short manual known to us in any language.

A Hand-Book on Diseases of the Skin with Especial Reference to Diagnosis and Treatment. By ROBERT LITTLE, A.M., M.D., Cantab. F.R.C.P., London. London: Longmans, Green & Co., 1887.

This is an excellent little book and one well adapted for its purpose, that of giving a short account of the main points in the diagnosis and treatment of diseases of the skin. The style is good, the differential diagnoses well-put and the directions for treatment sensible. It is a "hand-book" to be recommended.

G. H. T.

— Mr. T. B. Curling whose name is well known in connection with his work on the Testis and Rectum, died at Cannes on March 4th. Perhaps the most important of his original observations was the discovery of the association of ulcers of the duodenum with burnus on the skin.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, MARCH 22, 1888.

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HYPERTROPHY OF THE HEART CONSECUTIVE TO NERVE LESIONS.

POTAIN, in a recent clinical lecture, reported in the *Semaine Médicale*, gives the details of several cases of hypertrophy of the heart following painful lesions of the brachial plexus. One of the patients was a soldier, whose left arm had been amputated for an injury received in the late Franco-Prussian War. This patient long suffered from pain in the stump, from numbness and contracture. A neuroma developed over the median and ulnar nerves; the pain and other morbid symptoms were traced to this. There had long been palpitations of the heart and other disturbances of this organ; the heart was also found to be markedly hypertrophied. The precordial dullness measured 160 square centimeters, and the apex-beat was found in the sixth interspace; all signs of valvular lesion and of kidney trouble were wanting. Extirpation of the neuroma for a time brought complete alleviation of all the morbid nerve-phenomena, with removal of the cardiac disorders; afterwards there was a return of the old troubles, which eventually disappeared after several *séances* of galvanization of the brachial plexus.

Another case was that of an officer who had been wounded in battle by a shell, an accident which necessitated amputation of the left arm. A neuroma developed in the stump, attended with painful irradiations and a notable hypertrophy of the heart. Resection of the tumor, a course of treatment by the bromides, and a season spent at Bagnères resulted in a complete cure.

A similar case appears in the reports of the Hôpital Necker for 1881, and Lasèque, in his treatise on reflex cardiopathies of brachial origin, published in 1883, reports the case of a patient of Dr. Caizergues, of Montpellier, who had brachial neuralgia and cardiac hypertrophy consecutive to a neuroma of the left arm; amputation of the tumor restored the patient to health. Potain quotes from Dr. Weir Mitchell a similar case following a gun-shot wound, in which the ulnar nerve was involved. Instances of a like nature seem now to be sufficiently numerous.

Potain, after considering many possible explanations, concludes that the mechanism of the hypertrophy is as follows: the reflex irritation, starting from the brachial plexus, determines a diminution of resistance in the walls of the heart, which passively gives way during diastole. The heart undergoes constant distension and hypertrophies in consequence of the extra effort required to expel the contents, which are now spread over a larger surface than natural.

The prognosis may be regarded as favorable, all the inconvenience resulting from the hypertrophy, and even every trace of hypertrophy itself disappearing with removal or suspension of the distant source of irritation.

ANTIPYRINE IN THE TREATMENT OF CHOREA.

LEGROUX has communicated to the Academy of Medicine, Paris, the results of his treatment of chorea by antipyrine. He claims remarkable success, affirming that by the administration of antipyrine he has been able to reduce to a period of from one to three weeks (many of his cases getting well in a week), the duration of a disease which ordinarily lasts from sixty to ninety days.

His treatment is as follows: One gramme (fifteen grains) of antipyrine is dissolved in twenty grammes (five drachms) of syrup of bitter orange peel, and the whole is administered at one dose. Three such doses are given during the twenty-four hours. He considers it perfectly safe to give this dose to a young child, and all of Legroux's patients are now treated in this way.

Legroux believes that antipyrine acts "by slowing the oxidations in the nerve-centres, moderating nervous excitability, and enhancing the elementary nutrition." By its sedative action on the spinal cord, it has proved of use in the convulsions of strychninism, and recently Lemoine has shown that some cases of epilepsy have been markedly benefitted by antipyrine.

AN ENGLISH JUDGE'S IDEAS OF INSANITY.

DR. MERCIER reports in the *Lancet* of March 3d an extraordinary case of judicial obtuseness or perverseness: A young epileptic blew out his sister's brains with a discharge from a double-barrelled gun, and slightly wounded himself with two shots from the same gun. He then threw himself down two flights of stairs and into a fireplace. On application of his friends, two medical men were called to examine him, of whom one was the physician and superintendent of an insane asylum, and they reported that the young man was undoubtedly insane. The counsel for the crown declined to call the two medical witnesses, and when they were put on the witness-stand by the prisoner's counsel, the judge refused to allow them to state their qualifications as medical experts, and even declined to allow them to give their opinions as to the

soundness or unsoundness of mind of the youth. The judge would permit them to state only facts which they had observed, and, as they could not remember their exact conversation verbally with the prisoner, they were not permitted to place before the jury any indication as to their opinion of the case. The prosecuting counsel was strongly condemnatory of the prisoner in his speech, and the judge, in his summing up, even more so; but the jury, although not allowed to hear expert evidence, brought in a verdict of insanity.

In speaking of his countrymen, a distinguished diagnostician in London has called primary mental deterioration the "judge's disease." The first ruling in the present case was that the medical men could testify to only facts, and not to opinions, as they were called by the counsel for the defence, and not by the crown. It was also ruled that the prisoner was sane if he knew the nature and quality of the act that he committed, and understood that it was wrong, and that a verdict of "guilty, but insane," could not be returned unless the jury found that the prisoner, at the time of the crime, was suffering from a delusion such that if the facts had been as he deludedly believed them to be, he could legally have committed the act for which he was tried.

A demented epileptic of twenty-one commits murder because he has been treated so badly by "that beast, his sister Constance, that he must put an end to her life by shooting," to use his own words, and then tries to kill himself, knowing that the penalty for murder is hanging. In a note, found in his pocket, he says: "Good-by to all, hoping you will all have a happy time of it. Good-by, dear father and mother." The only complaints made against his sister were that she had not given him a newspaper when he asked for it, and that she had passed him in the street without speaking to him.

Fortunately, the jury could not doubt such evident marks of insanity, even without expert testimony, in spite of the judge and the counsel for the government. Even the short delay in giving their verdict was caused by a discussion whether or not to return to the court-room and demand to hear the opinion of the physicians as to the sanity of the prisoner.

THE EXECUTION OF CRIMINALS.

At a meeting of the New York Medico-Legal Society, held March 14th, a committee, consisting of Drs. R. Ogden Doremus, J. Mount Bleyer, Charles F. Stillman, Messrs. Clark Bell and Frank H. Ingram, made a report in regard to the best method of executing criminals which reaches quite different conclusions from that of the Society of Medical Jurisprudence noticed in our last issue. A portion of the report was as follows:

That the provisions of our Constitution "that cruel and inhuman punishment shall not be inflicted" should be enforced by appropriate legislation, and all

existing statutes repugnant to either its letter or spirit be repealed. That hanging should be abolished as cruel and contrary to the public sense of our civilization. That as a substitute for the present death penalty, we would recommend: (a) death by the electric current; or (b) death by hypodermic or other injection of poison; or (c) death by carbonic oxide gas injected into a small room in each jail, as recommended by Prof. John H. Packard (*Medico-Legal Papers*, Vol. III, p. 521), giving our preference to the first, or death by the electric current. That in our judgment executions should be private, and not public. That if it were possible to prevent the publication of details of executions in the public press, it would be a public good. That the bodies of criminals should be delivered to the medical schools, after execution, for dissection.

This report, which was adopted by the Society, is intended to be limited to the subjects embraced in the report now before the Legislature, and it expresses the opinion that the commissioners who prepared the latter are entitled to the thanks of the Legislature and the public for the able and exhaustive labor they have bestowed upon the matter.

MEDICAL NOTES.

— A Committee of the Trustees of the Johns Hopkins Hospital, at Baltimore, is to visit Boston and New York next week in order to inspect the hospitals of those cities.

NEW YORK.

— The Legislature has appropriated \$185,000 for the erection of a new State asylum for insane criminals, which is to be located near Fishkill village, in Dutchess County, and will have in connection with it a farm of 246 acres. In addition to a central administration building, there will be six general pavilions, two infirmaries, and two isolated buildings planned especially for the most dangerous and violent class of cases. The plans for the various buildings, which will be of brick, with stone foundations, have been prepared by Capitol Commissioner Perry, of Albany, and it is designed to make the hospital a model institution of its kind.

— In the Section on Public Health, Hygiene, and State Medicine of the Academy of Medicine, on March 16th, Dr. C. L. Dana read a paper on "The Influence of Immigration on the Increase of Mental and Nervous Diseases." In 1880, he said, the percentage of our foreign-born population was over one-eighth of the whole nation. About one-quarter of the persons who are of an age susceptible of insanity are foreign born, and such persons furnish a little over one-quarter of our insane. Evidence exists showing a greater proportional mortality from nervous diseases in large cities among foreign-born adults than among natives. But, taking the entire population, the death-rate from all nervous diseases is much greater among natives, owing to the prevalence of such diseases

among children; while the direct influence of immigration in increasing nervous diseases is not great. Dr. Dana pointed out that implicit reliance could not be placed on the statistics which have been gathered in regard to insanity in this country, and his studies had led him to believe that it was wiser to treat the subject from a conservative point of view. The conclusion that he arrived at was that immigration tends to increase insanity indirectly through the influence of social life and through the introduction of poor nervous stock.

—The twenty-seventh annual commencement of Bellevue Hospital Medical College was held at the Carnegie Laboratory, March 12th, when a class of 144 was graduated.

—There were eleven graduates at the College of Veterinary Surgeons, which held its commencement exercises March 13th.

—The twenty-second annual commencement of the New York College of Dentistry was held at Chickering Hall, March 10th. There were 72 graduates, and the address to the class was delivered by the Rev. Dr. Thomas Gallaudet.

—The recent blizzard caused considerable delay in the removal of two small-pox patients from different sections of the upper part of the city, and on the way to the hospital, the sleigh containing one of them was upset in a snow-bank.

Miscellany.

THE LATEST THERAPEUTIC NOVELTY.

A CASE not less instructive than amusing is, we learn from an English contemporary, about to come to legal issue in London before long. Two years ago a London doctor had on his list of patients a lady long suffering from an affection of the face and jaw, which baffled the arts of the faculty. She changed her residence from London to a provincial town, but kept herself in the hands of her London doctor by letter. Finding the ailment obstinate, and the patient somewhat hypochondriacal, the doctor wrote in the end saying he had exhausted his resources, and adding his opinion that *Tempus edax rerum* was the only remedy. Straightway the lady hied herself off to a local chemist, and applied for the specific as set forth in the letter. The attendant, it will be contended, through deliberate dishonesty, made up a bottle for which he charged 7s. 6d., and at the patient's request registered her name as a customer to whom the remedy was to be regularly supplied. She continued using and paying for the sham medicine for over a year and a-half. Coming to London for the Jubilee, she chanced to meet her former doctor, who was astonished to find himself gratefully thanked for his invaluable prescription. He wrote at once for an explanation, and the next stage of the business began with the disappearance of the assistant, and the denial of any responsibility of the chemist, but, nevertheless, the case stands for trial. The plaintiff, has it seems, been an invalid from her twentieth year, and has paid for medicine alone over £2,000.

VIBURNUM PRUNIFOLIUM.

Dr. ANVARD in the *Gaz. Hebdom.*, No. 34, writes of his observations regarding the action of viburnum prunifolium as follows: ¹

Three preparations of the drug are principally used, — the fluid extract, the soft extract, and the tincture.

Dr. Anvard's experiments were made with the tincture. This (one to five) can be given in doses of 100 to 150 drops in twenty-four hours. The active principle seems to be viburnin, which was first discovered by Van Hallen, but as yet it has not been experimented with. Indications for the use of viburnum in threatening abortion are the same as in the prophylaxis of the aborta. According to Anvard, the drug should not be used in the following cases:

(1) When the fetal membrane is torn and the water has been discharged. However, when during the sixth or seventh month of pregnancy there is a rupture of the membrane but there are still hopes of preventing a miscarriage, viburnum may be used.

Anvard cites a case of a young primipara, in the sixth month of whose gestation there was a rupture of the fetal membrane, and the woman had for five weeks been losing large quantities of amniotic fluid. The drug had been used all the while, and in consequence the woman was able to make a three hours' journey, and not until three hours later did she give birth to a living child.

(2) Viburnum should never be used if the fœtus is dead.

(3) When labor is well under way and the birth expected momentarily, or if a miscarriage has commenced.

(4) When the mother has a severe illness which contraindicates the causing of any delay in the birth.

Dr. Anvard cautions practitioners to abstain from using viburnum for severe after-pains until the uterus has been washed out.

In gynecology viburnum is valuable in dysmenorrhœa. It also has a highly beneficial effect on colic of the bowels accompanied by diarrhœa. Viburnum is preferable to opium in such cases for the following reasons: it is not toxic, it does not cause constipation, and its action is a more local one.

Viburnum does not seem to have any injurious effect on the stomach, and is always well borne.

Dr. Anvard advises the use of the drug in the following formula:

R Tincturæ viburni prunifolii (1 to 2).
S. — 10 drops every hour until the pain has ceased.

INDEX MEDICUS.

It is a constant source of humiliation that the "Index Medicus" is not more widely supported. The following article from the *Therapeutic Gazette*, tells the present condition of the publication.

There is no profession in which the spirit of research and of literary activity, is as strong as it is in the medical profession. Indeed, according to our thinking, it would be better for the profession if its activity was somewhat checked; at least it would be much easier for those of us whose position requires that they should keep ahead or abreast of the ever

¹ See *Therapeutic Gazette*, February 15.

oncoming tidal wave. Some little time since we made a careful estimate, by going over a volume of the "Index Medicus," and found that in round numbers about fifteen thousand doctors had written books and articles on medical subjects in the year. These doctors probably averaged three articles apiece, and if unsigned and uncatalogued editorials, etc., are counted in, probably not much less than fifty thousand articles were cast adrift upon the waters of medical publication in 1885. It is a fair estimate that one out of thirty of these articles was worth reading by a serious man, and the labor of hunting out the good pieces of timber in the vast mass of drifting wood is certainly gigantic. Indeed, it would be impossible to do the thing satisfactorily at all were it not for such publications as the "Index Medicus." Of all keys of current medical literature that have been published since the world was, on this or any other planet, the "Index Medicus" is the most complete and the most satisfactory. To the literary doctor who has once used it, it has become as necessary as the morning cup of coffee or the evening meal, without which life is a burden, and effort a despair. The number of student physicians in any place can be fairly judged by the number of subscribers to the "Index Medicus." As a matter of curiosity we append the following list of paying subscribers in and out of the United States:

MEMORANDUM SHOWING THE NUMBER OF PAYING SUBSCRIBERS TO THE "INDEX MEDICUS."

United States.	Foreign.
California	3 Argentine Republic
Connecticut	3 Australia
District of Columbia	14 Belgium
Georgia	2 Canada
Illinois	8 Denmark
Indiana	1 England
Louisiana	3 France
Maine	3 Germany
Maryland	13 Holland
Massachusetts	34 Ireland
Michigan	7 Italy
Minnesota	2 Japan
Missouri	5 Peru
Nebraska	1 Russia
New Jersey	7 Scotland
New York	78 Switzerland
Ohio	6 Turkey
Pennsylvania	29
Rhode Island	7
South Carolina	2
Vermont	1
Virginia	2
Wisconsin	2
	240
	Total, United States and Foreign 363

In addition to these, 100 copies are taken for distribution to the medical officers of the army at special rate, making 163 total.

In the home list it is curious to remark that New York has twice as many subscribers as Pennsylvania, and that in Massachusetts, Maryland, and the District of Columbia, a reading physician does not seem to be a very scarce animal. In the great State of Illinois, with the fermenting mass of commercial activity like Chicago, but eight doctors have had pride enough in their country's publication, interest enough in medical science, or a love of reading sufficient to warrant their spending ten dollars a year in sustaining the most illustrious medical publication in the United States, and nurturing their own souls and bodies by medical culture. Worse than this, a rich State like Kentucky, with cities as large as Louisville, does not even seem to require one copy of the publication.

The receipts from the "Index Medicus" to the publisher, are not nearly enough to cover the cost of so extensive a publication. Mr. Davis deserves the

very warmest thanks of the profession, but how long he will continue to carry this burden, we do not know. It is most extraordinary that he does not in this matter receive better backing. The thanks of the profession are good, but the thanks which do not express themselves in bank-notes are only an exemplification of the old proverb, "Soft words butter no parsnips."

SPASMUS NUTANS IN DENTITION.

Dr. E. TORDENS' out-patient class in Brussels has been afforded the opportunity, as we learn from the *Lancet*, of seeing a case of spasmus nutans, or *tic de salaam*. This is not a very common affection, but several examples are mentioned by Henech in his "Lectures on Children's Diseases." The Brussels case was that of a little girl of ten months, still at the breast. She had been very healthy, and was fairly robust. A month previously to her admission the mother had noticed a slight but nearly constant nodding motion of the head. When examined for the first time the chief motion was rotatory; the eyes also rolled from side to side, especially when the head was held. There were two teeth. The child was treated with oxide of zinc and bromide of potassium. The next time the patient was brought, a fortnight later, but little improvement could be detected, and a nodding motion was added to the lateral oscillation. Afterwards, however, improvement commenced, and at the end of six weeks from the first visit the child was quite well. By that time she had cut two new teeth. There could be little doubt that the affection was a complication, though a rare one, of dentition.

Correspondence.

THE COUNTRY PHYSICIAN'S ARMAMENTARIUM.

[THE following letter from a successful young physician in a prosperous country town, though not originally intended for publication, is published as it was written, in the hope that such a course may prove the best means of stimulating others to take up the subject as suggested by the writer and thus effect a profitable exchange of experiences.—Ed.]

March 12, 1888.

MR. EDITOR,—Since going into practice, my attention has been drawn a good deal to the matter of outfit: first, supplies at my office, and second, the contents of my bag and buggy.

As the success of a country physician in a given case at a given visit, depends, oftentimes, less upon his knowledge than upon the medicines and materials which he has with him to use upon the spot, it occurred to me that the matter of the physician's *armamentarium* might be an interesting and valuable one to discuss in the columns of the *BOSTON MEDICAL AND SURGICAL JOURNAL*. It would be especially so if the hints and customs of a large number of physicians could be drawn out. Every physician carries some particular preparation which he finds more convenient and suitable for a larger number of uses than other preparations of the same class. Likewise, others have some particular way of carrying or stowing away this or that instrument. Another selects his instruments in such a way that each one will serve for several purposes, on occasion. Others neglect to carry any instruments, thereby causing unnecessary trips over the road.

I know several practitioners who carry only a medicine case, with no accommodations for instruments. I find it of much advantage to go well provided; to be able to give ether, apply an antiseptic dressing, extract a tooth, give an enema, etc., at a moment's notice when on the road. Were I less well-equipped, I should often have to make an extra trip, or deprive the patient of appropriate treatment.

This matter, of course, is of most consequence to country physicians, but cannot fail to have some bearing on city practice as well. It is, to a certain extent, a matter of

whims and perhaps no two practitioners would exactly agree as to the proper outfit. It is nevertheless important not only to the patient, but for the convenience of the practitioner. I write, merely to offer you the suggestion, so that you may, (if you think it wise and practicable), take some measures to draw attention to the subject in the JOURNAL, and if possible, to do so in such a way as to invite hints and individual contributions, which would be of value to many a country doctor.

Respectfully yours,

M.D.

REPORTED MORTALITY FOR THE WEEK ENDING MARCH 10, 1888.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diarrhoeal Diseases.	Diph. & Croup.	Scarlet Fever.
New York	1,481,920	799	317	15.60	24.18	2.86	6.76	2.47
Philadelphia	993,801	379	113	8.84	11.18	1.04	4.64	.52
Brooklyn	745,108	—	—	—	—	—	—	—
Chicago	725,000	—	—	—	—	—	—	—
St. Louis	420,000	—	—	—	—	—	—	—
Baltimore	417,000	—	—	—	—	—	—	—
Boston	400,000	203	58	10.29	20.09	.98	5.88	1.47
New Orleans	242,750	—	—	—	—	—	—	—
Buffalo	225,000	—	—	—	—	—	—	—
Washington	210,000	132	47	14.14	22.80	—	—	.76
Pittsburgh	210,000	79	31	7.62	21.59	—	3.81	—
Montreal	186,257	—	—	—	—	—	—	—
Milwaukee	170,000	57	29	10.50	5.25	1.27	1.27	1.27
Providence	121,000	—	—	—	—	—	—	—
Richmond	100,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,000	15	4	20.00	13.33	6.66	—	—
Charleston	60,145	—	—	—	—	—	—	—
Portland	40,000	16	4	—	12.50	—	—	—
Worcester	68,383	26	9	23.10	23.10	—	7.70	—
Lowell	64,051	34	13	14.70	36.46	—	5.88	—
Cambridge	59,640	33	10	9.09	9.09	—	3.03	6.06
Fall River	56,863	26	9	15.40	11.55	—	11.55	—
Lynn	45,861	20	6	20.00	10.00	—	15.00	—
Lawrence	38,825	23	8	17.40	17.40	—	4.35	4.35
Springfield	37,577	20	4	20.00	30.00	—	15.00	—
New Bedford	33,393	21	7	18.04	14.28	—	14.28	4.76
Somerville	29,622	14	2	21.42	33.70	—	—	7.14
Salem	28,084	20	6	15.00	10.00	—	—	10.00
Holyoke	27,894	11	3	—	36.36	—	—	—
Chelsea	25,709	16	2	6.25	—	—	—	6.25
Taunton	23,674	14	3	7.14	28.56	—	—	—
Haverhill	21,795	12	6	25.00	—	8.33	8.33	—
Gloucester	21,713	4	1	25.00	—	—	—	25.00
Brockton	20,783	4	3	50.00	—	—	50.00	—
Newton	19,759	8	1	—	25.00	—	—	—
Malden	16,407	—	—	—	—	—	—	—
Fitchburg	15,375	9	2	—	—	—	—	—
Waltham	14,609	2	0	—	—	—	—	—
Newburyport	13,716	5	1	—	40.00	—	—	—
Northampton	12,896	3	1	33.33	—	—	—	33.33

Deaths reported 2,003: under five years of age 700; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 261, acute lung diseases 379, consumption 288, diphtheria and croup 108, scarlet fever 36, diarrhoeal diseases 31, measles 21, cerebro-spinal meningitis 20, typhoid fever 17, whooping-cough 9, erysipelas nine, malarial fever five, small-pox three, puerperal fever two. From measles, Washington 16, New York three, Milwaukee two. From cerebro-spinal meningitis, New York six, Philadelphia five, Worcester two, Boston, Washington, Nashville, Fall River, Lynn, Springfield and Taunton one each. From typhoid fever, Philadelphia five, Lowell three, New York and Lawrence two each, Washington, Pittsburgh, Milwaukee, Salem and Haverhill one each. From whooping-cough, New York three, Boston and Pittsburgh two each, Nashville and Somerville one each. From erysipelas, New York six, Nashville, Worcester and Somerville one each. From malarial fever New York five. From small-pox, New York two, Boston one. From puerperal fever, Philadelphia two.

Cases reported in Boston: Measles 11, scarlet fever 34, diphtheria 23, small-pox two, and typhoid fever two. In Milwaukee, scarlet fever 19, diphtheria 10. In Nashville, small-pox two. In Portland, measles two, diphtheria one.

In 19 cities and greater towns of Massachusetts with an estimated population of 1,047,570, the total death-rate for the week was 24.37 against 24.03 and 23.20 for the previous two weeks.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending February 18th, the death-rate was 20.9. Deaths reported 3,764: infants under one year of age 797; acute diseases of the respiratory organs (London) 487, whooping-cough 170, scarlet fever 61, fevers 40, measles 38, diphtheria 35, diarrhoea 24, small-pox (Sheffield) 30, Bristol and Leeds two each, London, Nottingham and Manchester one each.) 37.

The death-rates ranged from 14.1 in Birkenhead to 29.4 in Wolverhampton: Birmingham 20.5; Bradford 15.4; Hull 16.5; Leeds 22.3; Leicester 19.2; Liverpool 21.8; London 20.6; Manchester 29.3; Newcastle-on-Tyne 20.0; Nottingham 18.8; Plymouth 24.2; Sheffield 24.7.

In Edinburgh 21.1; Glasgow 26.0; Dublin 25.9.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending February 25th, the death-rate was 21.6. Deaths reported 3,888: infants under one year of age 785; whooping-cough 173, scarlet fever 70, fever 43, diphtheria 40, measles 46, small-pox (Sheffield) 30, Manchester five, Liverpool, Oldham, Blackburn and Leeds one each.) 37.

The death-rates ranged from 13.0 in Cardiff to 32.2 in Plymouth; Birmingham 20.7; Blackburn 28.5; Bradford 17.0; Halifax 18.2; Hull 16.8; Leeds 18.6; Leicester 18.5; Liverpool 22.7; London 21.6; Manchester 25.4; Norwich 16.7; Nottingham 18.5; Sheffield 25.0.

In Edinburgh 21.1; Glasgow 27.0; Dublin 28.4.

The meteorological record for the week ending March 10, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, Mar. 10, 1888.	Barom- eter.	Thermometer.				Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration Hrs. & Min.	Amount in Inches.
Sunday, ... 4	29.88	22.0	32.0	15.0	65.0	47.0	66.0	59.0	N.W.	W.	N.W.	24	24	20	C.	C.	C.		
Monday, ... 5	29.79	23.0	32.0	14.0	67.0	48.0	75.0	63.0	N.W.	W.	N.W.	12	10	8	F.	C.	C.		
Tuesday, ... 6	29.81	21.0	31.0	14.0	62.0	72.0	79.0	71.0	N.W.	N.W.	N.W.	14	12	12	C.	C.	C.		
Wednes., ... 7	29.86	21.0	29.0	13.0	70.0	47.0	66.0	61.0	W.	W.	W.	12	24	18	C.	F.	C.		
Thursday, ... 8	29.86	31.0	38.0	19.0	65.0	42.0	71.0	60.0	W.	W.	N.W.	12	28	24	F.	O.	O.		
Friday, ... 9	30.25	36.0	45.0	30.0	74.0	47.0	68.0	63.0	W.	W.	W.	21	12	12	O.	O.	C.		
Saturday, ... 10	30.50	34.0	39.0	31.0	71.0	77.0	85.0	78.0	N.W.	N.E.	E.	12	8	6	O.	O.	C.		
Mean, the Week.	29.993	26.9	35.0	19.0				65.0											

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 10, 1888, TO MARCH 16, 1888.

STERNBERG, G. M., major and surgeon. Ordered to proceed to Brunswick, Ga., on official business, and upon completion of same will return to his proper station. S. O. 57, A. G. O., March 10, 1888.

KEAN, JEFFERSON R., first lieutenant and assistant surgeon. Relieved from duty at Fort Sill, Ind. Ty., and ordered for duty at Fort Robinson, Neb. S. O. 56, A. G. O., March 9, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING MARCH 17, 1888.

BUSH, W. H., passed assistant surgeon. Detached from Navy Yard, New York, and to Naval Hospital, Philadelphia, Pa.

STEELE, J. M., passed assistant surgeon. Detached from Naval Hospital, Philadelphia, and to Coast Survey Steamer "Bache."

OVERLY, A. S., medical inspector. Detached from Navy Yard, Portsmouth, N. H., and wait orders.

DEBOIS, F. L., surgeon. Ordered to the Navy Yard, Portsmouth, N. H.

KEENY, JAMES, assistant surgeon. Ordered to the receiving-ship "Minnesota."

DEANE, C. W., passed assistant surgeon. Detached from Marine Rendezvous, San Francisco, and to Coast Survey Steamer "McArthur."

AUZAL, E. W., assistant surgeon. Detached from Coast Survey Steamer "McArthur" and to Marine Rendezvous, San Francisco.

BIDDLE, CLEMENT, passed assistant surgeon. Ordered to Naval Academy, Annapolis, Md.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE WEEK ENDED MARCH 10, 1888.

HUTTON, W. H. H., surgeon. To proceed to Brunswick, Ga., on special duty, March 5, 1888. Detailed as president of Board to select site for Gulf Quarantine Station, March 10, 1888.

CARTER, H. R., passed assistant surgeon. Detailed as recorder of Board to select site for Gulf Quarantine Station. March 10, 1888.

WARDIN, EUGENE, passed assistant surgeon. Granted leave of absence for thirty days. March 8, 1888.

BRATTON, W. D., assistant surgeon. Ordered to examination for promotion. March 7, 1888.

SOCIETY NOTICES.

NORFOLK DISTRICT MEDICAL SOCIETY. — A meeting for Scientific Improvement will be held at the Hall of the Roxbury City Guard, 67 Warren Street, Roxbury, March 27, 1888, at 7.45 P. M. Communications: "Temperament and Diathesis in Disease," F. B. Stevenson, M.D. "A Case of Appendicitis with Unusual Symptoms," C. A. Cheever, M.D.

S. ALLEN POTTER, M.D., Secretary.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A Regular Meeting of the Society will be held Monday, March 26th, at quarter of eight, P. M. Reader, Dr. F. C. Knapp. Subject, "Nervous Affections following Injury — Concussion of Spine, Railway Spine, and Railway Brain." Dr. J. J. Putnam will show two cases; Dr. F. C. Shattuck will show the Plasmodium Malariae; Dr. H. C. Ernst will show the Typhoid Bacillus and Sherrin's Cancer Bacillus.

F. B. HARRINGTON, Secretary.

CARTWRIGHT LECTURES FOR 1888.

The Cartwright Lectures of the Alumni Association of the College of Physicians and Surgeons of New York, for 1888, will be delivered at the College by Prof. Wm. H. Welch, of Johns Hopkins University, on Thursday evenings, March 29th, April 5th and 12th, at 8.30 P. M. The subject will be the "General Pathology of Fever."

DEATH.

Died in Dorchester, Mass., March 15, 1888, Francis Henry Mullen, M.D., M.M.S.S.

BOOKS AND PAMPHLETS RECEIVED.

Twenty-Ninth Annual Report of the Inspector of Milk and Veal, from January 1, 1887, to December 31, 1887. 1888.

Diseases of Man; Data of Their Nomenclature, Classification and Genesis. By John W. S. Gouley, M.D., New York: J. H. Vall & Co. 1898.

Directory of the Living Graduates of the Medical Department of Yale University. New Haven, Conn. 1888.

Prescription Writing. Designed for the Use of Medical Students who have never studied Latin. By Frederic Henry Gerish, M.D., etc. Seventh and Revised edition. Portland, Me. Loring, Short & Harmon. Philadelphia: J. B. Lippincott & Co. 1888.

Physicians' and Students' Ready Reference Series. Obstetric Synopsis. By John S. Stewart, M.D. Illustrated. Philadelphia: F. A. Davis. 1888.

Cyclopaedia of Obstetrics and Gynecology, Volume V. Gynecological Diagnosis, General Gynecological Therapeutics. By R. Chobak, M.D. Electricity in Gynecology and Obstetrics. By Egbert H. Graudin, M.D.

Vol. VII. A Handbook of General and Operative Gynecology. By Dr. B. A. Hegar and Dr. R. Kaltenbach. In two volumes; Vol. II. Operations in the Tubes, Uterus, Broad Ligaments, Round Ligaments, and Vaginal Operations in Urinary Fistulae. Prolapse Operations. Operations on the Vulva and Perineum.

Vol. VIII. Diseases of the Ovaries. By Dr. R. Olshausen. With 36 fine new engravings.

Vol. IX. Diseases of the Female Mammary Glands. By Th. Billroth, M.D., and New Growths of the Uterus, by A. Gusserow, M.D.

Vol. XI. Sterility: Developmental Anomalies of the Uterus. By P. Muller, M.D., and The Menopause, by E. Börner, M.D.

Vol. XII. Diseases of the Tubes, Ligaments, Pelvic Peritoneum and Pelvic Cellular Tissue. Extra-Uterine Pregnancy. By L. Baril, M.D. Diseases of the External Female Genitals, Lacerations of the Perineum. By P. Swift, M.D. With one chromo, lithograph plate and eighty-eight fine wood engravings. Edited by Egbert H. Graudin, M.D. New York: William Wood & Co. 1887.

Original Articles.

NOTES ON COMPLICATIONS MET WITH IN CASES OF STRANGULATED HERNIA.¹

BY A. T. CABOT, A. M., M. D.
Surgeon at the Massachusetts General Hospital and at the Children's Hospital.

It is the object of this paper to present an account of some of the complications met by the writer in the operation of herniotomy.

Some of these complicating circumstances have merely a scientific interest, while others introducing special danger, require operative measures for their relief and demand therefore, the consideration of surgeons.

HYDROCELE OF THE HERNIAL SAC.

J. L., a very stout laboring man of about forty, entered the Massachusetts General Hospital, December 23, 1885. He gave an indefinite history of an enlargement, as he supposed, of the left testicle coming on slowly in the past five years. He did not pay much attention to it till one month before entrance, when it began to be inconveniently large. One week ago, after a blow on the scrotum from the handle of a switch, it increased rapidly in size, and caused a severe dragging pain along the cord and up into the groin.

At entrance he had a tense elastic swelling somewhat larger than two fists, filling the left side of the scrotum, and extending up into the inguinal canal. The penis was almost wholly concealed. The tumor was not translucent.

An aspirating needle was introduced, and between one and two pints of reddish fluid were withdrawn. This only reduced the tumor about one-third, leaving still an elastic, but not tense, swelling extending from the bottom of the scrotum up into the inguinal ring. The fluid rapidly reaccumulated in the sac, and in about a fortnight the patient was etherized and an incision was made into the scrotum. A good quantity of bloody serum like that withdrawn by the aspirating needle was evacuated, and then the mass filling the scrotum behind was seen to be an omental hernia much altered in its appearance by oedema, and studded here and there with spots of ecchymosis. The omentum was tied with silk at the constricted part in the neck of the sac and then cut off, the pedicle being returned to the abdomen. The ring was brought together as well as possible with sutures, a drainage tube was introduced into the old hernial sac, and the wound was closed around it.

Convalescence was slow, and was retarded by an abscess in the scrotum, but the wound finally healed solidly.

The condition which was found in this case is a rare one. Dr. McArdle and Dr. Kolpinski, in a recent paper,² have been able to find but twenty-nine authenticated cases of hydrocele of the hernial sac. They find that the accumulation of fluid may take place in a sac which at the time has no abdominal contents, but that the more common condition is an irreducible epiplocele with adhesions about the neck of the sac. Occasionally a small knuckle of intestine may partly protrude. Usually the antecedent history of hernia makes the diagnosis tolerably clear. In our case the

extremely meagre history which the closest questioning could not amplify, left us in doubt as to the nature of the previous swelling; and the recent injury with the bloody fluid led us to think strongly of an hæmatocele in an old hydrocele sac.

FEMORAL HERNIA WITH A DOUBLE SAC.

This patient is also interesting for having undergone two herniotomies within four months.

On March 24, 1887, Kate L., aged thirty-four, entered the Massachusetts General Hospital with a strangulated hernia at the left femoral ring.

She was operated upon by Dr. John H. Mans. Upon cutting down upon the hernia he opened a sac containing about two ounces of serum. During incision of the constriction a second sac lying against and covering the ring was punctured, and through the opening a probe passed into the abdominal cavity through the ring. This inner sac was pushed into the abdomen, and the ring was closed with catgut sutures.

Convalescence was somewhat retarded by an attack of erysipelas, but she was discharged well in less than a month.

On July 25, 1887, she again entered the hospital with a strangulated hernia at the same ring as before. She had worn a spica bandage for two months after leaving the hospital but then discontinued it. One week ago she again noticed a bunch in the groin, and twelve hours before entrance, while stooping to pick up something, she felt a "giving way" in that side. She soon began to suffer from abdominal pain and to vomit.

The tumor was about the size of a hen's egg. She was etherized, and gentle taxis proving unavailing, herniotomy was done. The dissection down to the sac was somewhat obscured by the cicatrix and adhesions following the previous operation. A sac containing about two ounces of serum was opened, and at the bottom of it was a bulging mulberry-colored mass, adherent around the ring. At first this was thought to be an adherent coil of intestine, but it was presently shown to be a second sac. This was now opened, and at the bottom of it was a little strangulated bit of intestine no larger than the end of the thumb. The constriction was divided, and this was returned to the abdomen. The neck of the inner sac was pulled down and tied, and also stitched to the sides of the ring. The outer sac was stitched together with the skin.

The recovery was uninterrupted. The bowels relieved themselves of flatus about twelve hours after the operation, and the patient went home on the seventeenth day.

INGUINAL HERNIA WITH HOUR-GLASS SAC.

J. M., aged twenty-nine, entered the hospital July 21, 1887. He had ruptured himself on the right side while riding two-and-a-half years before. The hernia was reduced by taxis, and a truss was worn. Three months ago the hernia came down again, and after a few days was reduced by recumbency and the application of ice.

Two days before entrance he carried a heavy valise some distance. The next day he felt some pain in the right iliac region, and vomited twice that evening. When seen at the hospital the right side of his scrotum was occupied by a soft elastic swelling as large as an

¹ Read before the Surgical Section of the Suffolk District Medical Society, Feb. 1, 1888.

² Phil. Med. News, Jan. 9, 1886.

orange. Over the inguinal ring and separated from the scrotal swelling by a well-defined constriction, was a hard slightly elastic mass about the size of a hen's egg. This was very sensitive to pressure. The patient was etherized, and taxis was tried without success. An incision was then made over the upper inguinal swelling. The sac was opened and found to contain a little knuckle of intestine close to the ring, with a mass of omentum behind and below it. This omentum was connected by a narrow band with a larger mass below in the scrotum. The constriction of the sac between these two parts was so narrow that it had to be incised before the hernial contents of the scrotum could be drawn out and passed on into the abdominal cavity.

This constriction may have represented the neck of the original sac, and when the second protrusion took place it pushed the whole of the old hernia before it and formed a new sac for itself.

Van Buren gives a different explanation.⁸ After describing a similar condition, he says:

"The constriction at the middle of the sac, which formed so prominent a feature in this case, giving it the shape of an hour-glass, seemed to me to mark the point where nature had attempted, unsuccessfully, to obliterate the communication between the tunica vaginalis proper and the tubular prolongation connecting it with the peritoneal cavity. . . . I suspect from frequent examination of the parts in the dead body, that the process of peritoneum connecting its cavity with the tunica vaginalis testis remains unobliterated more frequently than is generally supposed, and that the effort at obliteration is more marked at the *internal ring* and just above the testis, and that this circumstance explains the frequency of stricture at the internal ring, as well as the constriction observed at or below the middle of the sac."

The next three cases I propose to consider together, as they all illustrate and emphasize what I believe should be a rule of practice, and which I would state as follows: When, after the reduction of a hernia either by taxis or by herniotomy, the symptoms of strangulation or of great peritoneal irritation continue. When the patient is not soon relieved of the vomiting, pain, and tympanites, a further exploration should be made; the wound should be re-opened, and if a sufficient explanation of the symptoms is not found there, the incision should be continued upward, the abdomen should be opened, and a search should be made for the condition which is causing the trouble.

INTERNAL STRANGULATION FOLLOWING THE REDUCTION OF AN OLD INGUINAL HERNIA.

Fanny R., aged forty-eight, had long had an inguinal hernia of the left side, which gave but little trouble, being easily reduced. On January 12, 1885, the hernia came down about the size of a goose's egg, and as it did not go back readily, Dr. H. E. Marion, of Brighton, was summoned, and easily reduced it. The patient, who was of intemperate habits, was drunk at the time he saw her.

She continued to have pain in the abdomen, and two days later began to vomit. The bowels remained constipated. Dr. Marion saw her again, and on January 17th he succeeded in getting her to enter the hospital. She was at this time very feeble. The abdomen was now considerably distended and tympanitic.

The old hernial sac was empty, and was drawn in towards the ring.

With the concurrence of Dr. John Homans, it was decided to do laparotomy. The abdomen was opened in the median line below the umbilicus. Immediately, a number of coils of sloughing, black intestine were brought to view. About three feet of small intestine was thus gangrenous. A search was made down along the sloughing bowel for a twist or a band that would account for the strangulation. On account of the softened condition of the gangrenous coils, the greatest gentleness was observed in the manipulations, and the distended condition of the rest of the intestines made this search very difficult.

At last, what was thought to be a soft band around a portion of the intestines was found and separated with the fingers. The gangrenous portion was then drawn out as far as possible on the front of the abdomen and secured to the skin; it was then opened.

This operation, which was done as quickly as possible, on account of the collapsed condition of the patient, was not followed by any relief, and death ensued twelve hours later.

No thorough autopsy was allowed, but I opened up the abdominal wound, and after puncturing and collapsing a number of coils of intestine, I was able to follow the gangrenous portion down to where it was constricted by a narrow, firm band, which stretched from the bottom of the old hernial sac across to the mesentery of a neighboring intestine. This band was evidently an old adhesion which had once formed between the mesentery and the sac, and which had gradually become stretched and thickened into a firm fibrous band.

The course of events in the production of the strangulation which caused death was as follows:

The intestine came down on one side of this band and entered the old hernial sac. When reduced, it went up into the abdomen on the other side of the band. This left a small coil of intestine looped down beneath this band. The peristalsis of the bowel gradually pulled more and more through, until so much had passed through this opening as to fill it up and cause a constriction which led to the death of all of the intestine beyond.

FEMORAL HERNIA, HERNIOTOMY; INTESTINE DISPLACED FROM AN EXTERNAL SAC INTO AN INTERNAL ONE, IN WHICH IT REMAINED STRANGULATED.

Charles R. D., aged sixty-seven, had had a right femoral hernia for a number of years. It usually went back at night. On the night of December 9, 1885, it did not go up, and on the following day he had great abdominal pain, with nausea and vomiting. The patient dosed himself liberally with cathartics without result, and finally, towards evening, he sent for his physician, Dr. C. V. Bemis, who, finding taxis unavailing, sent him to the hospital.

I saw him at ten o'clock that evening. The hernial tumor was about the size of an orange, and situated over the femoral ring. The patient was feeble, with a weak pulse. Ether was given, and after a short attempt with taxis, herniotomy was done. The sac was opened, and found to contain a dark, plum-colored knuckle of intestine, another bit of bowel not discolored, and a piece of omentum.

The neck of the sac was incised, but still the hernia

⁸ Contribution to Practical Surgery, 1885.

did not go back. With the finger inside of the peritoneum, another more extensive incision was made, and then the hernial contents were returned with some difficulty. Deep stitches were taken in the neck of the sac, and superficial ones in the skin.

December 11th. The patient had comparative comfort for the rest of the night, but in the morning had considerable pain at the umbilicus. The temperature was below 99° F., and the pulse between 80 and 90.

December 12th. Still some pain, easily controlled by morphia. Vomited once or twice. Temperature 98° F. in the morning, 99° F. in the evening, pulse 90.

December 13th. Severe attack of pain in the early morning relieved by one-fifth grain of morphia. At the time of my visit, in the middle of the day, the pulse, which had risen from 90 on the previous day to 120, was almost imperceptible, and he died at two o'clock.

At the autopsy, made by Professor Fitz, a loop of intestine was found in a gangrenous condition close down to the inside of the femoral ring. It was contained in a sac composed of peritoneum.

The accompanying illustrations after Bryant, show in diagram the various ways in which a strangulation may occur in this region after the apparent reduction of a hernia.



FIG. 1.

FIG. 2.

FIG. 3.

No. 1 represents the condition when a hernia is reduced "*en masse*" or "*en bloc*"; that is, when the whole sac, with the strangulation unrelieved, is pushed back into the abdomen. This was not the condition in our case, for the bowel was distinctly put back out of the sac.

Either of the other two illustrations may represent the condition that we had.

No. 2 shows a herniated loop of intestine pushed back out of the external pouch, but still strangulated in the neck of the sac.

A consideration of the case of hour-glass contraction of the sac reported above will give an idea of how this condition of things might be brought about; for if the hernial contents were displaced from the lower sac into the upper one, and if this upper division of the sac were at the time within the abdominal wall, how easily the condition might be overlooked and left uncorrected.

The third figure represents a sac with a diverticulum just within the abdominal wall, into which the hernial contents might find their way, when reduced, out of the external sac. To which of these last two conditions our case corresponded, it is impossible to say.

This case is, further, a good example of the deceptive character of the symptoms in intestinal strangulation. On the first two days after operation, we had no more disturbance than might result from a mod-

erate peritonitis about the herniated loop of intestine, so that although the question of internal strangulation was considered in view of the persistent constipation, still it was not deemed wise to interfere by operation. When the symptoms of danger did come, the fatal issue followed so closely upon them that no opportunity for interference was given.

GANGRENE OF HERNIAL SAC AFTER HERNIOTOMY; LAPAROTOMY; RECOVERY.

Pera S., a small, thin woman, giving her age as forty-five, but looking much older, entered the Massachusetts General Hospital, October 26, 1887. The history was, briefly, that a lump had been noticed in the right groin for three years. Since first seen it had never disappeared. Three days before entrance she began to have great pain in the abdomen, especially in the right iliac region, and the bowels ceased to move. For one day she had been vomiting.

The tumor was about the size of a hen's egg, and was tender to the touch. It lay above Poupart's ligament. She was etherized, and, after an ineffectual attempt at reduction by taxis, herniotomy was done.

The sac contained no fluid. The protrusion consisted of a small knuckle of intestine and a little bunch of omentum, and had come out through the inguinal ring. The constriction was incised, and the hernial contents were returned to the abdominal cavity. The sac was turned in, and the pillars of the ring were stitched in front of it.

October 27th (the next day). The patient was very uncomfortable, and was still vomiting. There was diffused tenderness over the whole abdomen, but the pain principally complained of was in the right iliac region. She had, in the morning, a small involuntary defecation, and another slight one after a turpentine enema. Towards evening, she was failing rapidly. She was still vomiting, and the pulse, which had been rapid from the first, became very weak and intermittent. Another enema was given without effect.

It being evident that some serious condition still existed in the neighborhood of the hernia, and there being some hope that it might be remedied by an operation, laparotomy was advised, and was accepted by the friends.

Ether was given and the wound was reopened, and was then prolonged by an incision parallel to and just outside of the linea semilunaris, opening the peritoneal cavity. The intestines were gently pushed away from the neighborhood of the inguinal ring. They were perfectly free, no part of them being engaged in any ring or sac, and no portion that was seen being discolored, as if recently strangulated.

Upon investigating the hernial sac, which had been turned back into the abdominal cavity, it was found somewhat discolored, and had the appearance of commencing gangrene. It was, therefore, drawn down out of the abdomen, and the peritoneum was closed behind it.

October 28th (the following day). The patient was free from the intense pain from which she had previously suffered, and said that she felt much better. She was able to bear a small amount of liquid food.

She continued to hold her own through the next two days, and on October 31st she had several small, loose discharges from the bowels.

November 1st. The bowels again acted freely.

November 3d. The sloughs from the old sac came

away. From this time there was slow, but steady improvement, and the wound finally closed.

November 19th. She was taken home by her friends. Some weeks later she was heard from, and had then resumed her household work.

In this case, the dangerous symptoms were evidently due to the commencing peritonitis about the sloughing hernial sac, and the improvement following the laparotomy, by which the gaseous portion was brought outside of the peritoneum, was immediate. I have not been able to find another instance of just this condition of things. Perhaps it is sometimes an unsuspected cause of death after hernia.

Besides the cases of immediate trouble following herniotomy or reduction by taxis, we have at times conditions leading to obstruction of the bowels a considerable time after the reduction of the hernia.

A case of umbilical hernia operated on by me, and reported some years since, illustrated this condition of things:

The patient, a woman of forty-seven, bore the operation well, her bowels acted naturally in due time, and the wound healed by first intention. On the ninth day she took a little solid food for the first time, and this change from a liquid diet was followed by considerable pain in the abdomen, referred to the neighborhood of the umbilicus, and colicky in character. A little hardness and fullness was to be felt just to the right of and above the umbilical region, and this part was tender to pressure. The bowels being somewhat constipated, several small doses of castor oil were given, with the effect of producing a free, easy defecation, and of relieving the pain.

Several times during her subsequent stay in the Hospital the same course of events was noticed; namely, that when her bowels were constipated she suffered from cramps, with occasional vomiting, and that these symptoms were relieved by a mild cathartic.

It was believed at this time that the bowels were somewhat obstructed, probably owing to adhesions

about the loop of intestine that had been returned while inflamed, and had set up a local peritonitis in its neighborhood.

Treves,* in an interesting article on the "Forms of Intestinal Obstruction that may Follow after Hernia," enumerates the following conditions that may give rise to intestinal obstruction some time after the reduction of a hernia, either by taxis or by herniotomy:

(1) Organic stricture of the bowel, as a result of hernia.

(2) The herniated loop, after reduction, becomes fixed to the abdominal parietes by adhesions.

(3) The two ends of the herniated loop may be fixed together by adhesions.

(4) The adhesions between the reduced loop and the parietes may develop into a band, behind which, subsequently, strangulation may occur.

(5) To the inflamed peritoneum about the hernial orifice a part of the omentum may become adherent, and lead to subsequent internal strangulation.

The case I have just narrated probably is to be placed in the second or third of these classes, for the first symptoms followed so soon upon the operation that a stricture or a band would have hardly had time to form.

The prompt relief that always followed laxatives deterred us from operative interference at that time, and led us to hope that in time the condition might correct itself.

The patient, when she left the Hospital, was especially warned of the danger, and I asked her to let me know at once if she ever had an attack of abdominal pain which did not yield to laxatives. It was, therefore, a great disappointment to hear later that she died of just such an attack, which her attending physician treated with opiates, and without laxatives.

The table which follows gives the main facts of all of the cases of strangulated hernia operated upon by the writer. It is added as a contribution to statistics upon the subject.

No.	Name	Age	Residence	Variety	Strangulated for	Operation	Result	Remarks
1	James H.	38	Everett	Inguinal	8 hours	Herniotomy	Recov.	.....
2	Alfred B.	32	Boston	Inguinal	2 days	Taxis	Recov.	.....
3	John J. R.	50	Boston	Inguinal	7 hours	Taxis	Recov.	.....
4	Mary C.	47	E. Medford	Umbilical	3 days	Herniotomy	Recov.	.....
5	Fanny R.	48	Brighton	Internal	5 days	Laparotomy	Died.	Three feet of sloughing intestine.
6	....	50?	Charlestown	Inguinal	....	Taxis	Recov.	Success after $\frac{1}{2}$ hour of taxis.
7	James P.	23	Chelsea	Inguinal	12 hours	Taxis	Recov.	.....
8	Ava D.	33	Boston	Femoral	2 days	Herniotomy	Died.	No autopsy.
9	O. P.	..	Boston	Inguinal	....	Taxis	Recov.	.....
10	John L.	40	E. Cambridge	Inguinal	Incarcerated	Herniotomy	Recov.	Hydrocele of Sac.
11	Harry L	15	Boston	Inguinal	4 hours	Taxis	Recov.	.....
12	....	..	Natick	Inguinal	1 day	Herniotomy	Recov.	.....
13	Charles R. D.	67	Medford	Femoral	1 day	Herniotomy	Died.	Internal strangulation.
14	William J. M.	35	E. Boston	Inguinal	5 hours	Herniotomy	Recov.	.....
15	Isidore M.	29	New York	Inguinal	2 days	Herniotomy	Recov.	Hour-glass sac.
16	Kate L.	34	Cambridge	Femoral	12 hours	Herniotomy	Recov.	Second operation.
17	Pera L.	45	Boston	Inguinal	3 days	Herniotomy and Laparotomy	Recov.	Sloughing sac.

STRANGULATED INGUINAL HERNIA. HERNIOTOMY. CONTENTS OF SAC FOUND TO BE CANCEROUS. RELIEF OF SYMPTOMS.¹

BY S. J. MIXTER, M.D.

Mr. Y., a patient of Dr. Norton, of Walpole, a farmer, fifty-five years of age, had had an inguinal hernia for a great many years and was able to keep it in place by means of a truss, and, when it did come down, could easily reduce it himself.

Forty-eight hours before I saw him his hernia came down suddenly while he was lifting. He could not reduce it, and after keeping quiet for twenty-four hours, sent for a physician. Attempts at reduction, both without and with ether, proving unavailing, the foot of the bed was raised and ice bags placed on the hernia. I saw him the next day. He was then suffering severe pain in the tumor; there was considerable pain and tenderness of the abdomen with some distension. There had been no movement of the bowels since the descent of the hernia, and there was constant nausea and occasional slight vomiting. The right scrotum and inguinal regions were red, swollen and tender. The patient was etherized and attempts at reduction being unsuccessful, it was decided to perform herniotomy. The symptoms were not particularly urgent, but had been growing steadily worse for twenty-four hours, under the best conditions for their relief.

The tumor was not resonant in any part. On opening it the sac no fluid escaped, and a mass was found filling it which resembled neither omentum nor bowel, but which seemed more like a much-thickened sac, within the first. It was entirely irreducible and somewhat congested. On cutting into this mass a small cavity was opened and a small amount of jelly escaped. On introducing the finger more jelly and a large number of small grape-like masses were found to fill this and adjacent cavities. The tumor being adherent, was separated as far as the much enlarged ring, but after enlarging the ring and passing the finger round the neck of the tumor, it could not be reduced and was ligatured and removed as high as possible, the removed mass resembling in size and shape a large pear. The finger passed through the ring could feel a large mass passing backwards and upwards into the abdominal cavity and apparently firmly fixed. Symptoms of strangulation were entirely removed by the operation and the patient did well for about ten days, only a slight amount of pus escaping along the drainage-tube tract, when distension of the abdomen and a high temperature appeared and the patient died. The probable cause of death was peritonitis, perhaps caused by sloughing of the pedicle of the tumor left in the ring, its structure being such that a necrosis might easily take place in the mass.

The tumor was examined microscopically by Dr. W. F. Whitney, who pronounced it colloid cancer.

— M. Pasteur's recent proposition to extirpate the rabbits which infest New South Wales by the introduction of the chicken-cholera microbe, is strongly opposed by a government official who asserts that the proposition involves greater danger than the pest it seeks to remove.

THE REIMPLANTATION OF A TREPHINE BUTTON OF BONE.¹

BY HERBERT L. BURRELL, M.D.,
Surgeon to the Curney and Children's Hospitals.

It would seem that the credit of introducing the important step of replacing a trephine button of bone in the skull belongs to William MacEwen,² and its full significance has perhaps not been fully appreciated, for it is possible to replace bone that has been completely divided from all its attachments, especially from its periosteal covering which has always been considered to be so important for its life and growth and to feel assured that it will live, places upon a definite practical, working basis bone-grafting which may well become one of the great possibilities of surgery.

MacEwen in 1885, stated that he had reimplanted the fragments of divided trephine buttons, in eleven cases, only twice did the replacement fail, and in these two cases the majority of the fragment lived.

The able paper of MacEwen upon "Osteogenic Factors in the Development and Growth of Bone,"³ which has recently appeared, is evidently the result of mature thought upon the subject of bone-growth, and accepting for the time MacEwen's experiments and many of his conclusions, we are lead to conclude that the periosteum is no longer the principal seat of bone-growth but to deem it simply an investing membrane which supplies a comparatively small amount of nutriment to the bone. The medulla is also shown to have but little to do with the growth of bone, in fact, the osteoblastic cells are believed by MacEwen to be capable of reproducing themselves. These statements at first are somewhat startling but we are beginning to receive accounts of successful efforts at bone-grafting, and this specimen which I have been fortunate enough to secure, has seemed to me of enough importance to place upon record. The trephining was an exploratory one done on a boy aged thirteen, to determine the presence or the absence of a depressed inner tablet of the skull that might have accounted for a group of existing cerebral symptoms. Operation: the child was etherized and the localization lines were drawn by Dr. W. N. Bullard; a large semilunar incision was made with the base downward, including the cicatrix; a second incision was made through the periosteum, and this was completely and freely elevated from the bone, which was then removed with a large trephine; no fracture was detected, and no abnormal appearance of the dura mater was found; an exploratory puncture with a trocar was made into the cerebral substance in the direction of the median portion of the ascending frontal convolution, entering perhaps four inches—no result. The bone which had been carefully preserved in an antiseptic solution was then carefully replaced in the skull, the periosteal flap was secured in position by a fine continuous catgut suture, and the overlying structure were similarly dealt with. Drainage being secured in the scalp by a dozen or more strands of catgut; an antiseptic dressing was applied and the recovery from a surgical standpoint was uneventful. When the dressing was first removed at the end of two weeks, the wound was found completely united; for a short time after this a dressing was kept on the boy's head as a protection against any injury to the recently

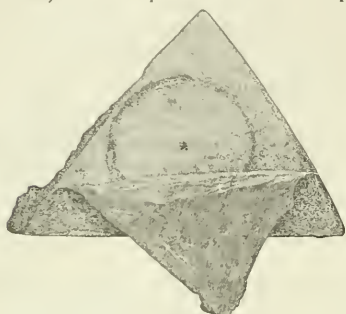
¹ Read at the meeting of the Surgical Section of the Suffolk District Medical Society, February 1, 1886.

² Read before the Surgical Section of the Suffolk District Medical Society, Feb. 1, 1886.

³ Lancet, May 16 and 23, 1885.

⁴ Annals of Surgery, Oct. and Nov., 1887.

repaired structures. The child's cerebral symptoms gradually grew worse, and he finally died in the Boston Lunatic Hospital, in December, at the expiration of nearly eight months after the trephining, and for the specimen I am indebted to Dr. W. N. Bullard. (See cuts.) The trephine button has completely



I. Outer Surface.



II. Inner Surface.

united by bony union throughout its circumference, and is perfectly firm in its position; it rests in a plane a little below that which it formerly occupied, and is a little whiter than the surrounding bone structure; there has been raised from the external surface of the bone the overlying periosteum (Cut I.) in order that the condition of the reimplemented button might be observed.

The important lesson which this specimen seems to teach, is that hereafter one should regard the removal of a trephine button in the same light as an exploratory incision through the abdominal walls, since in each case it opens up a very important field for exploration, which can be again closed by reuniting the abdominal walls or by replacing the trephine button.

— A Chicago congressman has lately introduced a bill in the House of Representatives which provides for a penalty to be inflicted on persons bringing infectious diseases into the United States, authorizes the supervising Surgeon-General of the Marine Hospital Service to build a laboratory, and repeals the act creating the National Board of Health. The bill is put forward, it is said, in order the more easily to kill the bill establishing a Bureau of Public Health.

— A Liverpool daily paper contained (January 27th) the following advertisement: "Wanted at the end of February, a nurse able to bottle a baby."

A CASE OF NECROSIS OF THE TEMPORAL BONE; REMOVAL OF THE LABYRINTH; RECOVERY.¹

BY FREDERICK L. JACK, M.D.,
Assistant Surgeon to the Massachusetts Charitable Eye and Ear Infirmary; Aural Surgeon to the Lowell Hospital.

THE patient was first seen by me at the Children's Hospital in consultation with Dr. H. W. Cushing, who gave the following history:

Willie B., eight years of age, was brought by his mother to the hospital on August 24th for the relief of pain in the left ear. An examination showed the following condition: The left meatus filled with a purulent and offensive discharge. A polypoid mass springing from the posterior upper portion of the canal close to the outer orifice, prevented an inspection of the condition of the middle ear. There was paralysis of the muscles of the face on the left side. The region of the mastoid was red, swollen, and there were distinct signs of fluctuation.

The patient was etherized and a free incision made down to the bone, evacuating a quantity of pus. A small piece of dead bone was discovered about on a level with the superior wall of the external meatus, which was readily removed, and the probe found to pass into the mastoid an inch. The polypus was snared off. The wound of incision was dressed and the patient kept in bed. The head symptoms were partially relieved for a few days by the operation, but the otorrhea continued, accompanied now with free discharge from the wound behind the auricle.

September 1st. The case was referred for treatment to the Massachusetts Charitable Eye and Ear Infirmary. The polypus which had reappeared was removed, revealing the condition of the middle ear. The membrana tympani was found entirely destroyed, and the tympanic cavity filled with granulations. The malleus and incus were absent. Probing discovered no necrosis either in the middle ear or in the post-aural sinus to the depth of an inch. The ear and wound were frequently syringed with solutions of permanganate of potash and boric acid. While syringing into the sinus, water freely passed into the meatus from the inferior wall of the tympanic cavity. Under treatment all symptoms diminished, and at the end of ten days the mother was requested to bring the boy as an out-patient. She neglected to attend till October 20th. In the meantime the post-aural swelling had alternately subsided and reappeared. The pain in the ear and mastoid for a few nights was intense. Under ether, the wound previously made behind the ear, which had partially closed, was enlarged, and dead bone readily felt with the probe at the depth of an inch and a half. The sequestrum resisted gentle attempts for its removal, and considering the relation of the bone to the cranial cavity, and the liability of dangerous hemorrhage, it was decided not to use force, but to allow it to separate by natural processes. The patient remained in the Infirmary for a week, and during the time suffered very little pain, an anodyne being required but once.

The case now passed from observation until November 17th. At this time the auricle was standing far out from the head, and the swelling over the mastoid had extended farther down the neck. The purulent process was active, and the ear and wound freely discharged.

¹ Read at the meeting of the Surgical Section of the Suffolk District Medical Society, Feb. 1 1888.

Under ether the sequestrum was felt with the probe about an inch from the opening of the wound. It was somewhat movable, and after several attempts was extracted without much difficulty with forceps, and proved to be the greater part of the osseous labyrinth.

When last seen on January 9, 1888, the opening over the mastoid had nearly closed; the discharge from the ear very much diminished in quantity; there was improvement in the facial paralysis, and the patient was in good health. The deafness was profound on the left side, all tests of hearing giving negative results.

The writer has briefly reported the case, believing it of interest in the following respects: namely, the excision of so large a portion of the labyrinth, its removal through an opening in the mastoid process, and the progress of the case toward a favorable termination.

REPORT ON PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

SUBLIMATE SOLUTION AS A DISINFECTANT, AND ITS VALUE IN SURGICAL DRESSINGS.

LAPLACE¹ found that sublimate dressings, as ordinarily used, are free from germs, but that they sometimes contain bacteria, and hence fail to accomplish their purpose, for the antiseptic action of such a dressing is questionable. Also, that the antiseptic power of sublimate was much impaired when it came in contact with a substance containing so much albumen as blood. To overcome this, hydrochloric acid was added, and though the result was satisfactory, this combination was not found practical. Tartaric acid was then substituted,² and given a practical trial in Bergmann's clinic and polyclinic, from which experience, Laplace concludes:

(1) That the tartaric acid sublimate solution is a perfect one for the disinfection of wounds. For fresh wounds, simple washing or irrigation is required. Infected wounds require to be daily irrigated for ten to twenty minutes with this solution. A permanent dressing of tartaric acid sublimate gauze is used.

(2) This dressing can be combined with iodoform to advantage where the usual indications for iodoform exist.

(3) Laboratory experiments and practical use of this solution and gauze give better results than the usual dressings.

(4) Wounds are not irritated by it.

(5) The acid solution dissolves the sublimate more readily than water. The solution does not injure the bandages as some acid solutions do.

(6) Such dressings are thoroughly free from germs—aseptic.

¹ Deutsche Med. Wehnschr., 1887, xlii, 40.

² Sublimate solution:

R. Sublimate	1.00 grammes.
A. tartarici	5.00 "
Aq. distill.	1000.00 "
Gauze or cotton is prepared with:	
R. Sublimate	5.00 grammes.
A. tartarici	20.00 "
Aq. distill.	1000.00 "

Absorbent cotton or gauze is soaked about two hours, wrung out, and dried.

DISINFECTION OF HANDS.

The following are the conclusions of Fürbringer, one of the most recent investigators of this subject:³ That the "subungual space is the most difficult part to clean. The most essential thing of all is the preparation of the skin and nail, since the disinfecting power of sublimate and carbolic solutions does not depend on the strength of the liquid alone. As the result of many experiments, Fürbringer recommends the following method, which is said to give almost ideal results:

- (1) Clean the nails mechanically of all visible dirt.
- (2) Scrub the hands, nails especially, with brush, warm water, and soap.
- (3) Immerse hands for one minute in alcohol (not weaker than 80%), and while wet plunge into a sublimate (2%) or carbolic (3%) solution, where they should remain one minute. Fürbringer prefers the sublimate solution. This method is now in use in Professor Bergmann's clinic in Berlin.

MAJOR OPERATIONS FOR DIABETIC GANGRENE.

Professor König reports two cases,⁴ the results of which may cause a revolution in the present method of treatment of these distressing cases. In this class of patients there is a marked predisposition to inflammation and local necrosis which has deterred surgeons from operating on such patients. These processes are the result as usual of germ invasion, but more exaggerated, since the conditions are more than ordinarily favorable for their development, and the tissues become necrotic more readily. French surgeons with Roser state that this necrosis can occur in not only advanced cases in old patients, but also in middle-aged ones, where the general condition of the patient and the absence of thirst or polyuria have prevented recognition of the real trouble. The course recommended by König is that in all cases of spontaneous or even post-traumatic phlemonous and gangrenous processes the urine should be examined carefully for sugar, and since the presence of sugar and albumen may be transitory,⁵ these examinations should be repeated.

CASE I. König saved a gouty old man, aged seventy, with gangrene of the fifth toe, which had extended to the ankle. The amount of sugar had increased from 2% to 4% and there was anorexia, emaciation, coma, etc. König rapidly amputated the leg at the middle. The urine on the following day showed no sugar. The wound remained aseptic. The patient was discharged at the end of eight weeks. No sugar. The latter, however, reappeared later.

CASE II. A well-nourished brewer, aged forty, who had had phlebitis of the left leg two years previously, and for the preceding nine months emaciation and thirst, gradually developed gangrene of the left hallux and phlegmon of the foot. Continuous hicough, low fever, albumen trace, sugar 4%; sugar diminished to 2½% by careful general and local treatment; amputation. In four days no sugar, and other symptoms absent. Discharged well in six weeks. No sugar six months later.

In both cases extensive arterio-sclerosis and calcification of numerous small arteries were found. König recommends the following rules for treatment in these cases:

Antidiabetic and antiseptic local treatment. If no

³ Untersuchungen und Vorschriften über Disinfection der Hände des Arztes u. s. w. Wiesbaden, 1888.

⁴ Centrbl. f. chir., 1887, s. 225.

⁵ Redard, 1886.

improvement and further delay involves danger to the patient, a radical operation (generally an amputation) in the most aseptic manner possible.

THE PRACTICAL VALUE OF SECONDARY SUTURE FOR CLOSURE OF WOUNDS.

This practice, already used by Kocher,⁶ and Neuber,⁷ and recently described by Bramann, of Berlin,⁸ has again been brought to notice by Hefelrich,⁹ who regards it as a most valuable resort in certain classes of wounds. The following conditions are those in which this method can be used:

(1) After operations in tissues which are the seat of septic inflammation, such as amputations, excisions, abscesses, phlegmon, bursal inflammation, etc., when immediate closure of the wound is unsafe. In a few days, when the wound-surface is clean and there is no fever, the wound can be advantageously closed. Some care must be used since the sutures cut out easily. In normal tissues a dry absorbent antiseptic dressing is best during this period, but under other circumstances a moist one must be used.

(2) In cases of bone or joint tuberculosis by an iodoform tampon the specific action of the iodoform (P. Bruu) is utilized. Also, since local tuberculous processes are destroyed by cicatricial contraction, the slight amount occurring in the two to six days intervening before the closure of the wound is also used to advantage. This is not suitable in knee resections, however, since granulation growth prevents accurate apposition of the ends of the bones.

(3) In recent wounds, when, on account of cavities, hæmorrhage is difficult to control; for example, extirpation of the kidney or thyroid, severe head injuries, brain operations, etc.; also for amputation in time of war, or where, for any reasons, primary union is imperilled.

(4) For operations on or about the anus, genito-urinary tract, mouth, or naso-pharynx. An anæsthetic is usually required. Buried sutures are used as in fresh wounds. Inverted wound-edges are to be carefully raised so that the wound can be accurately closed. In amputations the skin-flaps must be cut larger than when the wound is to be closed at the operation to allow for the contraction which occurs.

IMPROVEMENT OF CICATRICES.

Lassar¹⁰ claims to have prevented—by continually removing the exuberant granulations of ulcerating surfaces, so that the surrounding skin may have opportunity and time to extend in over the granulating surface—the white radiating scars often seen after such lesions. This treatment delays the rapidity of healing. The writer especially mentions cases of lupus canceroid and acne rosacea hypertrophica. His results, as shown in his article, are surely quite attractive. For further details of the method the reader, is referred to the author's original article.

HEAD INJURIES.

Ginger¹¹ has investigated the cases of such injuries on record at Czerny's clinic from 1877 to 1884 inclusive. He has classified them as follows:

- (1) 90 cases, injuries of soft parts.
- (2) 23 " compound fracture of the skull.
- (3) 12 " fracture of the base.
- (4) 8 " no osseous lesion, followed by brain symptoms.

CLASS I. Forty-eight showed no brain symptoms. In ten cases such symptoms were of slight importance and short duration. In two cases (brothers) hæmatophila delayed recovery. In six cases erysipelas, with one death (case forty-one). The sooner treatment is commenced and the less a wound is exposed the more favorable the prognosis. Hæmatophila delays healing and cicatricial contraction, subsequently in some cases causes marked neuralgia.

CLASS II. All due to direct violence to vault of skull. They recur in order of frequency as follows: vertex, frontal, temporal and occipital regions. Symptoms of brain abscess can occur subsequent to several years following the injury. Late nervous and physical symptoms can also occur which may incapacitate the patient for work. The results of this class show twenty-three (nine cases trephined) recoveries, nine (five cases trephined) deaths, four of which were hopelessly injured. In all five cases of operation the latter had no influence as contributing to the fatal result. Compound fractures of the vault are to be considered grave in proportion to the degree and duration of the accompanying brain symptoms. In regard to ability to work, with certain reservations the prognosis depends on whether the motor tracts of the cortex are involved or not, and to what extent.

CLASS III. Twelve cases, three deaths. Prognosis influenced by the presence and duration of brain symptoms. Most common lesions are disturbances of sight and hearing. Prognosis favorable where the tympanum, and not the labyrinth, is affected, or where no suppurative occurs: where due to exudation, which will be absorbed, and not to tearing or crushing of the optic nerve or Sehsphäre (visual centre).

Here, also, as in Class II, is the possibility of late development of brain abscess, or of nervous and physical symptoms. The worst prognosis is where extensive comminuted fractures co-exist with fractures of the vault.

CLASS IV. Eight cases. Where apparently an exudation capable of absorption or capillary apoplexy, with slight lesions of brain substance, exist, without any osseous lesion which can be discovered. Here the prognosis is generally favorable, but should be a guarded one. The history in detail of the cases referred to by the writer accompany his monograph, and are of great interest and value.

CLOSURE OF THE JAWS AND ITS TREATMENT.

In a paper by J. Ewing Mears,¹² he summarizes all of the previously suggested methods, and then gives his own method of treatment in six cases, with results. It is as follows: An external cicatrix is avoided by excision of the upper portion of the ramus, the coronoid, and the condyloid processes through the mouth. A straight, sharp-pointed bistoury is introduced beneath the masseter muscle on a level with the last molar tooth of the lower jaw. An Adam's saw is introduced through this opening, and the ramus is sawn through. The periosteum, with the overlying tissues, including the muscle, is raised by an elevator, and the wound thus enlarged. Then the tissues on

⁶ *Annals of Surgery*, 1885, vol. 1, p. 89.

⁷ *Ibid.*, 1886, vol. 3, p. 436.

⁸ *Arch. f. klin. chir.* 1887 Bd. xxxvi, p. 72.

⁹ *Munchener Med. Wochenschr.*, 1887, No. 21-22.

¹⁰ *Klinische Beiträge Zur Narbenverbesserung* Berl. Klin. Wochenschr., 1887, xiv, p. 181.

¹¹ *Deutsche Zeitsch. f. Chir.*, 1887, xxvi, 1, p. 216.

¹² *Jour. Am. Med. Assoc.*, April 16, 1887.

the inner surface are separated by the elevator, and the bone twisted outward forcibly by lion-jawed forceps. If it breaks at the neck of the condyle, the process is afterwards chiselled out. Hemorrhage may be controlled by packing the wound-cavity with sponges. The wound-cavity is then packed with iodoform gauze, renewed every third day.

The formation of a new joint is aided by the use of a mouth-gag, beginning at the end of a week, and continued at varying intervals for from six to eight weeks. Chewing-gum materially assists in the maintenance of a false articulation.

LIGATION OF THE LINGUAL ARTERIES FOR CON- GENITAL MACROGLOSSUS.

In advanced cases of macroglossus, some operation for reducing the size of the tongue is usually required, whether by a wedge-shaped excision of its tip, or by an attempt to obtain contraction by multiple punctures with a thermo-cautery (Helferich method). In the primary stage of the affection, shortly after birth, such operative procedures are dangerous to so young a patient, and the various methods to check its development, such as scarification, with or without subsequent use of astringents, parenchymatous injections, compression by bandaging, section of the genio glossus muscles, have not been satisfactory. The affection is a lymphangiomatous,¹³ and its microscopic structure shows a strong resemblance to certain forms of elephantiasis.¹⁴ Fehleisen, after witnessing a satisfactory result in a case of elephantiasis cruris from ligation of the femoral artery, determined to try the same treatment in a case of congenital macroglossus, since the two affections showed a similar pathological process, and in August, 1886, carried out this idea at the Royal Surgical Klinik in Berlin, by ligating both lingual arteries in a child aged thirteen months.¹⁵ The tongue, which, before the operation, projected one centimeter beyond the margin of the lips, contracted in twenty-four hours to almost its normal size. In two days, a dark-blue color was the only abnormal condition noticeable. This also disappeared in about a week. One year after the operation, no tendency to recurrence had been noticed. The advantage claimed for this procedure is that the danger of the usual operation to infants is avoided, and that the result is more satisfactory.

THE TECHNIQUE OF LATERAL PHARYNGOTOMY FOR THE REMOVAL OF TUMORS OF THE TONSIL.

Obalinski,¹⁶ of Krakau, has reviewed this subject with reference to an improved operation. He finds the following methods on record:

(1) Langenbeck: incision from angle of mouth obliquely downward and backward to the level of the thyroid cartilage, and subsequent section of lower jaw by sawing.

(2) Lugenbeck — modified: above incision shorter above, but continued below to the level of the cricoid cartilage.

(3) Gussenbauer: incision from anterior border of sterno-cleido-mastoid insertion to mastoid process, to upper tracheal rings.

(4) Kocher: "an angular incision, a combination

of two and three, which gives an excellent opening to the pharynx, and sawing the lower jaw at the anterior border of the masseter.

(5) Mikulicz-Gussenbauer incision, with addition of section of lower jaw at posterior border of masseter muscle, and enucleation of same, which allows a better entrance to upper part of pharynx; mouth not opened at all, and only at last, thereby avoiding necessity to tracheotomy.

Obalinski considers that the first four methods are suitable only for tumors situated in the lower part of the pharynx, and that 5 is most favorable for extirpation of tumors of the tonsil. Its disadvantage is the subsequent ankylosis following enucleation of the jaw. He proposes a modification which he has used successfully for removal of a large tonsillar sarcoma extending from the palatine arch to the right ary-epiglottic fold, tracheotomy, slight hemorrhage; tube removed on sixth day; patient fed ten days with oesophageal tube; recovery in five weeks, with perfect function of lower jaw. Obalinski first removed the affected cervical glands through the Gussenbauer incision, ligated the lingual and facial arteries, and divided the stylo-hyoid and digastric muscles. A second incision was then made perpendicular to the first, and extending to the angle of the lower jaw, which was sawn through at this point. By pulling outward the divided ends the tumor was fully exposed and dissected out. The operation was completed by uniting the jaw with two silver wires, and closing the soft parts with silk sutures. The "G." incision was closed after introducing a rubber tube packed around with 20% iodoform gauze into the oesophagus. This method, Obalinski claims, avoids the disadvantage of the Mikulicz method. This method can be used for operations on the third branch of the fifth nerve.

HEMORRHAGE AFTER TONSILLOTOMY.

A number of cases are on record where alarming hemorrhage has occurred after this operation, and which has been considered by Chassaignac as having its origin from its proximity to the internal carotid artery. This has been contradicted by Lihhart (1849), who claims that the tonsil is not, as is commonly believed, separated from the carotid only by the pharynx wall, but that the posterior part of the "pharyngo-maxillary" space; that is, between the lateral wall of the pharynx, the internal pterygoid muscle, and the uppermost cervical vertebrae, contains the great vessels. He also claims that the vessel is not drawn out with the tonsil when that is pulled forward from its niche between the faucial pillars, but that the distance between the gland and the artery is increased by so doing. Luschka also confirms this. Other textbooks differ. To decide this point, Zuckerkandl¹⁸ has carefully investigated this point, and concludes that "Lihhart's space" is not a definite one, but that a muscle layer, besides the pharynx wall and fat, separate the tonsil from the artery; that it is out of the question that the internal carotid can be injured by tonsillotomy or probe-pointed bistoury. The same is true of scarification of the tonsil or incision of tonsillar abscesses, unless where, as by a quick motion of the patient's head, the knife penetrates deeply towards the vertebrae. In incising a retro-pharyngeal abscess, such an accident is possible where the vessel is sur-

¹³ Virchow's Archiv, B. 1, 7, s. 126. Hamphry. Med. Chir. Trans., 1854, Vol. 63.

¹⁴ Wegner. Langenbeck's Archiv, B. 1, 20.

¹⁵ Berl. Klin. Wochenschr., 1887, Bd. xxiv, s. 941.

¹⁶ Centbl. f. Chir., 1887, xiv, 28.

¹⁷ Cheever, D. W. Boston Med. and Surg. Journ., 1878, Vol. xcix, 135.

¹⁸ Schmidt's Jahrbücher, 1857, No. 9, 369.

rounded by pus. Zuckerkandl explains these severe hemorrhages after tonsillectomy by the fact that the fibrous capsule of the tonsil prevents the divided vessels from contracting. This is avoided by not making the cut in the plane of the lateral wall of the gland, best done by simply cutting off top of the tonsillar swelling. Hemorrhage from this source is best controlled by ligation *in situ*, or, if impossible, by prolonged pressure with the Pean-Mikulicz forceps. Ligation of the carotid is unnecessary.

INTRA-CAPSULAR EXTIRPATION (PARTIAL) OF THYROID WITHOUT TAMPON OR HEMORRHAGE.

Hahn,¹⁹ reported at the Sixteenth Surgical Congress at Berlin, a new method for removing portions of an enlarged thyroid gland. The preliminary steps consisted in ligating both superior thyroid and thyroidea ima arteries, exposing the gland freely by dissection, and clamping both inferior thyroid arteries with forceps, the spring of which is just strong enough to compress the vessel without injuring the recurrent laryngeal nerve, should it happen to be included. The capsula propria of the left lobe is then incised, and with knife, or scissors and forceps, the desired amount of gland structure is removed without injuring the capsule, except at the above-mentioned point. The right lobe is then treated in a similar manner. In this manner, masses of gland can be "shelled out," as myomata from a uterus, without hemorrhage. Hemorrhage from capsular vessels is controlled by ligation. The wound is packed with iodoform gauze. The forceps are removed from the inferior thyroid arteries at the end of twenty-four hours, secondary suture at the end of a few days. Almost complete union at the end of ten days. In this way, one avoids tearing or crushing the thyroid, operates unimpeded by hemorrhage, avoids injury to the recurrent laryngeal nerve, and diminishes the danger of sepsis, since there is neither arterial ligation *en masse*, nor necrosis from crushing or tearing of gland tissue. Hahn claims that this method compares favorably with the "partial resection and ligation *en masse*" of Mikulicz, the "ligation of the thyroidea arteries" of Wölfler, the "shelling out and tamponade" of Wolf, or the intra-capsular method of Socin and Garre, or unilobular extirpation.

CANCER OF THE LARYNX.

The following data relating to this affection are of value and interest.²⁰ Although papilloma are the most frequent form of laryngeal tumor, malignant growths are not so rare as has been supposed, and of the latter, carcinoma is the most frequent. Primary cancer occurs most frequently in males, and between the ages of fifty to sixty. Hereditary influence is unproved, and the exciting causes uncertain, although it is claimed that cold, damp climates, inhalation of irritating gases, abuse of alcohol and tobacco, especially combined with violent use of the voice, seem to have an influence on its development. That repeated attempts to remove benign growths instrumentally is at present an open question. Its most frequent origin is the ventricular bands and vocal chords; that is, the middle and superior part of the larynx, generally on the left side. Of 167 cases, 149 were epithelioma, and 18 eucephaloid in character. Prognosis fatal.

Duration shows wide limits. Twenty-seven cases of v. Ziemssen are thus classified: Nine (33%) died within one year; fifteen (55%) died between one and six years; three (11%) died after six years; one was alive fifteen years after disease discovered.

Its average duration is variously stated, some claiming that the disease rarely lasts longer than eighteen months, others²¹ that twenty-three months for epithelioma, and three years for the eucephaloid form. Treatment is, as a rule, palliative. Laryngotomy and laryngectomy are the two alternatives which the surgeon can offer his patient. The former prolongs life,²² relieves dyspnoea, adds much to the comfort of the patient by giving rest to the larynx, and is, in fact, the most useful procedure, although a palliative one.

Laryngectomy gives about 30% recoveries²³ of all cases, benign, as well as malignant.²⁴ Its high mortality, however, makes this procedure one of considerable danger. Partial laryngectomy:²⁵ if the patient survives the operation, there is a good prospect of future immunity from recurrence; where the disease is circumscribed, it is a much less fatal operation, but its ultimate results are not yet definitely known. Hence the true statement of operative treatment is that tracheotomy or laryngectomy leaves the patient with no immediate danger of death, without voice or hope of recovery, and a possible prolongation of life of, at least, one year, and possibly two or three; while laryngectomy, with a more than even chance of an immediate fatal result, gives the patient, if he survives the operation, a good prospect of complete immunity from recurrence, but with an artificial voice and a constant dread of recurrence, either local or metastatic. Hahn²⁶ advises as early an operation as possible in carcinomatous growths, where the cells show a great tendency to assume a horny character; but in the infiltrating forms, which show a great tendency to necrosis and ulceration, while, perhaps, the surrounding soft parts are already involved, a simple tracheotomy, when increasing dyspnoea renders this necessary, is wiser treatment than to attempt a radical operation.

STATISTICS ON MAMMARY CARCINOMA.

Dr. Hans Schmidt²⁷ gives the following data, obtained from a careful review of the records of these cases at Küster's Klinik from May, 1871, to the end of 1885, showing how far the radical operation for extirpation of carcinoma from the breast and axilla is successful as regards a permanent cure: Total number of cases, 228, including two male patients. Six cases unoperable. Glandular swelling was present in 97%, absent in 3%. In 71.77% was glandular affection recognized before the operation. In 26.25% glandular involvement was demonstrated only at time of operation. These last figures show how important the removal of axillary glands is in these cases. Total mortality, 10.81%, which has gradually diminished ut seq.: 1883 = 12%; 1884 = 4%; 1885

¹⁹ Fauvel.

²⁰ Fauvel. Epithelioma: average prolongation of life, twenty-five months. Eucephaloid form: average prolongation of life, nine months. Ziemssen: average prolongation of life, three to forty-two months.

²¹ Park, R. Reference Handbook of Med. Sciences. Ann. of Surg., 1886.

²² Hahn: 72 cases; 7 partial operations, 13 permanently cured to time of report, 25 deaths within two weeks after the operation. Salomon: 87 cases; 49 (56.4%) recoveries, and the best results as regards prolongation of life.

²³ Dr. Solis Cohen. N. Y. Med. Jour., 1887, Vol. XLV, 682.

²⁴ Berl. Med. Wechschr., 1887, xxiv, 2, 919.

²⁵ Deutsche Ztschr. f. Chir., 1887, xxvi, 139.

¹⁹ Centralf. f. Chir., 1887, Beilage zum No. 25, p. 40.

²⁰ N. Y. Med. Rec., Ed. 1887, Vol. 32, p. 654-682.

= 2.5%; 1886 = 0%. When three years is taken as the limit for permanent recovery, such a result was obtained in 21.5%. This, however, would be increased to 26.4% if a period of two years without recurrence denotes a permanent recovery.

In a majority of cases the disease recurred locally in the skin, operation cicatrix, muscles, sternum, ribs, pleura, remaining mamma, metastasis of other organs, and finally, carcinomatous infiltration of the intra- and supra-clavicular and cervical glands. Schmidt concludes that the axilla should be dissected out in every case, whether glands are felt or not before operating; that this method will give better permanent results; that the danger from the operation is not increased. In doubtful cases of mammary tumors, small sections of the growth removed through an exploratory incision should be submitted to a microscopic examination, and, if found to be carcinoma, that a complete operation is indicated. Benign tumors not involving a greater part of the breast cannot only, as a rule, be diagnosed, but also be dissected out without removing the unaffected gland tissue. The preservation of the subscapular nerves is quite important for the preservation of the function of the arm. The arm should not be fixed longer than twenty-four hours.

PULMONARY SURGERY.

Considerable activity exists in this new branch of surgery, and various reports of cases are appearing here and there, which are, perhaps, worthy of a little attention on the part of surgeons. Godlee²⁸ has summarized the subject, and submits the following conclusions: (1) Gangrenous cavities should always be sought, and, if possible, opened, and the prognosis, if the operative procedure be successful, is not bad. (2) The same may be said in regard to abscesses caused by the rupture of purulent collections from other parts into the lung, at least, as regards the pulmonary complication. (3) Abscesses connected with foreign bodies must be opened, and if the body be not found it must be remembered, if of any considerable size, it probably lies near the middle line. If recognized, these cases should be treated early by a tracheotomy incision. (4) Bronchiectatic cavities, when single (a very rare condition), will be cured by operation; when multiple, they offer but slight chance of relief by our present surgical methods. Still, for the reasons stated, an attempt may be made to open the main one, if such is to be found, but only if the pleura has been ascertained to be adherent. (5) Tubercular cavities should only be opened in cases where the cough is harassing and the cavity single. Injections may be used to relieve symptoms, but cannot be expected to be curative.

G. Foubert²⁹ has collected the various published cases, to the number of eighty pneumotomies: forty-seven recoveries. Twenty-nine of these successful cases were operations for hydatids, a comparatively simple and safe operation. His summary is as follows: Tuberculous cavities, in which there was incision made either with or without a resection of the rib, seven cases. In one case the patient is said to have recovered; in another, the patient is said to have lived some time. In the remainder the patients died. Abscess of the lung, fourteen cases, with nine cures and five deaths. In two of the fatal cases death could not

be attributed to the operation. Gangrene of the lung, eighteen cases, with nine cures, two ameliorations, and seven deaths. Bronchiectasis, twelve cases, with four cures.

A NEW SURGICAL OPERATION FOR THE TREATMENT OF CANCER OF THE STOMACH.

There has been, practically, three operations performed for carcinoma of the stomach, namely: (1) pylorotomy; (2) gastro-enterostomy; (3) Loret's dilation of the pylorus after gastrotomy. A. C. Bernay,³⁰ discusses these operations, and concludes that any operation aiming at a radical extirpation of the disease in all cases is intrinsically absurd, not because the disease is essentially incurable, but because, in the majority of cases that seek assistance at our hands, the disease has ceased to be a local one, and a radical extirpation is entirely out of the question. The most plausible operation which has been suggested is Wölfler's gastro-enterostomy, but this operation has met with but little favor, because few are willing to undertake a surgical feat of this magnitude in a case which they know to be doomed at all events.

Bernay calls attention to an important point, that cancer of the stomach originally grows inside the muscular layer, towards the lumen of the organ, and acting on this, he proposes (and records two cases) to perform a gastrotomy, and then removes the cancerous growths from within the stomach by means of curettes or other suitable instruments. For a detailed description of his two cases, one is referred to the original article, and certainly the results make the method worthy of consideration.

Bernay concludes that "in cases of carcinoma the aim of the operation is not very high; it is intended only to give a short prolongation of life, free from the tortures of obstruction." He considers that his operation exactly fulfils the foregoing indications, and believes that the percentage of mortality will be a very small one. He considers the operation indicated in all cases of pyloric cancer with stenosis, in which the radical extirpation is impossible on account of adhesions to neighboring organs, or infiltration of the lymphatic glands.

A METHOD OF IDENTIFYING THE ORIGIN OF THE JEJUNUM.

Hahn³¹ speaks highly of the following method of finding the first loop of the jejunum in operations for gastro-enterostomy. The omentum and transverse colon are drawn up through the abdominal incision, and the operator with the index-finger and thumb of the right hand locates that portion of the pancreas resting on the vertebrae. A loop of intestine crosses from right to left just below the pancreas. If this does not yield under traction, it is certain that the loop is the origin of the jejunum.

Maydl's³² experience in his second case of jejunostomy seems to indicate that this method is not, however, an absolutely sure one.

EXTRA-PERITONEAL EXPLORATION.

Prof. W. Snegniereff, at the Second Congress of Russian Physicians,³³ called attention to this method of abdominal exploration. Later, Bardenhauer³⁴ wrote an

²⁸ Ann. Surg., January, 1887.

²⁹ 16th German Surgical Congress, Centbl. f. Chir., 1887, Beilage zum No. 25, s. 26.

³⁰ N. Y. Med. Rec., 1888, Vol. XLVII, 152.

³¹ Moskau, 1887, Russisch. T. II, p. 137, 17.

³² Deutsch. Med. Wochenschr. 1887, Bd. XIII, p. 255.

²⁹ Lancet, March 5, 1887.

³⁰ Arch. Gen. de Medecin, October, 1887.

article which has been the most detailed description yet printed. Its advantages are, that it is less dangerous than a laparotomy, and that many tumors or abscesses being extra-peritoneal, are thus more easily reached, and it is well-known that the peritoneum can be separated over a large area with impunity, as has been often proved by ligation of the iliac artery, supra-pubic cystotomy, or nephrectomy. The regions which Bardenheuer considers accessible by this method, are: (1) The renal (for retro-peritoneal tumors, exploration of the liver, head of pancreas, duodenum, colon, cæcum and spleen); (2) the hypogastric, a transverse cut above the symphysis (for exploration of the bladder, for example, calculi or tumors, or uterus, extra-uterine foetation); (3) the thoracic, namely, separation of the peritoneum from the diaphragm through an incision along the sub-costal arch. Seguirelli recommends also lateral incisions. The recent notice taken of Bardenheuer's publication by Wölfler⁸⁵ and by Gubarroff⁸⁶ who claims that the outer surface of the pancreas, pylorus, duodenum, kidney, ureters, a large portion of the surface of the liver, gall-bladder and most of the pelvic organs can be explored through the linea alba or an incision about three cm. right or left from it, is proof that this method has a certain value. For diagnostic purposes this may be true, but where an extensive exploration and probable operation is to be performed, a direct incision into the peritoneal cavity, affords the most rapid and thorough method since the eye as well as the finger explores the field. It also seems quite possible that an accidental tear could often open the peritoneum contrary to the intention of the surgeon, in which case no advantage would be gained and much time lost.

(To be continued.)

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SURGICAL SECTION.

G. H. MONKS, M.D., SECRETARY.

MEETING, Wednesday, February 1, 1888, the chairman, DR. J. COLLINS WARREN, presiding.
DR. F. L. JACK reported a

CASE OF NECROSIS OF THE TEMPORAL BONE; REMOVAL OF THE LABYRINTH; RECOVERY.¹

after which he made the following remarks:

The case is an uncommon one. Up to 1875, sixteen similar cases had been recorded. On looking over the transactions of the American Otological Society, since that date, I found records of two cases in which the greater part of the labyrinth was removed. In 1879 there was a case at the Infirmary under Dr. Blake, an old man, in whom a portion of the cochlea was removed, and subsequently a part of the semi-circular canals.

DR. C. J. BLAKE: An interesting point in relation to the exfoliation of so large a sequestrum from the petrous bone is well illustrated by this case, and by the three plates taken from the admirable photographic atlas of the ear of Drs. Randall and Morse,

which are here exhibited, and that is the manner in which the cochlea and semi-circular canals can separate from the surrounding bone in these cases of necrosis. An examination of the plate exhibiting a section of the bony labyrinth in a child shows that the labyrinth stands by itself, and is distinct from the surrounding petrous bone, from which it is separated by diploetic tissue, a mechanical condition which permits easy separation and the pushing of the labyrinth, or of portions of it, outward by the growth of granulation tissue in the diploetic space. As is shown in the third plate, this diploetic line of demarcation still exists in a greater or less degree in the adult, and the case last mentioned by Dr. Jack in a man seventy-two years of age, is an interesting evidence of this process of separation and extrusion, which makes possible the removal by natural means of a large portion of the labyrinth without extension of the inflammatory process to the adjacent meninges.

DR. H. L. MORSE: I have only one word to say, and that is that I never saw so large a portion of the cochlea and semi-circular canals removed at one time as in this case of Dr. Jack's, and it is an exceedingly valuable case, both to hear reported, and also to have the drawings and the photographs from. It is very rare to have so large a portion exfoliated. In regard to a case which Dr. Jack spoke of, the specimen from which is on the table, I would like to say a word or two on the subject of the exfoliation of the cochlea. This case was one which came into the Eye and Ear Infirmary. It was a little girl five years old. She came in for persistent polypi, which were removed several times while she was there, and which grew again very rapidly. That was all that seemed unfavorable in regard to the case. She was pretty well nourished and a fairly healthy child. She disappeared from the Infirmary, and was lost sight of for some months. Afterwards I saw her, by the kindness of Dr. Cabot, at the Children's Hospital, and she then had facial paralysis, and was totally deaf on that side. She was a good deal emaciated, and was a very sick child, with mastoid swelling, and swelling in front of the meatus on the cheek. The sequestra, one of which is the cochlea, and another one a portion of one of the semi-circular canals, and a third a part of the facial canal in section, were removed without ether and without much pain.

She improved and left the Children's Hospital, and last summer, which was a year or so afterward, I was treating her brother, and one day she came with her brother, and I had a chance to examine her again. At that time the discharge had entirely ceased for months, and she had a cul-de-sac at the inner end of the external auditory canal, from which there was no discharge, there were granulations, and it was not tender on probing. She still had the facial paralysis complete, and still was totally deaf on that side. The history covers about two and a half years, if my memory serves me, and shows how, in a child, where the bone is not very solid, it is possible for the greater portion of the inner ear to be thrown off without killing the patient, as one would expect it to do in a place so near the brain.

DR. E. D. SPEAR: I have very little to add to what has been so admirably spoken in regard to the exfoliation of the bony labyrinth, but would like to call the attention of the Section to what we ought to think of, the prophylaxis of such cases. The special-

¹ See page 314 of the Journal.

⁸⁵ Centbl. f. Chir. 1887. Bd. XIV, p. 627.

⁸⁶ Ibid. p. 865.

ist is called upon at the last minute, perhaps, to remove the result of neglected ear disease, though it seldom falls to the lot of one to be so fortunate as to remove the bony labyrinth and get recovery. The importance of attending to a prurient ear is not appreciated at the present time even in this community. We, as specialists, know this, but the general practitioner, perhaps from his position, is not so apt to know this fact. I would like to speak of a case that I am conversant with. I can vouch for it, for my authority is a good one, though I will not name him. There was a patient treated in a neighboring city for some weeks for so-called malaria. The disease, of whatever character it may have been, went on, and the patient was found by her grandmother in her coffin. The old lady, in her inquisitiveness, approached her grandchild, and casually noticed a piece of cotton projecting from her right ear. She removed it, and a stream of pus spouted out and besmeared the inside of the casket. The moral is obvious, I think.

DR. GANNETT showed a microscopic specimen of
BACILLI OF TUBERCULOSIS IN THE URINE,

and said: I suppose almost every surgeon in his experience has cases in which he suspects the possibility of tuberculosis involving some part of the urinary tract. The diagnosis at the present time can often be made quite certain by finding in the urine tubercle bacilli; and I have here a specimen from such a case,—a case of Dr. Porter's in which he suspected tuberculosis, and a specimen of urine was sent to me for examination. The specimen, prepared in the usual way, shows very beautifully the bacilli, and so renders the diagnosis quite certain. In this case there was disease of both testes, and also of the bladder. What is to be seen here is just in the middle of the field, the red, short, narrow rods, which show in marked contrast to the blue cells in the neighborhood. They lie quite free, and are the tubercle bacilli. The specimen is prepared in the same way in which sputa is prepared, by allowing the sediment to settle, then taking a drop and mounting it on the cover-glass, and that is then stained in fuchsin, and afterward in the contrasting stain of blue.

DR. MIXER: Of course it is necessary to have some open ulceration in the urinary tract in order to get these bacilli?

DR. GANNETT: Yes, I think it is. I examined three cases of tuberculosis of the epididymis without finding bacilli.

DR. MIXER: I have known cases of tuberculosis of the kidney where examination had failed to show the bacilli, and the autopsy showed the presence of tuberculosis.

DR. GANNETT: There is one thing which is quite manifest—all observers have noticed it—in regard to the appearance of the bacilli in these cases. In the sputa the bacilli are scattered—they are seen at various points. But the general experience has been that in connection with the urine the bacilli are present in the arrangement that you get in pure cultures of the bacilli. They have the form something like that you see there, and sometimes a little more pronouncedly S-shaped. So far as this specimen goes, there are three glasses, and there are in the three but two of these little colonies, and no free bacilli at all. I think it is quite possible that they have sometimes

been overlooked, owing to the fact that they are in colonies, and are few and far between, and may not have been made out.

DR. J. C. WARREN showed a specimen which illustrated the result of an operation of

WIRING THE FRAGMENTS FOR UNUNITED FRACTURE
OF THE FEMUR.

The wire was twisted and left buried in the bone, after which the superficial parts healed over the wound. The specimen showed the bone with the suture *in situ* two years after the operation. Dr. Warren said that he understood there was no sinus in the soft parts, and that he thought the specimen interesting in that it showed what becomes of a wire suture buried in bone.

In connection with the question of burying the wire suture in the bone, DR. CABOT briefly reported the following case:

Last July a heavy man entered his wards in the Massachusetts General Hospital with a compound fracture of the patella. He had fallen from a high beer wagon into a street paved with cobble stones. Under either the opening was enlarged and the patella found smashed into a number of pieces. The greater part of it was removed piecemeal and the parts attached to the quadriceps tendon above and to the ligamentum patellæ below, were brought together and secured with two silver wires, the ends of which were turned down on the bone. Drainage-tubes were introduced into the dependent parts of the joint and an antiseptic dressing was applied. Healing took place by first intention, and two months later the man had a movable and useful knee.

On Christmas day, less than six months after the injury, this patient came to my office with a simple fracture of the same patella. He had for about a month had a habit of running up stairs two steps at a time, and on the previous evening he had run down stairs two steps at a time to show what he could do. Missing his footing he fell and broke the patella anew. The separation had occurred about on the line of the union of the former fragment. He was sent again to the hospital where he was under Dr. Porter's care, and the case was treated on a splint like an ordinary simple fracture of the patella and he made a good recovery without accident. The wires never seemed to cause the least disturbance.

This shows how little reaction metal sutures may set up.

DR. CABOT then read some notes on the

COMPLICATIONS MET WITH IN HERNIOTOMY,²
and DR. MIXER reported a

CASE OF STRANGULATED INGUINAL HERNIA; HERNIOTOMY; CONTENTS OF SAC FOUND TO BE CANCEROUS; RELIEF OF SYMPTOMS.³

DR. ELLIOT said: I am sure it is a great point to realize the fact that the abdomen should be reopened if the trouble persists. I made up my mind, two years ago, that after any abdominal operation that did not do well I should reopen the abdomen, and I have never regretted that, and I have seen very good results. The curious thing is that in the literature of reopened abdomens, after ovariectomies especially, there have been several cases recorded where nothing has been

² See page 399 of the Journal.

³ See page 313 of the Journal.

found, no serous pathological change, and yet recovery has taken place when it seemed, before the operation, as if death were almost inevitable.

DR. J. C. WARREN: I remember to have seen, in consultation with Dr. W. J. Otis, a case of reduction *en masse*. When I first saw the hernia it had been reduced by taxis, but the symptoms persisted. I opened the coverings of the sac, and found a good, open ring. There was a neck, and just inside that neck was a strangulated loop of intestine, which could be felt. Introducing the finger into the first ring, a second one could be felt behind it. That was divided, and the intestine replaced. The patient died very shortly afterwards, but he died with a reduced intestine. I made the diagnosis of a reduction *en masse* with an inner sac and an hour-glass contraction. The intestine went out of one compartment into another.

Another interesting point in connection with herniotomy is the condition of the intestine. What shall we do in a case of very bad-looking intestine? A case bearing on that point occurred to me a year or two ago: A lady was suddenly seized with a strangulated hernia, which was very acute, and in about thirty hours from the first symptoms I operated. The intestine was very black indeed, but careful inspection of it showed that it was entire. It had a shining surface. I decided to replace it, but put a tube in, so that the wound was not closed entirely. The patient did remarkably well, and had several movements from the bowels during the latter part of the first week, and I congratulated myself that I had replaced the intestine. About the tenth day, fecal discharge began in the sinus where the drainage-tube had been. There were very copious discharges. The lady's father was a physician, and was very much disturbed, and wanted to know what the prospects were. I concluded that it would probably heal spontaneously, and it did heal in about three months from the time of the original operation. It closed spontaneously, and the patient has had no trouble from stricture since. A slight hernia existed six months or a year later, which necessitated the use of a truss. I have not heard from the patient since that time. Many of these fecal fistulae do close spontaneously. They are not exactly the same thing as an artificial anus, because the mucous membrane of the bowel is not in contact with the skin, but communicates with the skin by a little fistulous opening, which is of a cicatricial character, which may become stricture, like any other canal of that kind, and thus close the opening. Such a canal may be the remains of an abscess which has burst and discharged fecal contents. These cases heal more readily than those of artificial anus, which do not tend to heal.

The question of resection of the intestine comes up here, and it seems to me, although I have had little or no experience in that operation, that the indications are not met so well by a resection and suture of the intestine as by bringing it out and suturing in the way that Dr. Cabot did, the great point being to relieve the obstruction; that is more completely relieved by an artificial anus, than by restoring the continuity of the canal, which may not let out all the gas, owing to pressure, kinking of the bowel, adhesions to the wound, etc. And then we all know how much easier it is to suture a bowel secondarily, when there are no complications present except those of a fecal fistula.

DR. H. L. BURRELL then showed a

SPECIMEN OF THE REIMPLANTATION OF A TREPHINE-BUTTON OF BONE.⁴

DR. CABOT: I received a note from the secretary, asking me to bring a trephine-button, which perhaps may be of interest to look at, by the side of this specimen of Dr. Burrell's, as illustrating what sometimes is found in trephining for epileptic or other brain symptoms. The child had had a blow on the head, I think two years before, had suffered from convulsions for the intervening two years very constantly, and during the year before the operation the convulsions were as many as twenty-four or twenty-five a day. There was nothing to feel at the seat of fracture except two cicatrices in the skin. A crucial incision was made through the cicatrices. On coming down to the bone a very minute crack was found in the outer table, and the bone including that was taken out. We were fortunate in striking a prominence on the inside, pretty nearly on the plumb centre. Running from this prominence down toward the base was a line of depressed bone, and that was cut out with a cutting forceps. Everything went perfectly well surgically, and the wound healed by first intention. The child was isolated during the healing. During the three weeks of isolation there were no convulsions. The patient was then brought down into the ward, because some contagious cases came in. That night she had seven or eight convulsions, and since that time they have been very nearly what they were before the operation. After the changes in the brain had already taken place they could not be removed. I will say that in that case the child had been seen the year before the operation, and an operation was advised at that time, and then the mental capacity was very good. In that year of waiting the patient changed from a very bright child to almost a drivelling idiot.

DR. WARREN: I would like to ask if this operation of replacing the button has ever been done before.

DR. BURRELL: So far as I know, MacEwen is the originator of the procedure. The literature of the subject is necessarily very small, because it is comparatively a recent thing.

With the exception of an allusion made by Dr. Senn in a series of letters written to the *American Journal of the Medical Sciences*, which appeared last summer, the only definite statement is in 1885, by MacEwen, where he reports his eleven cases. He takes a button and subdivides it and reimplants it, in order that he may have drainage. I do not know that an autopsy of any of his cases has been obtained.

DR. GANNETT: I made the autopsy in Dr. Burrell's case, and was very much struck by the entire absence of evidence of any reactive inflammation either in the dura or in the brain below. There was a small circle which corresponded with the circle of bone, but with that exception there was no thickening whatever in dura; showing that there had been no reactive inflammation there, and consequently it must have been a very antiseptic operation.

DR. NEWELL: I would like to ask Dr. Burrell what he put the bone into after it was removed.

DR. BURRELL: It was placed in a warm sublimate solution of 1-1000, and kept there until it was replaced.

⁴ See page 313 of the Journal.

NEW YORK NEUROLOGICAL SOCIETY.

MEETING held Tuesday, March 6, 1888, the President, DR. C. L. DANA in the chair.

DR. DANA presented the report of a case of

THOMSEN'S DISEASE,

with specimen of muscle, in some respects an atypical case. The patient was a male, thirty-five years of age, single. He had been delicate as a child, and at fifteen or sixteen years had masturbated, but not to excess. At fourteen years he had developed talipes varus in the left leg, but tenotomy had been performed with cure. The symptoms of the disease in question had not appeared until the twentieth year, when the patient had commenced to notice stiffness of the hands and difficulty in opening the hands when closed; also stiffness of the leg and of the muscles of mastication. The patient tired easily, especially in the arms. Until recently he had had a high-pitched child's voice and a child's larynx. Erections were incomplete and there was mental difficulty in concentrating his thoughts. The muscle development was good. Measurement around the biceps gave ten inches in both arms. The dynamometer showed forty degrees in the right hand and thirty-eight in the left, the normal measurements by the reader's dynamometer being forty-five to fifty. There were tonic contractions of the calf muscles and of the pillars of the fauces. Striking the muscles of the arm or forearm caused tonic contractions in these muscles. Striking the biceps with the percussion hammer would cause a welt and a myoid tumor as well. There was no increase of irritability to mechanical stimulation in the nerves. By galvanism Erb's reaction was obtained. There was increased muscular irritability and a closure tonic contraction which persisted as long as the current continued to be passed. There was closure tetanus both to the cathode and the anode. There was no opening contraction to either pole. A peculiarity of the reaction to faradism was that in the arm the contractions persisted after the current ceased to be passed. There was no ankle clonus, no increase of the reflexes and no spastic condition. In the eye the fundus was normal, but there was a fibrillary contraction of the muscles of the lid. There was vasomotor weakness, the hands and feet were red and easily became cold.

A piece of the supinator longus had been removed, and for comparison, a piece of the same muscle from the reader's own arm. These specimens had been placed in weak alcohol, and stained with picro-carmin and bismark brown. The specimen taken from the patient showed increase of the nuclei of the sarcolemma, an increased number of fibres, and in addition, a dichotomous division of the fibres such as was found in the muscle of the heart. This was characteristic of Thomsen's disease, and was supposed to indicate reversion to an earlier type. The tonic contractions of this disease, too, were characteristic of unstripped muscle fibre.

DR. GEO. W. JACOBI had examined the specimens and compared them with the specimens from his own case. He did not consider this the typical case which Erb's monograph had described. Erb had excluded all of the published cases but eight. Erb's typical case showed no disease of the central nervous system. In Dr. Dana's case there was at least a suspicion of

such disease. The reactions of the muscles, too, were incomplete, or failed to comply with the requirements as given by Erb. The speaker did not, however, believe in Erb's lines. He thought they were too close. While this case did not come under the heading as limited by Erb, it did come under the name as understood by others. Erb's theory was that of a disorder of the muscles themselves, a congenital malformation of the muscular system. If the fissuring of the muscles and the increase of nuclei in the case under discussion were dependent upon a central affection, this alone was an interesting fact. It would demonstrate that microscopically alone, a diagnosis of myomotonia congenita could not be made. Our knowledge of primary muscle affection was not yet on a solid basis. It was possible that there was first trouble in the central nervous system, from which the other proceeds.

DR. HEITZMAN had examined the specimens with a low power and had been impressed with the belief that this was not a genuine case of Thomsen's disease. In the typical case the nuclei of the muscles were augmented. The reader of the paper had made Erb's mistake when he spoke of the nuclei of the sarcolemma. The sarcolemma was a structureless membrane. There was also augmentation of the sarcoplasts or muscle corpuscles. There was too much muscle substance from the earliest period. Hence the name, myomotonia congenita. Dr. Dana's case, on the contrary, could not be called congenital, as the disease had not developed until the twentieth year. Second, the muscle fibres were not distinctly augmented in size. If compared with those in Dr. Jacobi's case, the difference was marked. Third, the fissuring was not prominent. For these three reasons he was loth to accept the diagnosis. He was, on the other hand, unable to tell what else the condition could be.

DR. EMERSON had examined the eyes. There was no insufficiency of the muscles and the pupils had reacted all right.

DR. STARR realized that we could not yet lay down any positive deductions in regard to electrical reactions. In degeneration we got the pure reaction of degeneration, an intermediate reaction of degeneration, and the normal muscle reaction. Erb had given the reactions for three cases only. Other cases might not substantiate their results. He considered Dr. Dana's case valuable, and one to be put on record. For reliable data a large number of cases were required. Even Dr. Heitzman's objection of muscular anomalies was not fatal to the theory of its being a case of Thomsen's disease.

DR. DANA explained that he had not called the case one of myomotonia congenita, but an atypical case of Thomsen's disease. It remained to be proved whether myomotonia was always congenital. He had recently seen a case which commenced at the eighth or tenth year. Since Erb's book, four additional cases had been reported besides his. He agreed with Dr. Heitzman that the enlargement of the fibres was not positive. He had with a stage micrometer measured the fibres in the specimen from Dr. Jacobi's case, in that from the case under discussion, and in that from his own arm. He had found the fibres in the first, $\frac{3}{16}$ to $\frac{1}{16}$ of an inch broad; in the second, $\frac{1}{16}$ to $\frac{1}{32}$, and in his own $\frac{1}{32}$ inch. Thus, in the case under discussion, some of the fibres were larger and some smaller than the normal. The increase of the nuclei, however, was in some of the specimens shown

typically as in Erb's plate. He acknowledged that the fissuring might have been produced artificially by tearing. Electrically there was greatly increased irritability of the muscles both to galvanism and faradism. The contractions were tonic with closure tetanus. There was normal excitability of the nerves. Clinically, the patient presented the phenomena of Thomsen's disease. It remained to be proved whether the phenomena of Thomsen's disease could be produced by disorders in which the central nervous system was involved.

DR. STARR presented a specimen of

TUMOR OF THE BRAIN.

The patient was a woman, at the time of death, fifty-six years of age, who for two years had presented the general symptoms of tumor of the brain: vertigo, projectile vomiting, dulness of the mental faculties, and optic neuritis. During the last five months she had been carefully examined, but without obtaining any evidence which would locate the tumor, if one occasion were excepted, when, during an attack of vertigo, she fell forward and to the right. This was not a permanent symptom, and was the only evidence pointing to cerebellar disease. The tumor was of the size of a hen's egg. It was found on the under surface of the tentorium, simply resting upon and compressing one lobe of the cerebellum. There were no adhesions, and it was unfortunate that no symptoms had pointed to its location, as it might have been easily removed. In 1878, Nothnagel had remarked that tumors of the lateral lobes of the cerebellum did not give rise to the symptoms of incoordination common to other cerebellar tumors.

DR. J. WEST ROOSEVELT presented the report of a case of

BASEDOW'S DISEASE, WITH AUTOPSY.

The case was one of negative interest. The patient had been admitted to the wards of the Roosevelt Hospital, May 25, 1887. The patient was a female, widowed, forty-seven years of age, a housekeeper. Both the personal and family history was good. Two years before admission the patient had commenced to complain of palpitation, dyspnoea upon exertion, and swelling of the throat, which was largest upon the right side. The patient could not lie upon the right side. In the course of a year the eyes commenced to protrude, and at the time of entering the Hospital she had a profuse watery diarrhoea.

The pupils were found to be equal, the reaction to light and accommodation good. The lids did not follow the eyeballs. The neck measured thirteen inches around the lower thyroid region, and ten and one-half inches around the upper thyroid region. There was dysphagia to solid food. The pulse was 100 to 120, and the respiration 38. The apex-beat was found in the fifth space, mammary line. There was epigastric pulsation, and the area of dulness was slightly increased. There was a short systolic murmur at the apex. There was a systolic thrill over the jugulars, and a continuous venous hum. The pulmonary resonance was exaggerated. The veins of the retina pulsated, the arteries did not. There was no tremor. The patient lived until May 31st. She suffered from a watery diarrhoea and restlessness, but was not otherwise sick. In walking to the bath-room one evening, she fell dead on the floor. Autopsy

showed the thyroid reduced in size, but still moderately enlarged and of a pink color. The kidneys showed a trace of fibrous tissue, but otherwise the organs were normal. There was apparently nothing abnormal in the medulla nor in the sympathetic or vagus nerves. Microscopic examination of these parts also showed nothing.

DR. W. O. MOORE had seen twelve cases, all females, average age forty years, the youngest thirty-one, and the oldest forty-five years. Ophthalmic examination had showed simply enlargement and tortuosity of the bloodvessels. Great relaxation of the bowels had been present in one of the cases, having as many as ten evacuations in the day, which it was impossible to control. Electricity had been of no avail in these cases. All had presented the three characteristic symptoms—exophthalmos, thyroid enlargement, and rapid heart action. All had the symptom to which Von Graefe first called attention; namely, a disturbance of the usual coördination of the movements of the eyeball and the upper lid, so that when the patient looks downward below the horizontal meridian the lid no longer follows the eyeball in its motion, but halts in its course. This fault in the action of the lid was supposed to be due to some defect in the orbicularis, and was not present in cases having prominent eyes from other causes. Occasionally, the prominence was so great as to cause the eye to be exposed at all times, both when waking and asleep. In one case in his experience suppurative had occurred, and the eye had been lost.

The patient, a female, aged forty-five years, stated, when a child, she had lost the sight of the right eye through an accident; that one year before coming under observation she had noticed commencing enlargement of the neck, dyspnoea upon exertion, and prominence of the left eye. Six months later vision for near objects commenced to fail, and four weeks before coming under notice the left eye had become painful and inflamed. Examination, December 13, 1886, showed in the right eye phthisis of the bulb, total corneal leucoma, and exophthalmos so marked that although the eyeball was atrophied, the lids were as full as in the usual healthy state. The eyelids on this side covered the globe fully when shut. In the left eye, the exophthalmos was so great that the lids were retracted to their full extent, and the eyeball was dislocated through the commissure of the lids. The ocular conjunctiva was chemotic, and the cornea was cloudy through its whole extent. At the upper border of the cornea was a serpiginous ulcer. In other words, there was present a keratitis from loss of nutrition and exposure to the air. The pulse was irregular at 110. The patient was admitted to the Post-Graduate Hospital, the outer canthus was cut, hot water applications were made, and the parts were protected by lanolin. In spite of treatment perforation took place, with escape of the vitreous and lens. The eye began to recede, and phthisis bulbi developed.

Had this case been seen earlier, the writer would have united the upper and lower lids, thus covering the eyeball. At the end of a few weeks the lids would have been reopened, when, as a rule, the exophthalmos would be found improved and the corneal trouble removed. For constitutional treatment, the patient should receive digitalis, ergot, and tonics. This case was remarkable from the fact that an eye was lost by suppurative, and that this loss was asso-

ciated with phthisis in the other eye. The loss of an eye from exposure was so rare that the writer knew of but ten reported cases in this country, while Wells reports only one case.

Dr. STARR had been interested in the report of Dr. Roosevelt's case. The fact that no lesion had been found in the sympathetic in this case did not, of course, prove anything conclusive. Ross had reported eight cases in which such lesion had been found out of twelve cases as far back as 1882. The pathology, however, was not clear. It was difficult to understand how any one lesion could produce all of the phenomena of this disease. The hypothesis accepted by Gowers was that of lesion of the vagus nucleus in the medulla. The rapid pulse would be accounted for by the loss of the inhibitory power of the vagus. It was known, too, that vaso-motor disturbances were produced by irritation of the medulla in this region. The speaker had, some time ago, collected twenty-one cases of lesion of the medulla, in eight of which the lesion was in its upper part, in the region of the nucleus of the tenth nerve. In all of these cases there were subjective flushings and objective increase of perspiration; while in the thirteen in which the lesion was in the lower part of the medulla there were no vaso-motor symptoms whatever, thus substantiating the hypothesis of the physiologists, that there is a vaso-motor centre in the medulla, and that this centre is in the neighborhood of the nucleus of the tenth nerve.

The speaker had personally observed seven cases, five in the female and two in the male. In all but one, palpitation of the heart had been the first symptom. This disproved the theory that the goitre was primary, and that the other symptoms were due to the pressure of the tumor upon the pneumogastric nerve. The pulse had ranged between 90 and 155. In all but one the eyes had been prominent. In six there had been nerve symptoms, in four tremors, in four Von Græfe's symptom, in six flushes. Mental disturbance had been present in one case in which there had been delirium every night for several months, and subacute mania for several weeks. The first symptom in this case had been insomnia, which resisted treatment. The reader supposed it to have had its origin in a condition of the vessels of the brain similar to that in the back of the eye and the thyroid gland. Digitalis had done no good in his experience. Ergot and bromide had quieted the tremor, but no drug which he had tried had reduced the heart. He had used electricity according to Benedict's recommendation, but without result. He had himself, when in Vienna, watched the treatment of three cases in which Benedict had given a good prognosis, but had failed to find any reduction of the pulse while the galvanism was being used. In his own cases he had tried every method described as galvanization of the sympathetic. He had placed the poles upon either side in front of the sterno-cleido-mastoid, behind the sterno-cleido-mastoid, and at the back of the neck and epigastrium, carrying the current as high as nine milliamperes, which was as strong as could be borne with a small electrode, and he had never been able to obtain any retardation of the pulse. Dr. Janeway expressed himself as having had the same experience.

Dr. ROCKWELL had met about thirty cases of this disease, and in nine cases he had obtained an approximate cure. He had employed diet, galvanism, and

very full doses of digitalis, bromide of zinc, ergot and iron. He had authentic records of his results. He believed that the cases not benefited by treatment were organic, and that those benefited were functional in origin. Those having all of the cardinal symptoms were more often responsive to treatment than those in which the symptoms were more incomplete. He recalled a case in which there was a pulse of 110 reduced to 80. There was puffiness of the eye-lid in this case. In the galvanic application one pole had been placed over the eye-lid and the other behind the sterno-cleido-mastoid muscle at its upper third. In another case presenting the three symptoms for several years the pulse had ranged from 130 to 150. There was dilatation of both pupils, and a pulsating swelling over the solar plexus. This patient was placed upon a milk diet and persistently treated for many months when the pulse had fallen to below 100 and the swelling of the thyroid and the exophthalmos had become less.

Dr. STARR asked whether Dr. Rockwell had obtained reduction of the number of the heart-beats while the current was being used, also whether he had ever obtained paling of the face and dilatation of the pupils, phenomena which follow galvanization of the sympathetic when needles are used.

Dr. ROCKWELL replied that he had not made his observations during the application, but that subsequently such slowing had been demonstrated. Lowering of the pulse was also a very common result of general faradization.

Dr. GEORGE W. JACOBY considered exophthalmic goitre a rare disease. For eight or nine years he had seen in his dispensary six to seven hundred neurological cases a year. Not more than a dozen of these had been cases of exophthalmic goitre. The patients had been regular in attendance, and treatment had been persistent, but he had tried every means heralded without result. Sub-aural galvanization had been without effect upon the color or the pulse. He considered the disease a hopeless condition. Bodily and mental rest furnished about all which could be done. He had tried faradism according to the recommendation of Vigouroux, but also without result.

He thought the exophthalmos the least constant symptom. Where goitre was present one side of the neck was usually larger than the other. Some said that the right was always the larger. This he could contradict, as in a case which he had recently seen with Dr. Birdsall the enlargement had been equal upon both sides. Von Græfe's symptom was not always present. Tremor was often the first symptom. In one case in his experience tremor had existed for a year before the development of the other symptoms. At the end of the second year these had become well-developed, and bronzing of the skin also was present.

Vigouroux had stated that the electric resistance was diminished in all cases, and even in the commencement of the disease. This, if true, would be an important diagnostic point. In twenty cases published by Wolfenden, this lowered electrical resistance was present. Two of these cases are published in full. In one of the latter the resistance was only 300 ohms. It was mentioned that there was profuse sweating in this case. In the second the resistance was 200 ohms. Of this case it was said that there was clamminess of the surface and sweating. In the other thirteen cases the

resistance was from 500 to 1200 ohms. The speaker said that the standard of resistance, however, varied according to the method used. It had been given as high as 300,000 to 400,000 ohms, by Jolly. Gärtner gave it as 30,000 to 40,000, and here we estimated it at 1-3 or 1-4, that he had recently tested the resistance in three cases, his method having been to place the body in the circuit, the electrodes being equal in size and wet. When the galvanometer needle ceased being deflected the body was taken out of the circuit and a resistance coil inserted until the deflection of the needle was again brought to the same point. The amount required equalled the resistance of the body. Comparative observations were at the same time taken upon himself. The first case was that of a female twenty-eight years of age, with exophthalmos palpitation and sweats. The resistances obtained were as follows:

Through the palms, patient	6000 Ohms.
" " " self	8000 Ohms.
Through the goitre, patient	1200 Ohms.
" " " self	2400 Ohms.
Through the posterior part of the neck, patient	1400 Ohms.
" " " self	2400 Ohms.

Second case, a patient of Dr. Birdsall, presented goitre with palpitations and exophthalmos, and the comparative observations were taken upon Dr. Birdsall and himself. The resistances obtained were as follows:

Patient through the hands	5000 Ohms.
" " " goitre	800 Ohms.
" " " posterior part of the neck	1000 Ohms.

The measurements in his own case were respectively 5,500, 2,400 and 2,000 ohms; and in Dr. Birdsall's case, 8,000, 1,000 and 1,000 ohms.

Third case—

Patient through hands	5000 Ohms.
" " " goitre	1000 Ohms.
" " " neck, antero-posterior	1500 Ohms.
Control subjects (two) hands	11000 and 10000 Ohms.
" " " Thyroid	4000 and 3000 Ohms.
" " " Neck	3000 and 3000 Ohms.

The reduction was thus scarcely one-quarter, certainly not one-half, and not more than would be accounted for by the maceration of the skin due to the abundant perspiration in these cases, or, as in the goitre to the fluxion of blood. The speaker failed to see how any importance could be attached to the test as a symptom.

Dr. DANA was surprised to hear that there was any dispute in regard to the possibility of lowering the pulse by galvanism. In a case of Basedow's disease (in Bellevue Hospital a pulse of 140 would be found lowered 15 or 20 beats after the current had been applied. The sedative effect of galvanism was generally admitted, though we could not say whether it was produced through the pneumogastric or the sympathetic nerve. Dr. Starr's theory he thought incorrect. Lesion of the nucleus of the pneumogastric should give the same symptoms as division of its trunk, and this never gave rise to the phenomena of Basedow's disease. It might, perhaps, be said that this disease was due to lesion of the nucleus of the pneumogastric and neighboring parts. The speaker thought that the resistance was diminished in these cases, at least slightly, perhaps 1,200 ohms. In testing he placed one electrode in the region of the seventh vertebra and the other on the sternum.

Dr. ROOSEVELT had had the same experience as Drs. Starr and Jacoby. He had used both strong currents and weak currents without any influence on the

sympathetic nerve. He was surprised to hear digitalis recommended. He believed that digitalis was without value for heart failure except from organic disease. He had had five cases of exophthalmic goitre under observation. Two of these had improved, but both were cases of young anæmic girls. The measurement of electric resistance he thought a difficult problem because the factors varied.

Recent Literature.

Diseases of the Joints. By HOWARD MARSH, F. R. C. S., Senior Assistant Surgeon to and Lecturer on Anatomy at St. Bartholomew's Hospital, etc. With sixty-four illustrations and one chromo lithograph. Philadelphia: Lea Brothers & Co. 1886.

This volume of four hundred and fifty-three pages, with its many illustrations of pathological processes, (and apparatus) a "clinical manual for practitioners and students," and closely resembling in its general characteristics the volumes of the excellent series which have preceded it, is an interesting contribution to the literature of this subject. Symptomatology, diagnosis and treatment are most conspicuous. Pathology occupies a secondary position, which, without doubt, makes a decidedly practical working manual at the risk of incurring incompleteness in diagnosis. In a volume so comprehensive it is surprising that so little importance is attached to the influence of tuberculosis in joint affections; a striking contrast to the widely-spread German theory. Also in the treatment of this class of cases Marsh differs widely from German surgeons, who have reported exceedingly satisfactory results, by recommending movable apparatus of moulded leather, or metal, in preference to plaster-of-Paris. Rest in its broadest sense plays the chief rôle in treatment; not only a recovery, but also a good functional result being claimed for this method. In regard to joint surgery the writer evidently belongs to the conservative school. The book is well-written, and its concise, striking style forces upon the mind of the reader many practical facts of lesser importance easily overlooked by a student or a surgeon of limited experience in a general review of the subject. Of especial interest is the chapter on "Bone-setters," which gives a satisfactory explanation of many apparently "miraculous cures," the author culling from a system enshrouded by fraud those facts of real value to the patient. Also the excellent description of "congenital dislocation of the hip" is well worth the time spent in its perusal.

—We learn from the *British Medical Journal*, that a new system of drill, combining with it physical training, is being tried at Aldershot, where a number of men were recently put through the exercises in the presence of the Duke of Cambridge. Major-General P. Smith, from whom the idea emanated, maintains that the physical training of a soldier is entirely neglected in the routine of regimental drill, and, with others of high military standing, realizes the want of a minor drill, which combines with it physical training.

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SYSTEMATIZED ACTIVE EXERCISES IN NERVOUS AND MENTAL DISEASES.

DR. CHARLES K. MILLS, in a paper read before the Philadelphia County Medical Society, has called attention to the value of systematized active exercises in the treatment of nervous and mental disease. He alluded to the value of the writings of the Drs. Taylor, of New York, Drs. Benjamin Lee, Dujardin-Beaumetz and Schreiber, in regard to general medical gymnastics, and of Mr. Blaikie's two well-known books on physical culture to preserve health. Mills has found properly guarded gymnastic exercise of value in neurasthenia, hysteria, habit-chorea, neuritis, lateral spinal curvature, melancholia, idiocy, insanity, asthma, minor chorea, general nervousness, lithæmia, diabetes, ataxias, paralyses, and, with special form of exercise, hæmiplegia, monoplegia, infantile paralysis, atrophy, aphasia and writer's or telegrapher's disease.

Of its use for the insane he says: "I believe insanity affords a great field for such treatment. In the first place, such exercises will do much toward improving the frequently deteriorated physical condition of the insane; secondly, they afford a method of calling out and improving the impaired mental faculties; and, thirdly, they constitute another valuable means of supplying to the insane that, which all alienists now agree is most important to them—occupation. By means of systematized exercises, the insane can be provided with an additional 'rational physiological outlet' for their morbid muscular energy, on the one hand, and, on the other, with a rational physiological method of calling them out of their muscular and general torpor. In the Insane Department of the Philadelphia Hospital, even patients, in the profoundest depression, could, by sufficient persistence, be aroused to the performance of some movements; others did moderately well; some very well. The difficulty of fixing the attention of these patients, and yet the possibility of doing it by sufficient effort has been clearly shown."

In the idiot schools, under Dr. Kerlin in Pennsylvania, and Dr. Brown in this State, regular gymnastics

have been of the greatest value; and at the insane asylum in Dixmont, Dr. Mills might have found an admirable illustration, if the daily gymnastic drill of ten years ago has been kept up, for the benefit to the patients was then very manifest.

It is impossible to follow all the details of this excellent paper, but it is all comprehended if one says that all people need exercise or some substitute for it, and the ill even more than the well. Dr. Mills recommends the complicated apparatus of Ruebsam, and the simple pulling weights of Reach & Dowd. In Boston, excellent pulleys and weights are sold at the low cost of four and six dollars, which have proved invaluable to many invalids and delicate people. In neuralgia, muscular rheumatism, constipation and the host of symptoms associated with what is known as poor health, as well as in more serious troubles, judiciously used under the general direction of a physician, these simple measures have often been of great service.

LUYS'S EXPERIMENTS ON THE ACTIONS OF MEDICINES AT A DISTANCE IN HYPNOTIZED SUBJECTS.

At one of the sessions of the Académie de Médecine, Paris, during the last half of the year that is past, M. Luys, of considerable reputation as an alienist and author of valuable treatises on the nervous system, reported a series of experiments with hypnotized subjects, in which remarkable results were claimed by simply holding, first near, then at a little distance from these subjects, sealed vials containing certain medicinal substances. Thus, a vial containing a small dose of sulphate of strychnia, placed near the back of the neck, would determine "bilateral contractures, with convulsive shocks and stiffness of the body, turgescence of the face and thyroid body." Atropine occasioned a stupefaction; a vial of alcohol in a few minutes "determined phenomena of drunkenness." The morphine vial caused different symptoms, according as it was placed on the left or the right side of the nucha: if placed on the left side, the subject became violently irascible and disposed to fight; if placed on the right, he was calm and tranquil as a summer eve. A large number of drugs was experimented with, all producing different and characteristic effects.

Such was the subject of a sober, somewhat lengthy communication presented to the Academy on the 30th of August. It is needless to say that the extraordinary statements of M. Luys were received with incredulity, if not derision, although the French mind is disposed to accept almost any absurdity connected with hypnotism.

At this meeting, a Committee of three was appointed by the President to examine the facts communicated by M. Luys, and report at a future meeting. This Committee, through their Chairman, reported the result of their investigations at the session of the Academy, March 6th.

From this communication it would appear that the scientific validity of M. Luy's experiments was rendered null and void by simple absence of the Baconian method of exclusion, as well as by what the late Dr. George M. Beard pointed out as a fruitful source of fallacy in testimony, unintentional collusion between the operator and the subject. Luy's experiments were repeated, and found to correspond to the statements made in his communication, but everything took place as if by a pre-determined plan, and arranged for the occasion; and when the Commission tried their own sealed vials, the contents of which no one knew but themselves, they either obtained no results at all, or no results that were characteristic, definite, and significant.

TRANSPORTATION OF THE WOUNDED.

ASSISTANT SURGEON JAMES E. PILCHER read a paper, March 21st, before the Military Service Institute at Governor's Island, New York Harbor, on "The Transportation of the Wounded." It was confined to the matter of removing wounded men from the field by human bearers, and the methods he described were illustrated by a squad of men whom he had trained. He especially advocated the carrying of stretchers in hands of bearers, instead of on their shoulders, as was common during the late war; and in this connection he called attention to the fact that General Stonewall Jackson was killed by the falling of one of the stretcher-bearers, who were carrying him with the stretcher resting on their shoulders.

Among those who discussed the paper and commended the views expressed were Surgeons Spencer, of the 23d Regiment; Cochran, of the 8th Regiment; and Atwood, of the 14th Regiment; and Dr. Lewis Pilcher, of Brooklyn, a brother of Dr. James Pilcher, who also served in the war.

THE SPONTANEOUS ATTENUATION OF ERYSIPELAS OF THE FACE.

JACCOUD has published in the *Semaine Médicale* a "conference" with the above title, in which he calls attention to a fact familiar to physicians who have had large experience with erysipelas: namely, that a first attack of facial erysipelas, provided it may have been one of considerable severity, while not conferring immunity from subsequent attacks, nevertheless attenuates the symptoms of a second attack. He reports several cases where, with intensity of the local symptoms (tumefaction of the face and scalp, followed by desquamation, erythematous angina, etc.), there was neither fever nor constitutional disturbance. In all these cases the "streptococcus erysipelatis" of Fehleisen was found in the erysipelatous patches.

He considers this fact an illustration not of the "attenuation of virus," but of that modification in the "culture soil" which takes place as a result of a first subjection to an infectious agent, and which makes

the subject, if not refractory altogether, at least exempt from the worst symptomatic effects when the morbid microbe has again invaded the organism.

THE AMERICAN PUBLIC HEALTH ASSOCIATION PRIZES.

THE successful essays for the prizes offered by Mr. Henry Lomb, of Rochester, for 1887 have just been printed. The subjects and the authors are as follows: "Healthy Homes and Foods for the Working Classes," by Victor C. Vaughan, M.D., Ph.D.; "The Sanitary Conditions and Necessities of School-Houses and School-Life," by D. F. Lincoln, M.D.; "Disinfection and Individual Prophylaxis against Infectious Diseases," by George M. Sternberg, M.D.; "The Preventable Causes of Disease, Injury, and Death in American Manufactories and Workshops, and the best Means and Appliances for Preventing and Avoiding Them," by George H. Ireland.

Mr. Lomb again offers, through the American Public Health Association, two prizes for the current year, on the following subject: "Practical Sanitary and Economic Cooking adapted to Persons of Small and Moderate Means"—one of \$500, and a second of \$200.

The judges are to be Prof. Charles A. Lindsley, New Haven, Conn.; Prof. George H. Rohé, Baltimore, Md.; Prof. Victor C. Vaughan, Ann Harbor, Mich.; Mrs. B. H. Richards, Boston, Mass.; Miss Emma C. G. Polson, New Haven, Conn.

The essay is expected to cover in the most specific manner methods of cooking, as well as carefully prepared receipts, for three classes: those of moderate means, those of small means, and those who may be called poor. For each of these classes, receipts for three meals a day for several days in succession should be given, each meal to meet the requirements of the body, and to vary as much as possible from day to day. One requirement will certainly demand original work: Formulas for at least twelve dinners, to be carried to the place of work, and mostly eaten cold, are to be given. Healthfulness, practical arrangement, low cost, and palatableness should be combined considerations. The object of this work is for the information of the housewife, to whose requirements the average cook-book is ill adapted, as well as to bring to her attention healthful and economic method and receipts.

Competition is open to authors of any nationality, but it is intended that these essays shall be essentially American in their character and application. The prizes are sufficiently liberal to call out honest and original work.

We are glad to notice increasing evidences of the realization among the well-to-do, of the importance of encouraging a knowledge of wholesome and economic methods of cookery among the people at large, and simultaneously a disposition to increase the opportunities for obtaining such a knowledge. The Industrial

School at the North End of Boston (having its origin in the liberality and zeal of a wealthy lady), which has just made its annual report, gives instruction in cooking, among other useful things, to a very large number of girls.

MEDICAL NOTES.

—Foreign exchanges state that the cause of the death of the late emperor of Germany was renal colic. The emperor had of late years suffered from several very severe attacks of this affection, which he bore with great fortitude, though suffering on each occasion from weakness attendant on the sleeplessness caused by the attacks.

BOSTON AND NEW ENGLAND.

—The last annual report of the Lowell Hospital gives the following statistics for the year 1887:

In Hospital, January 1, 1887, 18; males admitted, 103; females admitted, 156; total admissions, 264; total number treated, 282. Discharged, 243; died, 21; total number discharged and died, 264; remaining in Hospital January 1, 1888, 18. Per cent. of deaths to the number of patients treated, 7.4. Per cent. of deaths, excluding deaths within twenty-four hours of admission, 6.0. Largest number of patients in Hospital on any one day, 37. Smallest number of patients in Hospital on any one day, 11. The 282 patients treated remained in the Hospital 7,188 days during the year, an average length of stay of 25.49 days per patient.

—A Committee of the Trustees of the Johns Hopkins Hospital, of Baltimore, has been in Boston this week to examine the administrative working of its hospitals. The City Hospital, the Massachusetts General and the Children's Hospital were visited and the system of administration obtaining at each investigated. From Boston the committee goes to New York with the same object in view. The buildings of the Johns Hopkins Hospital are ready for occupancy and the Hospital will before long be open for the reception of patients.

NEW YORK.

—The annual dinner of the New York Polyclinic was held at Delmonico's, March 20th, with Dr. James B. Hunter presiding. This institution is in a flourishing condition, and has the names of 353 students (all graduates of medicine) on its books for the current year, a larger number than in any previous season.

—Mr. Henry Bergh, Jr., a nephew of the late Henry Bergh, has been elected President of the Society for the Prevention of Cruelty to Animals, in his uncle's stead.

—The Fassitt Bill, which places the Quarantine station on a more business-like basis by reducing the salary of the Health Officer of the port to \$10,000 per annum, cutting down the fees, and providing for the proper maintenance of the establishment from the

funds received from fees, has passed both houses of the Legislature, and received the signature of Governor Hill.

Miscellany.

LAPAROTOMY FOR TUBERCULAR PERITONITIS.

DR. JOHN HOMANS reports in the *London Lancet*, February 11, 1888, two cases of laparotomy for ascites caused by tubercular peritonitis, in both of which laparotomy and free drainage were followed by a good recovery. One of these cases is reported in Dr. Homans's little book, "Three Hundred and Eighty-Four Laparotomies for Various Diseases." The second patient "was a school-girl, seventeen years old, of healthy appearance. Her complexion was pale. Her umbilical girth was thirty-four inches. . . . On opening the peritoneum, April 20, 1887, ascitic fluid ran out, and, on further investigation, the whole abdominal cavity was found to be studded with small, hard, whitish nodules. They were on the uterus, intestines, and parietal surface of the peritoneum, both ovaries, and Fallopian tubes. One tube thickly studded with tubercles, with its corresponding ovary, was removed. The peritoneal cavity was carefully sponged out, but the ascitic fluid seemed to re-accumulate so fast that a glass drainage-tube was put in, and the abdomen closed. . . . Only about an ounce of fluid in the twenty-four hours was obtained by the drainage-tube, and on the third day it was removed. The patient went home at the end of three weeks."

On the 28th of December, 1887, this patient was reported as free from abdominal troubles, fever, etc., and as having a good appetite and being in a fair state of health.

THE DELICACY OF THE SENSE OF TASTE.

MESSERS. E. H. S. BAILEY and E. L. NICHOLS, who have published a number of observations on matters connected with the taste-sense, presented an additional paper on the subject to the American Association for the Advancement of Science, at its meeting August, 1887. This paper is published in *Science*, March 23d, and from it we make the following extracts:

The method pursued in the following experiments was as follows:—

Solutions of known strength were made of the substances to be tasted; then, by successive dilutions, several series of solutions were made from these, each one in the series being of one-half the strength of the preceding one. The bottles containing these solutions, and several bottles of water, were placed without regard to order, and the person to be experimented upon was requested to separate them into their proper groups by tasting them. In each series the last solution was so dilute as to be beyond recognition. All unrecognized solutions were classified as water.

The following typical substances were chosen for the test. The strength of the initial solution of each is given below.

1. (Bitter) quinine, one part in 10,000 parts of water.
2. (Sweet) cane-sugar, one part in 10 parts of water.
3. (Acid) sulphuric acid, one part in 100 parts of water.
4. (Alkaline) sodium bicarbonate, one part in ten parts of water.
5. (Saline) sodium chloride, one part in 100 parts of water.

The attempt was made to include other substances,

as aromatics, in the test; but it was soon found that the odor betrayed their presence without the aid of the sense of taste.

Other investigators have added astringents as a sixth class, but these substances are so often recognizable by odor, color, or some special taste not purely astringent, that it was thought best not to include them.

Tests by the method above described were made upon 123 persons; 82 being male, and 46 female observers.

The following table shows the amount of each substance which could be detected by the average observer:—

Substances.	Male observers detected.	Female observers detected.
Quinine. . .	1 part in 392,000	1 part in 456,000
Sugar. . .	" " 199	" " 204
Acid. . .	" " 2,080	" " 3,280
Soda. . .	" " 98	" " 126
Salt. . .	" " 2,240	" " 1,380

From the above results the following conclusions are drawn by these observers.

1. The sense of taste is vastly more delicate for bitter substances than for any others. It is possible to detect quinine in a solution that is only $\frac{1}{392,000}$ the strength of a sugar solution, and the writers have previously shown that quinine is only $\frac{1}{10}$ as bitter as strychnine.

2. The order of delicacy is, bitter, acid, salt, sugar, and alkali.

3. The sense of taste appears to be more delicate in women than in men. This is true in the case of all the substances excepting salt. As we had found a similar difference in favor of female observers in an earlier and independent set of experiments, which agreed in every essential particular with the results of the present test, we do not regard it as an accidental difference, or as likely to disappear in more extended investigations.

Marked differences in the delicacy of the sense of taste of different individuals were met with in the course of these experiments. There were persons who could place in the proper class solutions containing one part of quinine in 500,000, and other substances in correspondingly high dilution, while some failed to detect solutions of more than three times the above strength. In how far this was due to education we are unable to say. Among the men examined were many who have been accustomed to handling and recognizing drugs and medicines, and yet even these were frequently surpassed by female observers who had no such training.

In some previous experiments upon the sense of smell, of which an account appeared in *Nature* (loc. cit.), we noted almost as marked superiority on the part of male observers.

In a few cases the ability to detect a dilute sweet was accompanied by a lack of ability to detect dilute bitters. This peculiarity was, however, far from being a general one.

As quinine is so largely used as a medicine, especially in the Western States, it was thought that its habitual use might dull the sense of taste for this particular substance. Among the observers subjected to our experiments, the use or disuse of quinine seemed to have had no especial influence.

OBITUARY. WILLIAM B. GOLDSMITH, M.D.

DR. WILLIAM B. GOLDSMITH died of pneumonia at the Butler Hospital, in Providence, on the 21st inst., aged thirty-four. He had not been quite well since a professional visit to New Orleans, where he had a febrile attack last summer, and several times of late he had spoken of feeling ill. Although the initial chill was on the 14th, he kept about, supposing that he had taken a severe cold, until the 17th. After that he grew rapidly worse, the dusky color of the skin, the weak action of a heart, which had long caused him some uneasiness, and the rapid increase in the difficulty of respiration showing clearly to him quite soon that "the chances were against him." Although wishing to live, he regarded his death with a calmness and courage which one might well envy him, and made every preparation for it to the least detail, remembering each and all of his friends with that kind thoughtfulness of others, which, well, or ill, he never forgot.

At school, in college at Amherst, at the Medical School in New York, he was faithful, shy and reserved. After a short service as hospital interne he was appointed junior assistant at the Bloomingdale Asylum, where he afterwards became senior, under Dr. Chas. H. Nichols, having previously been with Dr. Chapin at the Willard Asylum. He was also, after his experience in two asylums in this country, a volunteer assistant of Dr. Clouston, in Edinburgh, and in the West Riding Asylum, as it was splendidly organized by Crichton Browne, and later he temporarily left his duties as superintendent to study a year with Westphal and Krafft-Ebing and others in Europe. A better training one could scarcely have. Dr. Chapin had few equals in the management of asylums. Dr. Nichols held the first rank in the observation and analysis of mental phenomena, and Dr. Clouston had no superior in the clinical study and treatment of the insane.

That Dr. Goldsmith made the best use of his opportunities is attested by his valuable work as physician and superintendent of the Danvers Asylum, where he was appointed at the age of twenty-eight, and of the Butler Hospital, where he succeeded the late Dr. Sawyer two years ago. It is not too high praise to say that no man in this country is doing better work in mental disease than he did, that the treatment of the insane has become more liberal and progressive throughout New England for what he has accomplished, and that no one could look forward more confidently to the first position in his specialty in this country.

Personally, Dr. Goldsmith was a gentleman in the highest and best sense of that much-abused word. No one who knew him well can ever forget, back of his formal, shy and sensitive exterior, that rare courtesy and considerate kindness which never failed him. He was honest throughout, both morally, and, which is more difficult, intellectually. In his standards for the conduct of life, and in his daily action upon them he did not disappoint his most critical friends.

Correspondence.

TRADE OR PROFESSION.

Boston, 235 Marlborough St., March 24, 1888.

MR. EDITOR,—A recent issue of your valuable Journal contained an article entitled "Trade or Profession," in which attention was called to an address by H. C. Merriam, D.M.D., delivered before the Maine Dental Society.

In your article and in Dr. Merriam's address, the difference between a trade and a profession is sharply drawn and the position of dentistry and its relation to medicine is well pointed out.

Not only is it true that while the practice referred to of obtaining patents and accepting royalties for inventions, which should be freely given to the profession, is permitted to continue unrebuked, dentistry cannot claim to be a branch of medicine, but it is equally true that it cannot claim

to be a profession at all. But I hasten to say that by no one is the practice more severely condemned than by the better class of dentists, nor would such men withhold their knowledge or their inventions, or stoop to accept a royalty for the same, more quickly than would a similar class of physicians or surgeons.

Already have our dental societies condemned the practice of patenting inventions and have in several instances refused admission to those who insisted upon pursuing such a course, and day by day increasing liberality in sharing knowledge is shown and professional jealousy and discord are frowned upon.

As in the medical profession, many men after graduating from reputable colleges fall into irregular methods and

adopt means for obtaining practice and gaining wealth not in keeping with their code of ethics, so it is true that many men practicing dentistry will do the same, but it cannot be doubted that there is a sincere and earnest desire among educated dentists to ennoble the calling, to increase its usefulness and to place it upon a higher plane than it has hitherto occupied.

Many men now begin the study of dentistry by a preliminary course in medicine, and as knowledge increases and educated men take up the work, it is hoped that the time will soon come when dentistry will be recognized not only as a profession, but as an important branch of medicine. Yours very truly,

SAMUEL A. HOPKINS, M.D., D.D.S.

REPORTED MORTALITY FOR THE WEEK ENDING MARCH 17, 1888.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diarrheal Diseases.	Diph. & Croup.	Scarlet Fever.
New York	1,481,920	800	302	18.46	24.59	1.25	8.32	3.64
Philadelphia	393,801	382	111	9.45	—	2.43	2.43	.27
Brooklyn	745,108	—	—	—	—	—	—	—
Chicago	725,000	—	—	—	—	—	—	—
St. Louis	420,000	—	—	—	—	—	—	—
Baltimore	417,000	190	73	9.44	13.78	1.59	—	—
Boston	400,000	223	64	13.50	13.95	1.35	5.85	2.25
New Orleans	242,750	111	20	14.44	13.20	6.16	2.64	—
Buffalo	225,000	114	46	18.00	1.53	.18	.09	.09
Washington	210,000	70	27	11.84	32.89	1.43	1.43	1.43
Pittsburgh	210,000	70	27	11.84	32.89	1.43	1.43	1.43
Montreal	186,257	—	—	—	—	—	—	—
Milwaukee	170,000	68	26	20.58	7.35	—	1.43	—
Providence	121,000	—	—	—	—	—	—	—
Richmond	100,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,000	—	—	—	—	—	—	—
Charleston	60,145	25	9	—	8.00	—	—	—
Portland	40,000	17	5	—	29.40	—	—	—
Worcester	68,383	29	10	10.35	41.40	—	3.45	6.90
Lowell	64,051	—	—	—	—	—	—	—
Cambridge	59,660	16	10	25.00	12.50	—	12.50	—
Fall River	56,863	36	15	11.12	19.46	—	—	2.78
Lynn	45,861	13	1	15.38	15.38	—	7.69	—
Lawrence	38,825	11	4	9.00	18.18	9.09	—	—
Springfield	37,577	11	2	18.18	18.18	—	18.18	—
New Bedford	33,393	9	5	33.33	—	11.11	22.22	—
Somerville	29,662	8	0	—	25.00	—	—	—
Salem	28,084	17	3	—	23.52	—	—	—
Holyoke	27,804	—	—	—	—	—	—	—
Chelsea	25,709	14	0	14.28	14.28	—	—	—
Taunton	23,674	9	0	11.11	22.22	—	—	—
Haverhill	21,795	6	3	16.66	33.33	—	—	—
Gloucester	21,713	14	1	14.28	28.56	—	—	7.14
Brookton	20,783	11	5	27.27	9.09	—	—	—
Newton	19,751	6	1	—	16.66	—	—	—
Malden	16,497	8	3	25.00	—	25.00	—	—
Fitchburg	15,375	8	3	—	—	12.50	—	—
Waltham	14,009	4	1	—	50.00	—	—	—
Newburyport	13,716	6	1	16.66	33.33	—	—	—
Northampton	12,846	—	—	—	—	—	—	—

Deaths reported 2,226: under five years of age 751; principal infectious diseases (small-pox, measles, diphtheria and croup, diphtheria, whooping-cough, erysipelas and fevers) 312; acute lung diseases 369, consumption 288, diphtheria and croup 102, scarlet fever 41, diarrheal diseases 36, typhoid fever 27, measles 26, whooping-cough 21, cerebro-spinal meningitis 19, malarial fever 16, puerperal fever 10, erysipelas nine, small-pox five. From typhoid fever, Philadelphia 11, Milwaukee seven, District of Columbia three, New York two, Boston, Baltimore, Pittsburgh and Newburyport one each. From measles, Baltimore nine, New York eight, District of Columbia seven, Pittsburgh and Milwaukee one each. From whooping-cough, New York six, Philadelphia and Baltimore three each, Pittsburgh and Cambridge two each, Boston, New Orleans, District of Columbia, Milwaukee and Haverhill one each. From cerebro-spinal meningitis, New York six, Philadelphia and Fall River three each, Chelsea two, New Orleans, Pittsburgh, Milwaukee, Lynn and Gloucester one each. From malarial fever New York nine, District of Columbia and Milwaukee two each, Philadelphia, Baltimore and New Orleans one each. From puerperal fever, District of Columbia three, New York and Boston

two each, Baltimore, Milwaukee and Taunton one each. From erysipelas, Boston five, New York three, Philadelphia one.

In 21 cities and greater towns of Massachusetts with an estimated population of 4,052,435, the total death-rate for the week was 22.58 against 24.37 and 24.03 for the previous two weeks.

In the 28 greater towns of England and Wales with an estimated population of 9,308,273, for the week ending March 3d, the death-rate was 21.5. Deaths reported 3,875: infants under one year of age 967; acute diseases of the respiratory organs (London) 488, whooping-cough 136, scarlet fever 59, measles 42, fevers 39, diphtheria 37, diarrhoea 28, small-pox (Sheffield 21, Leeds, Manchester, Nottingham and Bristol one each), 25.

The death-rates ranged from 34.2 in Blackburn to 13.4 in Sunderland; Birkenhead 18.2; Birmingham 18.9; Bradford 14.3; Halifax 23.4; Hull 19.3; Leeds 24.2; Liverpool 23.5; London 21.9; Manchester 25.7; Nottingham 20.1; Oldham 24.2; Sheffield 21.7.

In Edinburgh 21.1; Glasgow 27.6; Dublin 34.0.

The meteorological record for the week ending March 17, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, Mar. 17, 1888.	Barom- eter.	Thermometer.			Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.		
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration, Hrs. & Mins.	Amount in Inches.
Sunday, ... 11	30.25	24.0	36.0	31.0	80.6	72.0	85.0	79.0	S. E.	N. E.	N. E.	2	18	25	F.	O.	O.		
Monday, ... 12	29.44	33.0	36.0	32.0	81.0	100.0	100.0	97.0	N. E.	N. E.	N. E.	24	36	36	R.	N.	R.	12	.72
Tuesday, ... 13	29.38	27.0	40.0	24.0	94.0	67.0	80.0	84.0	N. E.	N. E.	N. E.	38	30	12	N.	F.	O.	18	.30
Wednes., ... 14	29.87	35.0	36.0	28.0	95.0	82.0	91.0	89.0	N.	N. W.	N. W.	15	21	18	N.	O.	O.	12	.22
Thursday, ... 15	29.97	39.0	45.0	34.0	72.0	46.0	65.0	61.0	N. W.	W.	W.	12	14	8	C.	C.	C.		
Friday, ... 16	29.72	39.0	48.0	32.0	72.0	51.0	74.0	66.0	S. W.	S. W.	S. W.	15	12	15	O.	O.	O.		
Saturday, ... 17	29.74	27.0	39.0	20.0	67.0	41.0	65.0	58.0	S. W.	W.	W.	26	24	16	C.	O.	C.		
Mean, the Week.	29.767	32.0	31.4	28.7				76.3										42	1.24

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.—The annual meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, April 2, 1888, at 9 o'clock. Election of officers for the ensuing year, election of new members. Readers: Dr. Bunly, "One, Possibly Two Cases of Graves Disease." Dr. Jolly, "Case of Tetany." Case of General Paralysis of Ten Years' Duration; Death from Heart Disease. CHARLES F. STRONG, M.D., Secretary.

SUFFOLK DISTRICT MEDICAL SOCIETY. SURGICAL SECTION.—There will be a meeting of this Section on Wednesday evening, April 4th, at 8 o'clock. Dr. M. H. Richardson will report "A Case of Nephropathy." Dr. D. W. Cheever will read a paper on "The Subsidence of Doubtful Tumors under the Use of Alterative Medicines." Dr. Royal Whitman will read a paper entitled "Observations on Forty-Five Cases of Flat-Foot, with Particular Reference to Etiology and Treatment." G. H. MONKS, M.D., Secretary.

DEATH.

Died at Providence, March 21st, of pneumonia, William B. Goldsmith, M.D., at the age of thirty-four.

BOOKS AND PAMPHLETS RECEIVED.

Massachusetts Total Abstinence Society. Annual Reports, 1887. Boston, 1888.

Annual Report of the Lowell Hospital Association, including the Reports of the Medical Staff and Superintendent. January 1, 1888.

Western Reserve University, Medical Department, Cleveland, O. Annual Announcement. Session of 1888-89.

The Drainage of a House. By William Paul Gerhard, C.E. Reprint 1888.

The Physician in Science and Letters. By William S. Ely, M.D., of Rochester, N. Y. Reprint 1887.

The Etiological Relation of Cervical Laceration to Uterine Disease. By Brooks H. Wells, M.D., New York. Reprint 1888.

Morrow's Atlas of Venereal and Skin Diseases. New York: William Wood & Co. 1888. Parts I and II.

Questions and Answers on the Essentials of Physiology, Prepared Especially for Students of Medicine. By H. A. Hare, B.Sc., M.D., etc. With illustrations. Philadelphia: W. B. Saunders. 1888.

The Hygiene of the Skin, or the Art of Preventing Skin Diseases. By A. Ravogli, M.D. Cincinnati: Central Medical Publishing Co. 1888.

Medical Classics. Sixth Volume of the Series. Diseases of the Heart. By Alonzo Clark, M.D., LL.D., Emeritus Professor of the Principles and Practice of Medicine, etc., College of Physicians and Surgeons, New York. New York: E. B. Treat. 1888.

Ophthalmic Surgery. By Robert Barlow Carter, F.R.C.S., Ophthalmic Surgeon to St. George's Hospital, etc., and William Adams Frost, F.R.C.S., Assistant Ophthalmic Surgeon to St. George's Hospital, etc. Illustrated with a chromograph and ninety-one engravings. Philadelphia: Lea Brothers & Co.

Modern Methods of Antiseptic Wound Treatment. Compiled from Notes and Suggestions of Eminent Surgeons. New York: Johnson & Johnson.

Lomb Prize Essays.—No. I. Healthy Homes and Foods for Working Classes. By Victor C. Vaughan, M.D., Ph.D., Professor in University of Michigan.—No. II. The Sanitary Conditions and Necessities of School-Houses and School-Life. By D. F. Lincoln, M.D., Boston, Mass.—No. III. Disinfection and Individual Prophylaxis against Infectious Diseases. By George M. Sternberg, M.D., Major and Surgeon United States Army.—No. IV. The Preventable Causes of Disease, Injury, and Death in American Manufactories and Workshops, and the Best Means and Appliances for Preventing and Avoiding Them. By George H. Ireland, Springfield, Mass. American Public Health Association. 1886.

Von Ziemssen's Handbook of General Therapeutics, Volume VI: Electrotherapeutics. By Wilhelm Erb, M.D. New York: William Wood & Co. 1887.

The Nervous System and the Mind; A Treatise on the Dynamics of the Human Organism. By Charles Mercier, M.B. London and New York: Macmillan & Co. 1888.

An Index of Materia Medica with Prescription Writing, including Practical Exercises. By Charles H. May, M.D., and Charles F. Mason, M.D. New York: William Wood & Co. 1887.

Practical Microscopy: A Course of Normal Histology for Students and Practitioners of Medicine. By Maurice N. Miller, M.D., Director of the Department of Normal Histology in the Loomis Laboratory, University of the City of New York. Illustrated with one hundred and twenty-six photographic reproductions of the author's pen-drawings. New York: William Wood & Co. 1887.

A Practical Treatise on the Medical and Surgical Uses of Electricity, including Localized and General Faradization, Localized and Central Galvanization, Franklinization, Electrolysis and Galvano-Cautery. By George M. Beard, A.M., M.D., and A. D. Rockwell, A.M., M.D. Sixth edition. Revised by A. D. Rockwell, M.D., with nearly two hundred illustrations. New York: William Wood & Co. 1888.

A Manual of the Physical Diagnosis of Thoracic Diseases. By E. Darwin Hudson, Jr., A.M., M.D., late Professor of General Medicine and Diseases of the Chest in New York Polytechnic; Physician to Bellevue Hospital, etc. One volume, octavo. One hundred and sixty-two pages. Nearly one hundred illustrations. New York: William Wood & Co. 1887.

Therapeutics of Circulatory Derangements, Weakness of the Heart Muscle, Insufficient Compensation in Cardiac Failure, Fatty Heart and Obesity, Alterations in the Pulmonary Circulation, etc. By Prof. J. M. Oertel, M.D., of Munich. With thirty-seven illustrations. Translated by Edward J. Edwards, M.D., M.R.C.P., London. New York: William Wood & Co. 1887.

Second Series Photographic Illustrations of Skin Diseases. Forty-eight quarto plates (seventy-six photographic cases from life), accurately colored by hand. An atlas and text-book, two hundred and eight pages. By Dr. George H. Fox, Professor Diseases of the Skin, College of Physicians and Surgeons, N. Y. Parts III and IV. New York: E. B. Treat. 1888.

Uecture.

CARTWRIGHT LECTURES. THE GENERAL PATHOLOGY OF FEVER.

BY WILLIAM H. WELCH, M.D.,
Professor of Pathology, Johns Hopkins University, Baltimore.

LECTURE I.

THERE is no subject in medicine of more general and varied interest than fever. The practitioner in every department of medicine, the pathologist and the physiologist, are equally interested in the investigation of the nature and effects of fever. Even the physicist and the chemist, who are not directly concerned with medical science, have lent their aid to the study of animal heat and its disorders. The history of opinion regarding fever is in great part the history of medicine itself, for no feature of the great systems of medicine from Hippocrates and Galen to the present century so characterizes these systems as the views held concerning the nature of fever. In consequence of the importance of the subject and of the number and ability of those engaged in its investigation it might be supposed that no chapter in medical science would be better understood than that pertaining to fever. That such is not the case is due to the fact which is becoming more and more evident that the reaction of the animal system which we call fever is dependent upon the most fundamental and essential properties of protoplasm and of nerve energy. In proportion as our knowledge of these properties increases and becomes more accurate, we gain a clearer insight into the complicated processes involved in the production of fever.

I should hardly have selected for this course of lectures a subject where so many problems remain unsolved, and which must necessarily be presented in so fragmentary a form, were it not that in all ages the opinions held concerning the nature of fever have controlled measures employed in its treatment. In proof of this one need not go back to the time when fever was regarded as an almost conscious struggle of an animal with a noxious principle, in which struggle the physician was to interfere as little as possible, or to the time when fever was supposed to result from morbid humors which the physician should aim to eliminate by the production of a critical discharge, or to the period when the treatment hinged upon the belief either in the sthenic or the asthenic nature of fever. In our own time the treatment of fever is intimately connected with the answers variously given to such questions as whether fever aids in the elimination or destruction of infectious agents concerned in its production; whether increased waste of tissue is a constant condition and a source of danger in fever; what part is played by infection, and what part by elevation of temperature in causing the grave symptoms of fever; what, in addition to lowering of temperature, are the effects of so-called antipyretic measures of treatment?

I need hardly say that the subject of these lectures relates to fever as a condition common to all febrile diseases. Some writers understand by the term fever used in this sense merely abnormal elevation of temperature, others elevation of temperature and the symptoms directly caused by this, and still others a

complex of symptoms of which increased temperature is the most prominent symptom, but not necessarily the cause of the others. In considering the general pathology of fever it is convenient to adopt the last meaning, although it would doubtless be less confusing if the word fever were applied only to abnormal elevation of temperature.

Increased temperature being the dominant and essential symptom of fever, all discussions as to the nature of fever center around the question: How is febrile rise of temperature produced? It is to the consideration of this question that I first invite your attention. As there are other aspects of fever which I wish to discuss, it will be necessary to present the matter belonging to this division of the subject in as succinct a form as is compatible with clearness. Twelve years ago Burdon-Sanderson brought together in an admirable critical review the results of investigations upon this subject up to that period. Since that time important additions have been made to our knowledge of the mode of production of fever.

In the wonderful preservation of a nearly constant temperature which characterizes in health the warm-blooded animals, three factors are concerned; namely, the production of heat within the body, the loss of heat within the body, and the regulating mechanism by which the varying heat-production and heat-loss are so balanced that the internal temperature remains practically constant. It is theoretically possible that the rise of temperature in fever may be due to the disturbance of any one or more of these factors. It becomes necessary, therefore, to consider the behavior of heat-production, of heat-loss, and of the regulating mechanism in fever.

We will begin with a consideration of the production of heat in fever. The amount of heat produced by the body is estimated by two methods, one known as direct calorimetry, the other as indirect calorimetry. In the method of direct calorimetry the animal is placed in a closed ventilated box, surrounded on all sides by a compartment containing water, or air, and the amount of heat discharged from the body is determined by the quantity of heat imparted to the surrounding water or air. If the temperature of the animal remain unchanged during the period of observation, the heat-production is equal to the heat-loss; if the temperature rise or fall, the amount of heat corresponding to this change of temperature — an amount determined by multiplying the weight of the animal by its specific heat, and by the number of degrees of altered temperature — is added to or subtracted from the quantity of heat imparted to the calorimeter. Time will not permit me to enter into experimental details in this connection; it must suffice to say that the method of direct calorimetry necessitates the introduction of a number of corrections which cannot be determined with absolute accuracy, so that the results obtained are of relative rather than of absolute value.

Hitherto the estimation of heat-production in fever by determining the entire amount of heat liberated from the body has been made only upon animals in which fever has been artificially produced. The most elaborate researches of this nature are those of Senator and of Wood.² The experiments of Wood are of the

¹ Delivered before the Alumni Association of the College of Physicians and Surgeons, of New York, March 29, 1898.

² Senator. *Untersuch. ub d. Fieberhaften Process*, Berlin, 1873. Wood. *Fever; a study in Morbid and Normal Physiology*, Philadelphia, 1886.

greater value, because he extended his observations over longer periods of time.

In four of the seven calorimetrical experiments of Wood on different fevered dogs, comparison can be made of the amount of heat produced hourly in fever with that produced by the same animal when fed and when in a state of hunger. During the period of fever the animal was also in a condition of hunger. I have computed from Wood's tables that the average hourly heat-production during seven days, described as first and second fever days, is a little over twenty-three per cent. greater than that produced by the healthy animal during a state of hunger, the minimum excess being one per cent., and the maximum 55.5 per cent. If a comparison be made of different periods during the existence of fever there are found to be even greater fluctuation in the amount of heat production than these figures would indicate, this amount being sometimes more than double that in hunger, and sometimes considerably less than the average production in hunger. Moreover, these experiments show no definite relation between the height of the temperature and the amount of heat produced, nor is it possible to deduce from them any relation between heat-production and the different stages of fever, such as the more recent calorimetrical experiments of Wood, Reichert and Hare, appear to show, and which will be described later. An important outcome of these, as well as of all similar calorimetrical experiments, is that although the heat-production of an animal in fever is greater than that of one under like conditions of nourishment, it is, as a rule, less than that of the same animal upon a full diet.

There are many reasons which make it important to control the experimental results obtained from animals in fever by corresponding observations of human beings. The agents used in producing experimental fever have been generally putrid fluids or pus, the injection of which causes sometimes diminution instead of elevation of temperature. When fever is thus produced it is usually of short duration, and of only moderate intensity, the rise of temperature being rarely more than four degrees, and sometimes not more than one degree Fahrenheit. Moreover, a large part of the important rôle played by the skin in the regulation of the bodily temperature in man is assumed by the lungs in these animals.

Complete calorimetrical observations of human beings in fever, encountered difficulties which have not yet been overcome. The imperfect or incomplete methods employed by Lieberman² and by Leyden⁴ in determining the heat-production of human beings in fever, justify the inference that this production is increased, and apparently as a rule to a greater extent than in animals, but they do not warrant positive conclusions as to the quantity of heat produced.

We turn now to the results regarding febrile production of heat obtained by what has sometimes been called indirect calorimetry. Inasmuch as the heat energy of the body is the result of chemical changes of its proteids, fats and carbo-hydrates, it is evident that if we know the kind and the amount and the heat value of the substances consumed in a given time within the body, we can compute their heat-production. These chemical changes so far as their final

products are concerned, are processes of oxidation. The heat values of the substances consumed in the body, were determined, first by Frankland and more recently with greater accuracy by von Rechenberg, Danilewsky and Rubner. The investigations of Pettenkofer and Voit, have shown that in hunger almost exclusively, fats and proteids are oxidized, and that in this condition by determining the amount of oxygen absorbed and of nitrogen and of carbon excreted, we can estimate the quantity of fat and of proteid substance oxidized during the period of observation.

Physicians of past centuries regarded increased consumption of the material of the body in fever, as so evident that it needed no especial demonstration, and after Lavoisier made apparent the sources of animal heat, it was accepted almost unquestionably until the last quarter of a century, that fever is essentially a process of increased combustion or oxidation. The immense historical importance of the promulgation in 1863 of Traube's theory, which denied the dependence of fever upon increased production of heat, is that this theory has led to a careful inquiry into the grounds of beliefs hitherto generally accepted, and to the demonstration of the unsatisfactory nature of the evidence hitherto thought to be conclusive.

The striking loss of weight of most fever patients, is, as is well-known, a fact of great clinical importance. Weber and Finkler have demonstrated that animals in fever lose weight more rapidly than healthy animals in hunger, and although observations on human beings with reference to this point are not concordant in their results, there can be little doubt that the tendency of fever is to cause a greater loss of weight than can be explained simply by insufficient nutriment. This tendency, however, may be masked by the retention of water within the body, as the investigations of Leyden and others have shown. While, therefore, the studies of the loss of weight in fever leave no doubt that there is increased destruction of tissue in this condition, we cannot consider this loss as an accurate measure of the increased destruction, nor, without further knowledge, as an indication of increased oxidation, still less as proof of excessive production of heat.

It was for a long time believed that the excessive excretion of urea in fever, afforded satisfactory evidence of increased oxidation and of greater production of heat. We now know, especially from the researches of A. Fraenkel, that this is so far from being true, that we can explain the excessive elimination of urea better upon the assumption of diminished than of increased oxidation of tissue. In certain pathological conditions, notably phosphorus poisoning, the amount of urea excreted may be increased more than three-fold, notwithstanding, or, as Fraenkel believes, in consequence of diminished absorption of oxygen and elimination of carbonic acid. It can, moreover, be computed that even without any diminution of the respiratory gases the discharge of urea may be increased without greater production of heat. While, therefore, the enormous increase in the discharge of urea in fever, sheds valuable light upon a most obscure subject, the nature of febrile metabolism, it does not, regarded by itself, afford us any information as to the production of heat.

Failing to find satisfactory proof of increased oxidation in the loss of weight of the body, or the excessive excretion of urea in fever, attention was then

² Lieberman. *Handb. d. Path. u. Therap. d. Fiebers*, Leipzig, 1875.

⁴ Leyden. *Deutsches Arch. f. Klin. Med.*, Bd. 5.

directed to the elimination of carbonic acid, an excretory product which bears a much closer relation to the production of heat than does urea. Immense importance has been justly attached to the determination of the amount of carbonic acid excreted by an individual in fever. No point in the whole battleground of fever pathology has been more hotly contended than whether increased production of carbonic acid is an essential part of the febrile process. The first investigators of this question, Leyden, Liebermeister, Senator, contented themselves with the determination of the amount of carbonic acid eliminated by an individual in fever and in apyrexia. There are several considerations which greatly diminish the value to be attached to the mere estimation of carbonic acid excreted without simultaneous determination of the amount of oxygen absorbed. As has been urged by Senator and with especial clearness by Pflüger, increased discharge of carbonic acid does not necessarily imply increased production of the same. The discharge of carbonic acid varies, independently of its production, with the rhythm and depth of respiration and with the temperature and the alkalinity of the blood, all factors which are altered in fever in such a manner as to favor increased liberation of carbonic acid. It is true that the influence of these factors would cause increased discharge of carbonic acid out of proportion to its production only for a limited period, and that the prolonged increase in the amount of carbonic acid discharged in fever, which has been found by several observers, can hardly be interpreted otherwise than in favor of increased production. There is another point which detracts still further from the value of exclusive determinations of the quantity of carbonic acid discharged, and this is that it makes a great difference so far as the production of heat is concerned whether the carbonic acid is the result of oxidation of carbo-hydrates, of fats or of proteids, a difference amounting, according to Rubner, to 29.5 per cent., or if only the proteids and fats be considered to over 20 per cent. In investigations of nutrition it is now known to be of the utmost importance to determine the so-called respiratory quotient, that is, the ratio between the amount of carbonic acid discharged and that of oxygen absorbed. This quotient varies in a definite way with the kind of material oxidized in the body, and an accurate knowledge of it would enable us to draw conclusions as to the substances consumed in fever.

The investigations which have been published within the last few years upon the absorption of oxygen, as well as the discharge of carbonic acid in fever, are to be ranked as most valuable contributions to our knowledge of fever. The first estimation of trustworthy methods of the amount of oxygen absorbed, and of carbonic acid excreted in fever, was made in Pflüger's laboratory by Colasanti upon a guinea-pig, and was published in 1877. Since that time two careful and elaborate researches upon this subject have been made, the one by Finkler, and the other by Lilienfeld.⁶

These experimenters found that in fever there is increase of the amount both of oxygen absorbed and of carbonic acid excreted. Making comparison with healthy animals, under the same condition of nutrition, Colasanti found that the increase in the absorption of oxygen amounted to 18%, and in the excretion

of carbonic acid to 24%. Finkler, whose experiments were made also upon guinea-pigs, found under varying conditions of external temperature the average febrile increase of oxygen to be 13.8%, and of carbonic acid, 13.3%; and Lilienfeld, who experimented on rabbits, found the average increase of oxygen to be 15.9%. The statement of these averages gives an incomplete conception of the oxidation in fever, as they are derived from all stages of fever and varying elevations of temperature. No constant proportion was found to exist between the height of the temperature and the amount of oxidation. On the other hand, a relation was observed between the oxidation and the stages of fever; namely, the initial stage, with rising temperature; the acme, with constant high temperature; and the defervescence, with falling temperature. During the period of rising temperature oxidation was increased, and in this stage Finkler found the highest percentages, amounting to 36.6% in the increase of oxygen, and 37.6 of carbonic acid. There were, however, marked fluctuations in this stage, both in the temperature and the amount of oxidation. In the stage of constant high temperature such high percentages were not noticed, and the fluctuations were less marked. The processes of oxidation, according to Lilienfeld, are increased on the average less in the acme than in the initial stage of fever.⁶ During defervescence of the fever the increasing oxidation falls, and may sink below the normal. Taking a broad view of these stages, we may say, therefore, that the periods of rising, constant, and falling temperatures in fever correspond to the periods of rising, constant, and falling oxidation, but we must bear in mind that the fluctuations in oxidation are much greater than, and bear no constant relation to those of temperature, so that in each period there are times when oxidation may rise or fall most decidedly without corresponding changes of temperature.

Inasmuch as these experiments have shown that the increased excretion of carbonic acid in fever is accompanied by increased absorption of oxygen, and, as will be explained presently, that the respiratory quotient, if it changes at all, sinks, it is evident that we need not discard experiments in which only the amount of carbonic acid excreted has been estimated by good methods. The most accurate of these experiments are those of Leyden and Fraenkel upon febrile dogs.⁷ They found that, without exception, carbonic acid is excreted in larger amount in fever than in health under the same nutritive conditions, the excess amounting sometimes to 70%, and in general being larger than in the experiments which have been previously considered. The earlier and meritorious experiments of Senator upon this point did not give uniform results, and he felt justified in concluding that there is no evidence of increased production of carbonic acid in fever. Subsequent experiments with far more accurate methods have demonstrated the incorrectness of Senator's conclusions. It may be well to call to mind that Burdon-Sanderson's deductions, which have naturally had great influence among physicians here and abroad, were based in great part upon the data derived from Senator's experiments.

Hitherto the methods employed in studying the respiratory gases of human beings in fever have not

⁶ In the period of rising temperature there was an increase of oxygen absorbed of 2%, in the acme of 14.9%.

⁷ Leyden and Fraenkel. Virchow's Arch., Bd. 76.

⁶ Colasanti, Pflüger's Arch., Bd. XIV. Finkler, *Ibid.*, Bd. XXIX. Lilienfeld, *Ibid.*, Bd. XXXIII.

approached in accuracy those used in the experiments described. If the discordant results of Wertheim, which were obtained by methods manifestly very inaccurate, be discarded, all other investigators have observed augmented discharge of carbonic acid in human beings. Leyden found an excess of 50% in the febrile discharge of carbonic acid, and Liebermeister, whose observations were made chiefly on cases of intermittent fever, found an excess of 30% to 40% in the period with rising temperature, and of 19% to 31% in the acme of the fever. During the defervescence of the fever the excess of carbonic acid discharged diminished, and sometimes wholly disappeared. In one instance in which the determination was made during the rigor of intermittent fever, the carbonic acid excreted was two and one-half times the normal amount, an excess so enormous that it was undoubtedly due in great part to the muscular movements which attended the chill.

Although we cannot consider these figures as absolutely accurate, they indicate clearly that in human beings, as well as in animals, fever is characterized by increased oxidation, and apparently that, as a rule, in man the excess of oxidation is greater than in the experimental fever of animals. This was to be expected, as it is difficult to produce experimentally in animals anything approaching in intensity the well-marked fevers of human beings.

As the result of these laborious researches, we may consider it established that increased oxidation is a part of the fever process. It has been claimed that this augmented oxidation is simply the result of the elevation of temperature, but it can be proven that this is not true. Pflüger has demonstrated that the processes of oxidation are more active at high than at low temperatures of the body, and he has also established the increment of oxidation which corresponds to each degree of rise of temperature. By means of these data, Finkler has computed that in guinea-pigs the febrile elevation of temperature of 1° C. could cause an increase of the absorption of oxygen of only 3.3%. Moreover, Lilienfeld found decided increase in the processes of oxidation before there is any marked elevation of temperature, and all the experiments have rendered it quite evident that there is no such relation in fever between the height of the temperature and the energy of oxidation, as would be expected if the augmented oxidation were merely the result of the increased temperature.

There is no reasonable doubt that the more energetic oxidation which we find to be an essential part of the process of fever indicates increased production of heat. Exactly what amount of heat-production corresponds to the increased oxidation we cannot know until the kind and the quantity of substances oxidized in fever have been determined. It is to be regretted that no experiments have been made in which the amount of nitrogen excreted has been determined at the same time with the estimation of the oxygen absorbed and of the carbonic acid discharged. These data would enable us to form some estimate, although not an accurate one, of the amount of heat-production corresponding to the oxygen absorbed, unless very different laws from those in health control the oxidation processes of fever.

Mention has already been made of the importance of determining in fever the respiratory quotient or the ratio between the carbonic acid discharged and the

oxygen consumed. A few words will make this clear. It is well known that under ordinary circumstances in health not all of the oxygen consumed reappears in the carbonic acid discharged. This indicates that a part of the oxygen absorbed is used in other oxidations than those resulting in the production of carbonic acid. According to the extent of these other oxidations, therefore, the respiratory quotient must vary. It is probable that these oxidations of which carbonic acid is not a product result at least in part in the formation of water, which is therefore one of the excretory products of the body as has been urged especially by Prof. Austin Flint. The influence of various circumstances upon the respiratory quotient has been studied, but what especially concerns us here is that in hunger this quotient sinks, which is to be expected from the fact that in this condition almost exclusively fats and proteids are oxidized. We evidently possess in the determination of the ratio of carbonic acid discharged to the oxygen consumed a means of reaching a conclusion as to a cardinal point in the pathology of fever; namely, whether the processes of oxidation in fever conform to the laws which govern them in health, and particularly whether as has been often asserted, unusual or incomplete products of oxidation are formed to any considerable extent in fever. Colasanti and Lilienfeld found that the respiratory quotient in their febrile animals did not vary from that of healthy animals under similar nutritive conditions. Finkler observed that the respiratory quotient fell in fever somewhat more rapidly than in hunger, and this he explains by the more active oxidation in fever. All three experimenters reached the conclusion that the substances oxidized are the same in fever as in health, and that other than the normal products of combustion are not formed in fever in any considerable amount. That the metabolism in fever does differ in at least one important respect from that in hunger is evident from the excessive amount of urea excreted in fever, but considerable variations in the disintegration of albuminous material may occur without much change in the respiratory quotient.

The only determinations of the febrile consumption of oxygen and discharge of carbonic acid in man are those of Wertheim and of Regnard. Both investigators found a decided diminution of the respiratory quotient. The method employed by Wertheim was so defective that no confidence can be placed in his results. The experiments of Regnard⁸ are presented with great neatness, but his results on other points differ so much from those obtained by trustworthy physiologists and by better methods that we cannot accept his conclusions as to the respiratory quotient in fever without confirmation. Regnard found in all fevers which he studied a most marked diminution of the respiratory quotient. If this were true, it would follow that in fever a much larger part than in health of the oxygen consumed is employed in other oxidations than those yielding carbonic acid. This would confirm the widely accepted belief that water and products of incomplete oxidation are formed in excessive amount in fever.

From the unfortunate discrepancy of these results it is evident that the knowledge which we now possess of the processes of oxidation in fever is not sufficient to enable us to form an accurate estimate of the

⁸ Regnard. *Recherches Exp. sur les Variations Pathologiques des Combustions Respiratoires*, Paris, 1878.

heat-production. In hunger from one-fourth to one-third of the absorbed oxygen is available for combination with hydrogen to form water, the remainder uniting with carbon to form carbonic acid (Regnault and Reiset). If in fever the same ratio exists then the excess of heat-production would be proportionate to the excess of oxygen absorbed, assuming that the substances oxidized are the same in both conditions; if, however, as Regnard's experiments indicate, a larger proportion of oxygen is available in fever for the oxidation of hydrogen, then the increment of heat-production would be still greater, for the same amount of oxygen produces more heat when employed in the oxidation of hydrogen than in that of carbon. It is also to be considered that the same quantities of hydrogen and of carbon in their oxidation yield varying amounts of heat according to the chemical compounds in which they are contained, and we cannot say positively whether the compounds oxidized are the same in fever as in health under like conditions of nutrition. Upon the whole, the weight of evidence is in favor of the view that the excess of heat-production in fever is approximately proportionate to the increase in the consumption of oxygen, but it would be rash to assert this positively. It is evident that in fever, ordinarily a much smaller amount than in health, of the energy resulting from chemical process is transformed into external mechanical work, so that relatively more remains in the form of heat.

In connection with this discussion of the possibility of unusual sources of heat in fever may be mentioned an hypothesis which has been advanced with much ingenuity by Dr. Ord.⁹ This hypothesis is based upon the assumption, which is probable enough, that there are in the body chemical processes in which heat energy is transformed, or rendered latent. These processes are thought to be chiefly those concerned in the building up of tissue. It is argued that inasmuch as the construction of tissue is manifestly in abeyance in fever, the amount of heat in the body may be increased, not only by disintegrative processes, but also by "the persistence in the form of heat of energy which should have taken another form." That these building-up processes influence decidedly the amount of heat produced in the developing ovum has been demonstrated by d'Arsonval's calorimetric determination that the egg during incubation absorbs heat, notwithstanding the consumption of oxygen, and the excretion of carbonic acid. This fact, which might have been predicted, certainly does not justify us in refusing to attach calorimetric value to the determination of the respiratory gases and the urinary nitrogen. From the little we know of these constructive processes in human beings, we should infer that the amount of energy in the form of heat which they appropriate bears only a very small ratio to the total heat-energy set free by heat-producing processes, so that their cessation would not bring a large increment to the heat of the body. Moreover, these constructive processes are also in abeyance, although doubtless to a less extent, in starvation with which experimental fever is usually contrasted as regards heat-production and heat-loss. It is not probable that any extraordinary difference in the behavior of the processes of tissue building in fever and in starvation can occur without affecting the respiratory quotient. For the present, therefore, we can not attach any great import-

ance, so far as the increase of heat-energy in fever is concerned, to the inactivity of heat-absorbing processes.

We have gone over now the evidence which, in my judgment, establishes the fact that there is increased production of heat in fever. The same conclusion is reached also by the study of the loss of heat from the body in fever. That fever is accompanied by increased production of heat and by more active combustion has been in all ages the belief of the majority of physicians. This belief, however, has been rather instinctive than based upon actual demonstration. It has been tested by investigators of great ability, and on the ground of scientific observations. For these reasons, and on account of the importance of the subject, it has seemed to me desirable to present to you the exact evidence, although many of its details, I fear, may have wearied you. We have learned, moreover, certain facts concerning febrile thermogenesis, which the mere observation of fever patients does not render so apparent. We have found that there is no definite relation between heat-production and the height of the temperature, so that we may have excessive thermogenesis with low as well as with high temperatures. There appears to be, however, a relation between the stages of fever and heat-production, this being in spite of remarkable fluctuations, greatest in the initial stage, and least in defervescence. Although, for reasons which have been mentioned, and others might have been adduced, we can attach hardly an approximate value to figures which purport to give the actual heat-production in fever, still, unless far more serious errors than seems possible inhere in the methods of direct and of indirect calorimetry, we can draw one important conclusion. This is that while an individual in fever produces more heat than he would in health under similar conditions as to food and muscular movements, he does not produce, necessarily, in fever, more heat than he would in health on a full diet. And it is certain that he usually produces far less heat in fever than he often does under circumstances which normally increase heat-production, such as a cool environment and muscular exercise. That one in health, with little or no change of temperature, may produce twice or more the quantity of heat which he produces in fever, makes it plain that it is impossible to explain febrile rise of temperature simply on the basis of increased thermogenesis, or what probably comes to the same thing, of increased oxidation. That in health vastly increased heat-production may occur with comparatively little change of temperature is, of course, due to the fact that the dissipation of heat is proportionately increased. It is self-evident, and, so far as I know, has never been disputed, that in fever the equilibrium is so disturbed that heat-loss does not correspond to heat-production as it should in health. This disturbance of equilibrium can be brought about in various ways, and it is only by the determination of the actual heat-production and heat-loss in fever that we can say in what direction the balance is disturbed.

We have found that the production of heat is increased in fever when the comparison is made with like conditions of nourishment and of environment. It is obvious that the total loss of heat can not equal the total production of heat during the period of febrile rise of temperature.

As is well known, most of the heat of the body is

⁹Ord. British Med. Journal, 1885, Vol. II.

liberated from the skin, and from the lungs; from the former by radiation and conduction, and by the evaporation of moisture and from the latter by evaporation of moisture and warming the respired air. It has been estimated that in man about eighty per cent. of the total heat-dissipation is from the skin.

The method of direct calorimetry already described, has been applied only to animals for the determination of the total heat-loss in fever. Here Wood's experiments are the best which we possess. Leyden and Liehermeister have furnished calorimetric data which, although unsatisfactory in many respects, indicate the general direction of febrile heat-loss in human beings. All of these experiments show that more heat is dissipated in fever than under like conditions in health. The fluctuations of heat-loss during a febrile paroxysm are so great that the statement of an average for the entire period has little significance. Such an average, according to Wood's results on fevered dogs, would fall between twenty to thirty per cent. excess of heat-loss as compared with the loss in health under like conditions of food. The dissipation of heat in fever, however, may be at times more than double the normal amount, and again may sink below the normal. We have not sufficiently accurate estimates either of the total amount of heat produced or of that dissipated during a febrile attack to enable us to strike a balance between the two. Some persons have been so impressed with the large amount of heat-loss during certain periods of fever that they have concluded that there must be far greater excess of heat-production than previous investigations have shown to be probable. They suggest that there are sources of febrile heat of which at present we have no idea. Such conclusions seem to me quite unwarranted when we consider the behavior of heat-loss not for a limited time, but throughout the different stages of a paroxysm of fever. We have already seen that we obtain no satisfactory conception of febrile production of heat unless we follow it during the stages of fever, and this is no less true of heat-dissipation. The observation of the condition of the skin as regards temperature and moisture must in all ages have afforded an insight into the general behavior of heat-dissipation during the different periods of fever. It does not require any instruments of precision to make plain the fact that a cold, dry skin, such as we observe during a febrile chill, liberates less heat than normal, or that a hot, moist skin, such as we are likely to find at the defervescence, loses more heat than normal. Not quite so transparent is the direction of heat-loss during the hot stage or acme of a febrile paroxysm, or fastigium, of a continued fever. Here the skin usually appears hot and dry. The ordinary impression that more heat than normal is dissipated during this stage is supported by calorimetric experiments. There can be no doubt that the elevation of the cutaneous temperature which we observe in the hot stage of fever causes an increase in the amount of heat lost by radiation and conduction. Similar elevations of cutaneous temperature in health, such as those caused by muscular exercise, are accompanied by increased moisture of the surface. Not only is visible perspiration usually absent during the hot stage of fever, but the invisible perspiration is, as a rule, relatively, although not absolutely diminished, as Leyden has shown. The dryness of the skin, therefore, is a factor which, in the hot stage of a fever, tends to less-

sen heat-dissipation. Clinical observation, however, shows that fevers differ markedly from each other as regards perspiration during the hot stage, the skin being sometimes bathed in perspiration, without any depression of temperature. It would undoubtedly be of great interest to possess trustworthy data as to the exact loss of water from the surface of the body in different fevers, and at different stages of fever. We cannot place much reliance upon the indications afforded by Weyrich's hygrometer, which has been repeatedly used for this purpose. More is to be expected from the method employed by Peiper¹⁰ in studying insensible perspiration under physiological conditions.

The general impressions regarding febrile loss of heat derived from clinical observations are supported by calorimetric experiments. The dissipation of heat is least during the initial stage of fever, and greatest during the period of defervescence. During the hot stage or fastigium, heat-dissipation exceeds the normal, but usually, on account of the dryness of the skin, not so much as one might infer simply from the impression of heat received by the hand when placed upon the skin.

During the initial period the loss of heat, although on the average less than in the following stages, is usually greater than normal. If, however, the rise of temperature be rapid, the heat-loss falls below the normal amount. As there is now increased production of heat, there is evidently a glaring disproportion between the two factors, heat-production and heat-loss, and under these circumstances the febrile attack is likely to be ushered in by a chill. During the febrile chill, all the efforts of nature combine to produce in the shortest time the greatest possible elevation of temperature. Not only is heat-loss reduced to a minimum, but heat-production is excited to the utmost.

During the period of defervescence, on the other hand, the relation between heat-loss and heat-production is reversed. This is, of course, most apparent when the fever terminates by crisis, with rapid fall of temperature. Then the loss of heat is excessive, being sometimes three-fold that in the normal state, and heat-production is relatively and often absolutely diminished.

It is of importance to remember that there are continual and irregular fluctuations in the dissipation of heat during the different stages of fever. These fluctuations bear no definite relation either to the momentary production of heat or to the height of the internal temperature. We deal in ordinary life so much more with units of temperature than with units of heat, that it is difficult for us to keep constantly in mind the fact that no inference can be drawn as to the height of the internal temperature from the knowledge of the momentary heat-production and heat-loss. If the heat-loss fall behind heat-production, the temperature of the body rises, and it can remain at this elevated point with either diminished or increased heat-production so long as the heat-loss equals heat-production.

No correct conception of the condition of the heat-regulating mechanism in fever can be obtained without taking into consideration these irregular variations in the discharge of heat, and it is a merit of Senator and his pupils to have emphasized particularly this point. These variations are made apparent not only by calori-

¹⁰ Peiper. *Zeitschr. f. Klin. Med.* Bd. 12.

metric measurements and direct observation, but also by the studies which have been made of the cutaneous temperature in comparison with the internal temperature in fever. Hinkel's law, that the difference between the temperature in the axilla and that of the surface of the body in the febrile condition is less than in the normal condition, manifestly does not hold for the chill, in which it has been proven that the superficial temperature falls, while the internal temperature rises. Jacobson, Wegscheider, and Schülein¹¹ find that there constantly occur in the course of most fevers changes of the superficial temperature which stand in no relation whatever to alterations of the internal temperature. Schülein thinks that he has discovered some facts in this regard which are available in diagnosis. However this may be, these observations indicate that contraction and dilatation of the cutaneous vessels are constantly occurring, and without any regularity in fever. These irregular variations in the calibre of the bloodvessels are also apparent to the eye in the vessels of the rabbit's ear during fever. When it is considered, furthermore, that these irregularities of cutaneous circulation vary decidedly in different situations, no further proof is needed that the mechanism which regulates the discharge of heat from the surface of the body is profoundly disturbed in fever.

These alterations in cutaneous circulation are such striking phenomena that it is, perhaps, not surprising that two great medical authorities should have based upon them exclusively theories of fever, Traube assuming excitation, and Marey paralysis of vaso-motor nerves as the primal element in fever. We need not discuss these theories, now generally abandoned in their exclusive form. From what has been said concerning the loss of heat in fever, it is evident that we cannot explain febrile rise of temperature solely by the behavior of heat-dissipation any more than we can explain it solely on the basis of increased heat-production. In rejecting Traube's theory that fever is the result solely of retention of heat, we must still recognize the fact that decrease in the dissipation of heat, at times absolute, at other periods relative, is a factor of the utmost importance in the febrile process.

From whatever point of view we consider the question, we cannot avoid the conclusion that it is the mechanism which controls the relation of heat-production to heat-loss which is primarily disturbed in fever.

Heat-production is increased in fever, but if the regulating mechanism were normal, then the discharge of heat would be proportionately increased, and the temperature would not be materially affected. Nor would the force of this argument be changed if febrile thermogenesis were twice as energetic as we suppose it to be.

The loss of heat is increased in fever, so that on this ground alone we should be obliged to assume increased heat-production. But even if it were proven that heat-dissipation is diminished, as has been recently claimed again by Rosenthal,¹² and that fever is the result of heat-retention alone, it would still be necessary to admit that the regulating mechanism is at fault, for Pflüger has demonstrated that when this is normal, changes in the temperature of the skin are attended by such changes in heat-production that the

internal temperature remains within wide limits unaltered.

I repeat then that the conclusion is forced upon us, that the fever-producing agents must act either directly or indirectly upon the mechanism regulating the harmonious relation of heat-loss to heat-production. That the heat-regulating mechanism, although profoundly disturbed, is not entirely paralyzed in fever, is proven by the effect of heat and cold upon fevered individuals. Although Colasanti believed that his fevered guinea-pig had lost all power of heat-regulation under varying external temperatures, a similar conclusion has not been reached by others who have investigated this question. We can best describe the condition of heat-regulation in fever as unstable or ataxic. External cold stimulates to some extent the heat-production of an individual in fever, but by no means as much as it does in health. A person in fever is not able to retain his bodily temperature under the influence of heat and cold, to the same degree that he can under normal conditions. Liebermeister, as is well-known, held that heat-regulation in fever, is simply adjusted for a higher point, although he admits not perfectly adjusted. Experience shows that this so-called adjustment is so unstable that it does not seem proper to compare it with that to normal temperatures in health, so that it is not clear what deep meaning lies in Liebermeister's idea.

We cannot imagine the heat-regulating mechanism to be other than a nervous one. Some years ago this was about as far as the theory of the mechanism of fever could be carried. All paths led to this mysterious nervous apparatus, and beyond this nearly all was speculation. As has been said, we stood before imposing processes veiled in the deepest obscurity. Since then the veil has been lifted here and there and we have caught glimpses of the nature of these processes. I refer particularly to the results of researches which have brought to light a more immediate and direct dependence upon nerve-energy, than had been supposed, of chemical processes concerned in the disintegration and construction of tissue, and therefore in the production of heat.

With one side of the nervous mechanism concerned in temperature-regulation, the classical investigations of Claude Bernard have made us tolerably familiar. This is the vaso-motor nervous apparatus presiding over the circulation of blood in the superficial parts of the body, and thereby controlling in great measure the discharge of heat. That the important part taken by the perspiration in the dissipation of heat is likewise under nervous influence, has been demonstrated by Luchsinger. The facts concerning this side of the regulation of heat are too well-known to require elucidation on this occasion.

Heat-regulation, however, is effected not only by variations in the elimination of heat, but also by changes in the production of heat. Familiar as the fact is it can never cease to arouse our admiration that the temperature of the body remains the same in cold and in warm atmospheres. Man has become so dependent upon clothing that in the naked condition his capacity of preserving his normal temperature in a cold environment is much less than that of most animals. Pflüger has demonstrated that the heat-regulation under varying external temperatures is accomplished by changes both in heat-production and in heat-loss, so that in a cold atmosphere more heat is

¹¹ Jacobson, Virchow's Archiv, Bd. 65. Schülein, Ibid., Bd. 66. Wegscheider, Ibid., Bd. 69.

¹² Rosenthal. Deutsche Med. Wochenschrift, 1898.

produced, and in a warm atmosphere less heat, provided the external temperature is not so high or so low as to make it physically impossible to preserve the body temperature. It is evident that this is the most rational and economical method of retaining the internal temperature of the body. To regulate the body temperature simply by variations in the discharge of heat, as was formerly supposed to be the method, would be, as has been said, like regulating the temperature of our rooms summer and winter by opening and shutting the windows, without controlling the source of heat.

A heat-producing or thermogenic apparatus, therefore, is no less a part of the heat-regulating mechanism than is the heat-discharging or thermolytic apparatus, to use the terms employed by Foster. As the thermogenic apparatus is less generally understood, it is not permissible to dismiss its physiology in this connection so briefly as I have the thermolytic, although our knowledge of the former is very imperfect.

I can assume that the convincing reasons are known to you which have led physiologists to conclude that most of the animal heat is produced in the muscles and the glands, and that the muscles have the larger share in this function. It is also well-known that stimulation of secretory and motor nerves cause not only visible physical alterations in the glands and muscles, but also production of heat. This sort of dependence of heat-production upon innervation has been long admitted. It may, however, not be so generally known that there are reasons to believe that nervous impulses control chemical changes which result in the production of heat independently of visible physical alterations of the tissues; in other words, that heat-production or thermogenesis is at least in considerable part under the immediate and direct control of the nervous system. The idea is not a new one and was advocated especially by Claude Bernard. Recent discoveries, however, have given it unexpected support.

This subject of the relation of innervation to thermogenesis is most pertinent to the pathology of fever, but it is essentially a physiological one and as I wish to confine to a single lecture what I have to say concerning the theory of fever, it is impossible for me to do more than summarize the most essential points belonging here. This I can do the more readily as Dr. McAlister¹³ in his admirable *Gulstonian Lectures on the Nature of Fever*, which were delivered last year, has clearly and forcibly presented the main facts.

The larger part of these facts relates to the chemical changes and heat-production of muscles under varying conditions.

That a larger part of the chemical changes in a muscle in the condition which we call repose is under the influence of the nervous system is made apparent by the great diminution in its consumption of oxygen and formation of carbonic acid which follows the separation of the muscles from all connection with the central nervous system. This is conclusively shown by the experiments of Bernard, Pflüger, von Frey and others. It is of course possible and it has generally been supposed that under these circumstances it is simply the withdrawal of motor impulses which lowers the heat-producing energy of the muscle. Far more suggestive as regards the point under considera-

tion are the results of investigations which have been carried on in Ludwig's Laboratory by Meade Smith, MacAlister and Lukjanow. These experimenters have shown that heat-production and contraction are in a measure independent properties of the muscle. By various influences the thermogenic property may be so impaired that a stimulus causes contraction with scarcely any development of heat. The laws governing the restoration and the fatigue of the thermogenic function differ from those controlling the mechanical function. These researches, upon which I here only touch, have made it extremely probable that there are in the muscle chemical processes resulting mainly in the production of heat and chemical processes causing mainly contraction, and that these processes, although co-ordinate, are not identical. A new light is shed upon the meaning of the term chemical tons of muscle, which has for some time been used by some physiologists. Great caution is properly exercised by Ludwig and his pupils in the interpretation of these interesting results. They do not infer from them necessarily the existence of so-called thermic or calorific nerves. They suggest that it is possible to explain the phenomena upon the supposition that there are in the muscles two kinds of material, thermogenic and contractile, and the nervous impulses acting upon these may pass through the same set of nerves. Proof of the existence in connection with muscles of thermic, in distinction from motor nerves would be afforded if we could succeed after paralysis of the motor nerves in exciting by nerve-stimulation the thermogenic function of the muscle. We possess in curare a drug which paralyzes the terminations of the motor nerves. Meade Smith attempted by its aid to determine whether possible thermic nerves may be differentiated from motor, but he reached no positive conclusion on this point. There are, however, on record some observations which suggest the possibility that in moderate doses curare may leave intact thermic nerves after the suspension of the function of motor nerves. When an animal is profoundly under the influence of curare the internal temperature falls and the processes of oxidation are greatly reduced. The animal is no longer able to resist the changes of external temperature, its own temperature rising and falling like that of a cold-blooded animal when exposed to heat or cold. This effect of curare poisoning is another proof of the dependence of heat-production upon nervous influences. Claude Bernard in his early researches on the action of curare noted elevation of temperature soon after its administration. Recently, U. Mosso¹⁴ claims that an animal may be placed so far under the influences of curare as to paralyze completely the voluntary muscles and the internal temperature either remain normal or rise. He infers that these moderate doses of curare although sufficient to paralyze the motor nerves must have left intact the thermic nerves. That rise of internal temperature is not due to retention of heat he thinks is evident from the normal or elevated temperature of the skin. Mosso is strengthened still further in his conclusion as to the existence of thermic nerves by finding, that after complete paralysis of the motor nerves by curare, injections of strychnine cause an elevation of rectal temperature which may amount to three degrees Centigrade. Under these circumstances strychnine produces no spasms or other visible mechanical effect upon the muscles.

¹³ McAlister. *The Lancet*, 1887, Vol. I.

¹⁴ Mosso. *Virchow's Archiv.*, Bd. 106.

Mosso brings forward a number of other experiments (decidedly open to criticism) intended to demonstrate the existence of nerves directly controlling heat-production, but those which I have mentioned are by far the most striking. It seems to me that the natural interpretation of these experiments is in favor of the view that there are nerves controlling heat-production in the muscle distinct from motor nerves. Far more conclusive as to this point than thermometric observations would be calorimetric experiments determining the heat-production of animals under varying doses of curare.

This whole line of experimentation directed toward the differentiation of the mechanical and the chemical functions of muscle is certainly most suggestive, but so long as the interpretation of the results is not perfectly clear we should be very guarded in drawing far-reaching conclusions. I cannot refrain, however, from pointing out that, as mentioned by MacAlister, all of these thermogenic phenomena may be found eventually to depend upon nerves whose chief function on the one hand is the disintegration, the katabolism of tissue, and on the other hand the restoration, the anabolism of tissue. From the study of the electrical changes which stimulation of the pneumogastric nerve produces in the heart-muscle, Gaskell concludes that this nerve puts the heart in a condition of relative rest, during which the energy of the muscle is increased. During this period there is reason to believe that the material of the muscle, which when disintegrated gives rise to heat and mechanical work, is in the process of restoration. Hence Gaskell speaks of the pneumogastric or inhibitory nerve of the heart as anabolic; that is, it directs the restorative, formative, anabolic processes in the muscle. On the other hand, the accelerator nerve of the heart induces the opposite electrical changes in the heart-muscle. Gaskell describes this nerve as katabolic; that is, its stimulation causes disintegration of the muscle-materials and liberates energy in the form of heat and of mechanical work. If it be found that similar inhibitory and accelerator nerves preside over the chemical changes in the voluntary muscles and other tissues of the body, then Gaskell's induction as to the existence of anabolic and katabolic nerves must be regarded as one of the most important and profound in modern physiology. Thermo-excitatory nerves we should then rank as katabolic, thermo-inhibitory as anabolic.

These investigations tending to demonstrate the independent existence of thermogenic properties in the muscles and possibly of nerves directly controlling thermogenesis, have prepared us for the consideration of the relation of the central nervous system to the heat-producing properties of the body. Here you will willingly permit me to confine my remarks to the more essential and best established facts, without entering into a full discussion of one of the most perplexing subjects in the physiology of the nervous system.

The clinical basis of the doctrine that lesions of the central nervous system influence directly the temperature of the body, was laid by Sir Benjamin Brodie, who reported the well-known case of fracture of the cervical vertebrae and injury of the spinal cord, followed within a few hours by a rise of temperature to 111° F., measured between the scrotum and the thigh. Since then, many similar instances have been reported. It is well to remember in framing theories

on the basis of these cases that there are also on record not a few instances in which apparently similar injuries of the same parts of the spinal cord have been followed by equally striking falls of temperature.

The experimental basis for the acceptance of an influence of the nervous system on temperature, was laid by Bernard in his celebrated experiments on the effects of division of the sympathetic nerve in the neck. Bernard interpreted the increased temperature of the ear following this operation as referable not only to the larger amount of blood in the part, but also to increased tissue metamorphosis and consequent heightened heat-production. The latter part of this interpretation is not generally accepted. It may be said here that the common idea that an organ or tissue simply because it receives a larger supply of blood indulges in more active metabolism is opposed by the investigations of Pflüger, who finds that the amount of oxygen taken up by the cells depends in a far higher degree upon the state of their innervation at the time than it does upon the supply of oxygen. The demand of the tissues for oxygen is not increased simply because the supply is greater. The arguments upon which Pflüger bases this line of reasoning, although not without opposition, would dispose of the idea that when any considerable increase of heat-production in the muscles occurs, this can be explained simply by vaso-motor changes. I mention this here because the opinion has been advanced that a large part of the increased production of heat in fever, and after certain injuries to the nervous system, is referable simply to vaso-motor changes in the muscles.

In 1866, Tscheschichin¹⁶ published experiments which he interpreted as indicating the existence in the brain of centres which, when irritated, moderate the production of heat, and which he called heat-moderating or heat-inhibitory centres, and in the spinal cord of centres which, when stimulated, excite the production of heat—heat-excitatory centres. These conclusions were not justified by the experiments, but they have been widely accepted.

I may say here that in this connection I use the term heat-centres as a convenient and generally adopted one. There is a proper reaction against the prevailing misuse of the word centre for all sorts of little understood localization of nervous functions. It would undoubtedly be more accurate to use some such expression as thermically active region, instead of heat-centre.

It is not easy to reconcile the clinical fact that in human beings lesions of the spinal cord may be followed at once, or in a very short time, by extraordinary elevations of temperature, with the results of experiments on animals. That the rise of temperature in human beings is not due to inflammatory fever, is apparent from the rapidity with which it follows the injury. It cannot be explained by vaso-motor lesions, for the paralysis of the vaso-motor nerves accelerates the discharge of heat from the surface of the body. The high temperature can be explained on Tscheschichin's assumption. The lesion either directly stimulates the spinal thermogenic centres, or removes the influence of the thermo-inhibitory centres. These clinical observations are the strongest support which has been found for the belief in the existence of centres in the spinal cord which accelerate heat-production. Section of the cervical part of the spinal cord

¹⁶ Tscheschichin. Reichert u. du Bois, Reymond's Archiv., 1866.

in a dog or a rabbit is, under ordinary conditions, always followed by a rapid fall of the internal temperature and diminished oxidation. These varying results in man and in animals have been explained by supposing that after section of the cervical cord, on the one hand, the discharge of heat is increased by dilatation of the superficial bloodvessels in consequence of vaso-motor paralysis; and, on the other hand, the production of heat is increased by withdrawal of thermo-inhibitory cerebral impulses. If, as ordinarily happens in dogs and smaller animals, the first factor predominates, then, in consequence of sinking of the internal temperature, the heat-producing processes are so reduced that the influence of the second factor is not manifest. The attempt has been made to test this explanation by placing the animal, after section of the cord, in a warm atmosphere. If thereby the heat-discharge be reduced to a minimum, it is found that the internal temperature of the animal with severed cord rises more rapidly than that of a normal one under the same external conditions. Here thermometric observations are not conclusive as to the point to be tested, for the more rapid rise can be explained simply by failure of the heat-regulating mechanism. Wood's calorimetric experiments seem to show that there is greater heat-production under these circumstances in the animal with a cut cord. These experiments admit of various interpretations, but if they be regarded as establishing the assumption from which we started, then it is evident that in man and in large animals the increased heat-production after injury of the cord would not be so readily overcome by the increased discharge of heat from the surface, for, in proportion to its volume, a large animal has less surface than a small one. The interplay, therefore, of these opposing tendencies might cause different results, according to the size of the animal.

Tscheschichin found that a transverse section made at the junction of the pons and medulla oblongata is followed in a short time by rise of internal temperature. As the superficial temperature is also elevated, he concludes that there is no retention of heat; moreover, the section is made above the dominant vaso-motor centre. Wood has shown by means of the calorimeter that after this operation there is actual increase in the production of heat. He, as well as Tscheschichin, interpret the experiment as indicating thermo-inhibitory centres above the lower border of the pons. Bruck and Guenter¹⁶ repeated and modified these experiments under Heidenhain's direction. Out of seven cases in which they separated the pons from the medulla, they observed only in two rise of temperature; of eleven cases in which they punctured the pons with a needle, in five they noted increased temperature. Heidenhain thinks these experiments indicate heat-exciting, rather than heat-moderating centres, and it must be admitted that the evidence is not conclusive in support of either view.

By far the most interesting and conclusive experiments showing the influence of the central nervous system on thermogenesis are those of Isaac Ott, followed by Richet, Aronsohn and Sachs, Baginsky and Girard.¹⁷ The observations of Ott, Richet, Aronsohn,

and Sachs were made independently and at about the same time, but Ott was the pioneer. The experiments of Aronsohn and Sachs are reported with especial fullness and detail. These investigators find that if the skull of a rabbit be trephined at the junction of the coronal and sagittal suture, and a needle be passed vertically down so as to puncture the anterior part of the caudate nucleus near its median convexity, there follows a rise of body-temperature which may amount to three degrees or more, and which may persist for two or three days. The rapidity and the duration of this elevation of temperature varies somewhat with the depth of the puncture, parts immediately beneath the caudate nucleus being also thermically active. Puncture of the overlying cortex or medullary substance has no such effect upon temperature. With the exception of some increase in the frequency of the respiration and of the pulse, the animal, after puncture of the anterior median part of the caudate nucleus, presents no abnormal symptoms other than the rise of temperature. I have several times repeated this experiment, and always with the result described. That the pyrexia induced by puncture of the caudate nucleus is not due to vaso-motor changes causing retention of heat, is proven by Richet's and Ott's calorimetric experiments, and by the determination by Aronsohn and Sachs that the consumption of oxygen and the elimination of carbonic acid and urinary nitrogen are increased. Aronsohn and Sachs and Girard find that electrical stimulation of the anterior median part of the caudate nucleus causes the same thermic phenomena as the puncture, and they, therefore, conclude that this region contains a thermo-excitor heat-centre. This is the natural interpretation of their experiment, although Baginsky and Ott regard the centre as thermo-inhibitory on grounds which cannot be considered convincing.

Ott claims that there are four cerebral heat-centres, one about the corpus striatum, the second in the caudate nucleus, the third in the anterior inner end of the optic thalamus, and the fourth near the median line between the optic thalamus and the corpus striatum. The greatest rise of temperature he found after injury of the thalamic centre.

No adequate demonstration has been afforded of any influence of the cerebral hemispheres upon thermogenesis. Corin and van Beneden¹⁸ find that pigeons after removal of their cerebral hemispheres exhibit no change of temperature, no failure of the heat-regulating mechanism, and no alteration in the excretion of carbonic acid.

I have endeavored to present to you the main physiological facts bearing upon the relation of the nervous system to thermogenesis. It must be admitted that we are left to surmises as to the interpretation of many of the facts, and particularly as to their connection with each other. But certain important points come out clearly. We have found evidence of the existence in the body of chemical processes, resulting chiefly in the production of heat-energy. We have learned that these processes are under the direct control of the nervous system, and possibly of nerves distinct from those now recognized as motor or secretory. We have seen that there are regions in the central nervous system which are doubtless in some way connected with these nerves, and through them

¹⁶ Bruck and Guenter. *Pflüger's Archiv.*, Bd. III.

¹⁷ Ott, *Journal of Nervous and Mental Diseases*, April, 1884; *Medical News*, July, 1885; *Therapeutic Gazette*, September, 1887. Richet, *Arch. de Phys.*, 1884. Aronsohn and Sachs, *Pflüger's Archiv*, Bd. 37. Baginsky and Lehman, *Virechow's Archiv.*, Bd. 106. Girard, *Arch. de Phys.*, 1886.

¹⁸ Corin and van Beneden. *Arch. de Biologie*, 1887.

control the chemical processes resulting in the production of heat.

The bearing of these facts upon the theory of fever is evident. The study of heat-production and of heat-loss in fever has led us, by arguments which need not be repeated, to the conclusion that the pyrogenic agent must, in some way, act upon the heat-regulating mechanism. The study of this mechanism, more particularly of its thermogenic side, affords some insight into the manner in which the fever-producing agent may affect the regulation of heat. The main difficulty in the neurotic theory of fever has been to understand how, by any action of the fever-producing agent directly upon the nervous system, the chemical processes leading to heat-production could be stimulated. I have dwelt thus at length upon the innervation of thermogenesis to show that this difficulty has been overcome. To some it seems more reasonable to suppose that the pyrogenic agent circulating in the blood acts directly upon the tissues, altering and stimulating their chemical changes. This is the hæmic theory which, in some form, has always stood over against the neurotic theory of fever. Although it may at first glance appear simpler, the hæmic theory is really the more complicated, for it has already been set forth that we cannot explain fever simply by increased heat-production, so that even if the primary effect of the fever agent were upon the heat-producing processes, there must be a secondary influence upon the nervous system, for heat-dissipation is no less disturbed than heat-production.

If an animal be thoroughly curarized, so that no impulses from the nervous centres can reach the muscles, the great heat-producers, then it is found to be impossible to produce febrile elevation of temperature by the injection of pyrogenic agents. This fact, first demonstrated by Zuntz, is justly held to weigh heavily in favor of the neurotic theory of fever.

Contrary to the results of Murri,¹⁰ I have not been able to induce rise of temperature, or check its fall by the injection of pyrogenic agents into the jugular veins of dogs whose spinal cords have been cut in the lower cervical region. In these experiments I have employed various pyrogenic agents, and especially pepsin and papain. One specimen of the latter which I used possessed very striking pyrogenic properties.

The pyrexia produced by puncture of the caudate nucleus in the manner already described possesses all of the essential properties of fever, regarded as abnormal elevation of temperature. In this experimental condition there are increased production of heat, increased dissipation of heat, excessive elimination of urea and of carbonic acid, and excessive absorption of oxygen. The breathing and the pulse are increased in frequency. The elevation of temperature (usually after a brief fall) begins within half an hour after the puncture, attains a febrile height, and persists sometimes for days. As no observations exist as to the heat-regulation of these animals, I have made experiments on rabbits after puncture of the caudate nucleus by placing them in a cold environment, and in a box heated to various temperatures, and I find that their power of temperature regulation is less than that of normal animals. These animals, in a word, present all of the essential symptoms of fever, and I do not know why we should not call the

condition fever. If so, we must admit that injury to a circumscribed, definite region of the brain is capable of causing fever. This experiment, therefore, is of the greatest importance in support of the neurotic doctrine of fever. It indicates, of course, that we may have fever of purely nervous origin without any pyrogenic agent in the blood. This experimental evidence is supported by the clinical cases collected by White in Guy's Hospital reports (1884). It is to be hoped that by careful thermometric study of focal brain and cord lesions a more accurate idea may be reached than is now possible of the topography of the thermically active regions in the central nervous system of man.

Admitting the dependence of fever upon the nervous system, I do not regard as particularly profitable to our present knowledge the discussion as to whether febrile thermogenesis is excited by the withdrawal of thermo-inhibitory impulses, or by the stimulation of thermo-excitatory nerves or nerve-centres. If we regard, and there are forcible arguments for doing so, the heat-inhibitory nerves as anabolic, and the heat-exciting nerves as katabolic, then, inasmuch as the formative, or anabolic processes are manifestly in abeyance in fever, we can reasonably infer that the function of the heat-inhibitory nerves is impaired. The phenomena of the febrile chill, in which both the contractile and the thermogenic properties of muscle are stimulated, speak strongly in favor of direct irritation of the heat-exciting nerves in fever. We might infer, therefore, that both sets of nerves are affected.

But my aim in this lecture has been not so much to construct a theory of fever, a theory which, although it may be useful, must necessarily be largely speculative if it be coherent and rounded, but to bring before you the main facts concerning heat-production, heat-loss and heat-regulation in fever, and to point out the physiological basis on which their solution is to be expected.

Original Articles.

ON THE SELECTION OF A CLIMATE FOR PATIENTS WITH PULMONARY TUBERCULOSIS.¹

BY FREDERICK L. KNIGHT, M.D.,
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PREFACE.

I HAVE often been asked to give the profession some brief practical hints on the choice of a climate for tuberculous patients. I am induced to comply with this request, although there is still a great diversity of opinion among those conversant with the subject, because there seems to be so little attempt even at any guidance of patients in this important matter.

I shall make no endeavor to review the constituents of climate, or to philosophize on their mode of action. I shall briefly present typical cases of pulmonary tuberculosis of different kinds, and point out how I should determine whether the patient should be sent away from home at all, and if sent, to what region of our own country.

I wish it to be distinctly understood that I am giving simply my own convictions on this important subject, based upon twenty years experience, and that I

¹Read before the Boston Society for Medical Observation, March 5, 1886.

¹⁰Murri. *Teoria della Febbre*. Fermo, 1874.

do not claim that the principles which guide me are by any means universally accepted by climatologists. If I designate any special places for residence, it is because they offer some accommodations and are well known, but of course it will be understood that there are scores of similarly situated regions which would answer just as well as far as climatic conditions are concerned.

SHALL PATIENTS THREATENED WITH, OR ALREADY HAVING PULMONARY TUBERCULOSIS, BE ADVISED TO CHANGE CLIMATE?

This is a serious question, not to be settled offhand, and one entitled to much more consideration before being answered, than is usually accorded it. Not only is serious inconvenience and great expense often unnecessarily caused a patient and his family by hasty advice in this regard, but his condition is not infrequently made worse by it. This may happen in cases in which rest at home would have been better than any change, or in which the destination has been improperly specified, or perhaps not specified at all. In every case the condition of the individual patient must be carefully considered, whether any climatic change could possibly improve it, and, if so, what kind of a change would be most likely to effect it.

Other considerations, however, besides the disease of the patient, have an important bearing upon the question of change. Can the patient afford it? The physician should satisfy himself on this point, if possible, before mentioning its probable benefit to the patient himself, for it is cruel to recommend what is beyond the resources of a patient, and oftentimes more sacrifice than should be, is made to carry out ill-considered advice of the physician.

In reckoning the expense of change it must be considered: (1) Whether it is to be temporary or permanent; (2) Whether the patient can lead an idle life, or must engage at once in some remunerative occupation; or, having remained idle for a certain time, there would be a good prospect of his resuming some employment.

In answering the first question it must be borne in mind that, as a rule, if an arrest of the disease is sought, a climate should be selected, if possible, in which the patient can remain throughout the year; if palliation only is sought, then a mild climate might be chosen in winter, which would be utterly unbearable in the summer.

It is not always wise to tell a patient on leaving home that his stay is to be indefinite, but when once he is away it is not difficult to prolong his stay; in fact, if the invalid improves he is very apt to become attached to the spot where the improvement occurs. In answering the second question, it should be remembered that while an absolutely idle and indolent life is necessary for some patients, at least during the time of serious constitutional disturbances, there are many patients, free from such disturbances, who are better for occupation, provided it keeps them a good deal in the open air. Indoor life diminishes enormously the chances of improvement from change of climate.

For many years the one idea of the practitioner was to get his pulmonary patients into a mild climate, one soothing to cough, and this notwithstanding the fact that consumption was rife among the natives of the land to which they were sent. In more recent years, it having been found that elevated regions show a re-

markable exemption from the disease among their natives, it is becoming too much the custom to send all consumptives thither, without regard to their condition, ignoring the fact that the climatic conditions best suited to pulmonary disease, vary with the nature and condition of each case, and that those required for prophylaxis may be very different from those demanded for the treatment of advanced disease.

Patients with pulmonary tuberculosis present a great variety of conditions, of which the following are the principal types:

(1) Those presenting the earliest physical signs of tuberculosis of the apex; who have as yet shown little, if any, general disturbance from the disease, and who complain only of morning cough and expectoration. Threatened cases of hereditary disease, in which there are as yet no morbid physical signs, and not much constitutional disturbance, may usually be considered with this class.

(2) Patients with more advanced disease, showing some consolidation, but no excavation, nor any serious constitutional disturbance.

(3) Hemorrhagic cases, that is, patients in whom pulmonary hemorrhage has been perhaps the earliest, and a frequently recurring symptom, but in whom there is as yet no marked febrile reaction, nor much physical evidence of disease.

(4) Patients with advanced disease, those with cavities or severe hectic symptoms.

(5) Patients in an acute condition.

(6) Cases of so-called fibroid or interstitial pneumonia.

(7) Patients recovering from acute pleurisy or pneumonia, in whom the eruption of tubercle is dreaded.

(8) Patients in whom the tubercular process has seriously invaded the larynx.

(9) Those with complications of other diseases, heart, renal, intestinal, rheumatic, etc.

The first object to be secured is an out-door life in a pure air. This undoubtedly has a beneficent local effect, but the chief good comes through the general improvement in nutrition produced by an open-air life, and this is much increased by the ability of the patient to take exercise, and reaches its maximum benefit when he can lead an active, out-door life at considerable elevation (4,000 to 8,000 feet above the sea-level).

It will be seen as we go over the different classes of cases with reference to their individual indications that some of them are not suited to the severity of the mountain-air treatment. Changes of temperature in the mountains are often very great and very sudden, and though equality is not of so much importance as was formerly supposed, yet a certain amount of vigor is necessary to react properly to them. There seems little doubt that in suitable cases the improvement in nutritive activity is much more marked in mountainous regions than on the plains. There are probably several causes for this. (1) In a properly selected place, the air is rarified, causing increased respiratory activity. (2) The air is very dry and very pure. (3) The number of clear days when the invalid can be outdoors, is vastly in excess of those on the plains.

Certain modifying influences which pertain to the individual, have always to be borne in mind. It can be easily understood that a more rigorous climate, one involving the necessity of more active exercise can be recommended to men than to women. The difficulty

of securing sufficient out-door life for women, even in a mild climate, constitutes one of the chief factors in the relatively bad prognosis in tuberculosis in women as compared with men. Patients with much bronchial irritability often do less well in a very high altitude than in a lower one, and the same is sometimes true of a decidedly neurotic temperament. Age, also, must be considered in reference to possible removal to high altitudes. A very high elevation should not, as a rule, be recommended to a patient over fifty years of age.

Wherever the patient goes he should, if possible, consult some good physician of the region, who will lay out for him a plan of life. Many patients make themselves sick, and even destroy their chance of recovery by neglecting to consult a local authority for this purpose.

We will now consider the indications furnished by the types of the disease as before classified.

(1) Those presenting the earliest physical signs of chronic tuberculosis of the apex, who have as yet shown little, if any, general disturbance from the disease, and who complain only of morning cough and expectoration.

It is this class of cases especially which shows the effect of improved ideas of treatment. The change from the old plan of enforced invalidism to an active out-door life has brought about many cases of arrest in this stage of the disease. It is, perhaps, not saying too much to say that the prognosis has been changed as regards this class of cases from very bad to very good.

While I have had such patients do well in different climates, some of them without leaving home, the results have averaged far better, in my experience, in those who have sought mountain climate than in those who have pursued any other course. The region which I have found best for this kind of treatment is the eastern slope of the Rocky Mountains, in the States of Colorado and New Mexico, where the altitude ranges from 4,000 feet to 8,000 feet.

The question will naturally be asked whether the patient should go at once from the sea-board to such a high elevation, or make a number of stops on his way out, in order to become accustomed to the diminished pressure. I have never known any ill effect in patients of this class from making the change at once; but it is especially necessary that they should consult a good local medical adviser at once, that they may be guided from the beginning particularly in regard to the kind and amount of physical exercise which they should take.

(2) Patients with more advanced disease, showing some consolidation, but no excavation, nor any serious constitutional disturbance.

The mountain climate is suited to many of this class also, and it is fortunate if they are in condition to try it, but if considerable area of one lung, or the apices of both, are consolidated, and there is well-marked constitutional disturbance, if the pulse and temperature are both constantly above 100, then it may be well to try some low altitude first. For very low elevations, the dry, rather stimulating air of Aiken and its vicinity, or the pine regions of Southern Georgia, may be recommended for the greater part of the year, the patient going north in the summer. When quiescence in the morbid processes is established a move to the higher altitudes should be made.

(3) Hemorrhagic cases, that is, patients in whom a

pulmonary hemorrhage has been perhaps the earliest and a frequently recurring symptom, but in whom there is as yet no marked febrile reaction, nor much physical evidence of disease.

This class seems particularly suited to the high altitude treatment. Contrary to the old idea, these patients appear to be less liable to hæmoptysis in high altitudes than on the plains. I do not remember any patient of this class in whom the tendency seemed increased by the removal to a high altitude, and although such patients are usually advised to make several stops on their journey upward, I doubt if this precaution is often necessary. Of course it will be understood that what is said in this connection does not refer in any way to the hæmoptysis from rupture of a large vessel in a cavity of advanced disease.

(4) Cases of advanced disease, those with cavities or severe hectic symptoms.

Patients of this class had better, as a rule, stay at home; certainly if they are sick enough to be confined to the house. They can usually be made much more comfortable in their own homes than at any health resort, yet I have sometimes advised that such a patient with very constant and harassing cough be sent to the moist climate of Florida, and the relief to the cough has more than compensated for the want of some home comforts. A poor patient, or one without abundant means even, should not be given such advice.

(5) Patients in an acute condition.

These may be quite different in their nature and requirements. We find (a) cases of acute general infiltration. These patients should be kept at home definitely. (b) Cases which begin violently with high fever and marked consolidation of lung, resembling pneumonia. Patients of this class should be kept at home till after the subsidence of the acute symptoms, and then may be removed to some low, dry place; afterward increasing elevations may be carefully tried. (c) Cases of acute exacerbation during the progress of chronic disease. Patients of this class should remain at home during the acute stage, going, perhaps, to some mild, sedative climate during its decline; but as soon as possible after the febrile disturbance is well over, if their condition otherwise warrants it, they should go to an elevated region.

(6) Cases of so-called fibroid or interstitial pneumonia. Special indications in these cases have to be considered. If the patient is young, and the heart is not enlarged, he may be sent to high elevations. If he is over fifty years of age, or if his heart is dilated, or if his cough is very harassing, a lower altitude should be chosen. Southern California offers excellent places for such, with varying elevation and moisture to suit individual symptoms.

(7) Patients recovering from acute pleurisy or pneumonia, in whom the irruption of tubercle is feared. High elevations is the place *par excellence* for these. The increased respiratory and consequent increased nutritive activity are exactly what is wanted to prevent the development of chronic disease.

(8) Patients in whom the tubercular process has seriously invaded the larynx.

Such patients should be recommended mild, and even moist climates, and on no account be sent to high altitudes. Southern California answers the purpose well. The dry air of high altitudes, however much good it may do by stimulating general nutrition, usually proves so great a local irritant to the larynx

that incessant cough ensues, or, if the disease is situated high in the larynx, the swelling and ulceration of the cartilages are aggravated so that severe dysphagia and insufficient nourishment ensue.

(9) Those with complications of other diseases.

In regard to these a good deal of care has to be exercised oftentimes. In case of cardiac affection it may be said that while marked dilatation should prevent a patient's being sent into a high altitude, it is not necessary to exclude every one from such who has a cardiac murmur, or who even is known to have organic valvular disease, with moderate hypertrophy, but such patients should be carefully watched and regulated in their habits, and should not be sent into the very highest altitudes.

In regard to renal disease, while it is admitted by the perident physicians that *acute* nephritis is severe in high altitudes, they do not admit that patients with chronic disease are made worse, but claim rather that they are benefited by a residence there.

Patients with intestinal ulceration are said to do badly in high altitudes, but they do badly everywhere.

In regard to the rheumatic diathesis, it may be said that acute rheumatism is thought to be rather prevalent and severe in high altitudes, and such a tendency might turn the balance in favor of a lower resort. On the other hand the chronic form of rheumatism does not seem to be made worse by elevation.

THIRTY CASES OF LAPAROTOMY.

BY J. W. ELLIOT, M.D.

In Table I there are twenty-two cases, with one death, or four and a half per cent. mortality. Of the entire thirty cases four died; thirteen per cent. mortality. If we exclude the unfinished operations, there are twenty-seven cases, with two deaths, or seven per cent. mortality.

I shall not speak of the technique or manner of operating, as that is practically settled, but shall merely report the cases very briefly. As fatal cases are always instructive they are given more in detail.

The table contains all the laparotomies I have done to date. They are not selected cases, as I have never refused to operate in an unfavorable case where the operation was indicated, but have considered it a matter of duty to give the patient a last chance. Two out of the four deaths here recorded were of patients in almost a dying state at the time of operation. To offset these trying cases four others have been saved by the operation from a similar condition.

In the thirty cases all the wounds which were closed (that is, where no drainage-tube was used) have, with a single exception, healed by first intention, without even a suppurating stitch-hole. There is but one case of hernia at the scar, and that was the result of wearing a drainage-tube for over a year. In closing the wound the whole abdominal wall is included in wire sutures, and the patients are always kept in bed for two weeks.

Beside the ordinary methods of cleanliness and antiseptics, I have abandoned sponges as being a cause of infection, and use in their stead an artificial sponge made of worsted, as already described.¹

There were fourteen hospital patients, with four deaths, and sixteen patients operated on either at home or at a private hospital, without a death.

Under ovariectomy are included both large and small ovarian tumors. Among fifteen cases were four dermoid and three papillomatous cysts. One died. All but one of the others have been heard from, and have remained well. The first five cases have already been reported.²

CASE VI was a dermoid cyst complicated with a complete prolapse of the uterus. At the operation I was able to pucker up the broad ligament and include it in my ligature in such a way as to hold the uterus well up in antversion. It is now nearly three years, and there has been no return of the prolapse.

CASE VII was a small cyst of the broad ligament. After removal it was found to contain a papillomatous nodule of considerable size. This case suggests the importance of early operations.

CASE X. Two cysts: one with a twisted pedicle. At the operation the bladder was found spread out flat and glued to the under side of the abdominal wall. This was encountered in the incision, and with difficulty avoided. Two ovarian cysts were removed. One a papillomatous cystoma, which had been treated for a fibroid of the uterus by her physician with ergotine injections; and papillomatous excrescences were found protruding through the holes made in the cyst wall by the injecting needle. These papillomatous excrescences had not yet infected the peritoneum, but had caused ascites. This cyst is preserved in the Warren Museum of Harvard University. The other cyst contained blood, and had a twisted and degenerated pedicle. After the operation the temperature rose to 102° on the first day, and continued high; between 102° and 103°. On the fifth day, the patient being considered septic, the wound was re-opened and a quantity of pus found between the omentum and the abdominal wall. On the sixth day, as the patient seemed to be dying of blood-poisoning, transfusion of salt and water was tried with only temporary benefit, and she died on the same day. It was afterwards discovered that by a mistake of the assistant several instruments not properly cleansed were mixed in with the "laparotomy instruments." I have never been able to decide in my own mind whether the septic infection came from the doubtfully clean instruments, or from the twisted and degenerated pedicle.

CASE XI was an obstinate and discouraging case of neurasthenia, sent to me by Dr. J. J. Putnam for local treatment. The uterus was retroverted, and both ovaries were large and tender. After some local treatment and several consultations, Dr. Putnam advised removal of the ovaries. Dr. Homans also advised the operation. The enlarged ovaries proved to be true cystomata. The effect on the neurasthenic condition was excellent, and the patient is now almost perfectly well. The retroversion has never returned.

CASES XIV and XV were suppurating cysts so adherent that their removal was impossible. The cyst walls were, therefore, stitched to the abdominal walls and drained. These cases have been reported in full.³

Out of a large number of diseased fallopian tubes which have come under my care within the last three

¹ B. M. and S. Journal, Nov. 26, 1886.

² B. M. and S. Journal, Jan. 29, 1885.

³ B. M. and S. Journal, Nov. 11, 1886.

THIRTY CASES OF LAPAROTOMY.

TABLE I.—OPERATIONS FOR DISEASES OF PELVIC ORGANS.

A.—Diseases of the Ovary, Ovariectomy.

No.	Date of operation	Age	Married or single	Hosp. or private	Pathological condition found.	Ovaries removed	Drainage	Result	Remarks
1	1884 January	32	M.	H.	Large cystoma deep in broad ligament	Both	No	Recovered	.....
2	March	49	M.	H.	Dermoid Cyst (large)	One	No	Recovered	Well in 1886
3	October	22	S.	H.	Cystoma	One	No	Recovered	Alive in 1888
4	October	24	S.	P. H.	Dermoid Cyst	One	No	Recovered	Well in 1888
5	November	28	M.	H.	Parovarian Cyst	One	No	Recovered	Well in 1887
6	1885 May	38	M.	P. H.	Dermoid Cyst	One	No	Recovered	Well in 1888
7	June	25	S.	H.	Papillomatous Cyst of broad ligament	One	No	Recovered	Well in 1888
8	October	24	M.	H.	Dermoid Cyst L. O. Cystoma R. O.	Both	No	Recovered	Well in 1888. Catamenia have not appeared since operation
9	November	23	S.	P. H.	Small fibroma of ovary	One	No	Recovered	Other ovary removed later by Dr. G.
10	1886 February	40	M.	H.	Papilloma of R. O. hæmatoma with twisted pedicle L. O.	Both	No	Died	Septic Peritonitis
11	April	32	S.	P. H.	Small cystomata of both ovaries	Both	No	Recovered	Well in 1888
12	May	39	M.	P.	Suppurating tubo-ovarian cyst. Cyst broad lig.	One	Yes	Recovered	A very severe operation. Well in 1888
13	1887 January	28	S.	P.	Cystoma both ovaries, cyst broad ligament	Both	Yes	Recovered	Well in 1888. Catamenia irregular since operation

Drainage of Suppurating Ovarian Cysts.

14	1885 April	19	S.	H.	Suppurating Cyst, universally adherent.	One	Yes	Recovered	Sinus closed in about one year. Married and well in 1887
15	April	28	M.	H.	Suppurating papilloma universally adherent	One	Yes	Recovered	Relieved for two years, then another tumor appeared, patient lost sight of

Removal of Ovaries not the Seat of Tumors.

16	1885 May	37	S.	P.	Fibroid tumor of uterus	Both and tubes	No	Recovered	In 1887 menstruation had never returned. Fibroid disappeared
17	1887 October	30	S.	P.	Profound hysteria of long standing	Both and tubes	No	Recovered	Three months later great improvement. No menstruation
18	1888 January	33	S.	P. H.	Chronic ovaritis and peri-ovaritis	One	No	Recovered	Pelvic peritonitis for 10 years before the operation

B.—Diseases of the Fallopian Tubes, Salpingotomy.

19	1885 April	35	S.	P.	Salpingitis	Both Tubes	No	Recovered	A small piece of one ovary left. Menstruation has continued irregularly ever since operation. Patient cured
20	1887 January	27	M.	P. H.	Double Pyosalpinx of large size	Both Tubes	Yes	Recovered	Left tube contained 8 oz. of pus
21	May	26	M.	P. H.	Hydrosalpinx	One	No	Recovered	Cured

C.—Diseases of Uterus. Hysterectomy.

22	1886 November	37	S.	H.	Fibroid of uterus growing rapidly	..	No	Recovered	Extra peritoneal stump. Temperature normal on third day. One year after operation the patient was well and working in a mill
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TABLE II.—OPERATIONS FOR DISEASES OF OTHER ABDOMINAL ORGANS.

A.—Evacuation of Pus.

No.	Date of operation	Age	Sex	Hosp. or Private	Pathological condition found	Operation	Drainage.	Result	Remarks
23	1885 June	28	F.	H.	Suppurative peritonitis due to suppurating ovarian cyst	Evacuation of pus and drainage	Yes	Recov.	Patient in a very critical condition at the time of operation
24	1887 November	32	M.	P.	Intra-peritoneal abscess due to perforating appendicitis	Evacuation of pus and drainage	Yes	Recov.	General adhesive peritonitis. Incision parallel to Poupart's ligament

B.—Intestinal Obstruction.

25	1886 May	44	M.	H.	Cancer very high up in rectum	Median incision; bowel stitched to wound and opened	No	Died	Obstruction had existed for a month and the patient was almost in a dying condition
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C.—Evacuation of Ascites.

26	1886 April	43	F.	P. H.	General peritoneal cancer	Median incision and permanent drainage	Yes	Recov.	Great relief from drainage. Died later of the disease
27	1887 December	14	F.	P. H.	Tuberculosis of Peritoneum	Thorough evacuation of ascites	No	Recov.	Great relief. Well four months later

5 Cases, 1 Death.

TABLE III.—EXPLORATORY AND UNFINISHED OPERATIONS.

28	1884 April	30	F.	H.	Sarcoma of ovary and pyosalpinx	Exploratory incision	No	Died	Patient in a dying condition; operation done as a forlorn hope
29	1886 May	32	F.	H.	Chronic peritonitis, salpingitis and ovaritis	Attempt to remove ovaries and tubes	No	Died	Operation abandoned on account of adhesions. Death from peritonitis. Autopsy showed that the operation was impossible
30	1887 October	31	F.	P. H.	Fibroid deep in broad ligament	Tumor partially enucleated and blood supply and part of pedicle ligatured	Yes	Recov.	Operation abandoned because the tumor seemed to be on the ureter

3 Cases, 2 Deaths.

years there were four cases where it was necessary to remove the tubes, one case (No. 12) being included in the ovariectomy table on account of complications. All recovered, although the abdominal cavity was contaminated with pus in two cases.

CASE XIX was a double salpingitis complicated with a retroversion of the uterus, which was permanently cured by puckering up the broad ligaments. Menstruation has continued, although the tubes were removed close to the uterus.⁴

CASE XX. The left fallopian tube was as large as a cocoon, and imbedded in the broad ligament and adhesions. The right was enlarged to the size of a fist so close to the uterus that there was no pedicle. It was necessary, therefore, to amputate it without clamp or ligature, and take up the vessels separately. Pus escaped into the abdominal cavity, and a glass drainage-tube was used. The patient made an excellent recovery, and was up on the fourteenth day.

CASE XXII was a very rapidly-growing fibroid. The uterus was amputated at the internal os. The uterine canal at that point was large enough to admit two fingers. The stump was constricted with a wire ecraseur, and treated extra-peritoneally. The peri-

toneum was stitched to the stump below the wire. Recovery was uninterrupted.

The operations in Table II were all for very formidable diseases, and the mortality is higher than in Table I.

CASE XXIV was a laparotomy done for perforation of the vermiform appendix.⁵

CASE XXV. Intestinal obstruction had existed for a month, and the patient was in a very bad way. There was vomiting, the abdomen was greatly distended, and the pulse was rapid. Nothing could be discovered per rectum. At the operation the seat of obstruction could not be found on account of the enormous distension of the intestines, so a loop of intestine was opened and stitched to the abdominal wound. The intestine failed to unite firmly to the wound (probably on account of the poor general condition of the patient). There was, therefore, leakage of feces into the peritoneal cavity, which caused peritonitis and death on the eighth day. The autopsy showed a cancerous obstruction high up in the rectum.

CASES XXVI and XXVII. Both patients were very large with ascites; in one case due to cancer of the peritoneum, and the other to tuberculosis. Both cases were interesting on account of one point in diagnosis; name-

⁴ B. M. and S. Journal, April 15, 1886.⁵ Reported in full in B. M. and S. Journal, Jan. 19, 1888.

ly, in both, the loins were tympanitic on percussion, while there was dullness over the whole of the rest of the abdomen; and change of position did not change the percussion notes. This, in itself, is almost a certain sign of an ovarian cyst as against free fluid. Nevertheless, being led to suspect malignancy in the first case by the general bad condition of the patient, I tapped and drew off ascitic fluid. The second case I suspected to be tuberculosis on account of the age of the patient, (fourteen years), and therefore tapped, and got ascitic fluid. At the operations it was discovered that the disease in each case had puckered up the mesentery, and bound the intestines to the back of the abdominal cavity. For this reason the intestines were not free to float on the fluid; hence the tympanitic loins.

CASE XXIX. The patient was sent to me by Dr. W. E. Boardman, who had treated her for several years for chronic pelvic peritonitis. He thought the trouble was due to disease of the tubes, but was in doubt about the possibility of removing those organs in this case on account of long and severe peritonitis. The patient was in a deplorable condition, having been unable to earn her living for several years on account of attacks of peritonitis, and being deserted by her husband on account of vaginal tenderness. Her life was a burden, and she wanted to die. She had had two abscesses opened per vaginam, and had been in the City Hospital two or three times, where fluid had been aspirated from the pelvis. At the operation all the intestines and organs were found firmly glued together so that nearly three-quarters of an hour was consumed in tearing away adhesions to get down to the left ovary. The wall of a small cyst was found matted against the tube and intestine. The tube had become a cicatricial strand. After tearing away a piece of the cyst wall the operation was abandoned as impossible. After vomiting constantly for three days she died. At the autopsy no pus was found, but there was very extensive peritonitis. The ovaries and tubes had become cicatricial tissue, and could not be removed without tearing open the intestines at several points. I cite this case in full because it shows clearly one of the limitations of this operation. After a little successful experience in tearing out universally adherent ovaries or tubes, one is led to suppose that there are no limitations.

I am profoundly impressed by the fact that several of the worst cases recovered when there seemed to be little hope, and that all but one of the fatal cases would probably have recovered if they had been operated on earlier. This leads me to believe that there are still many lives lost for the want of prompt laparotomy. Unfortunately the general practitioner has been over-impressed by recent articles on the "laparotomy craze"; and it is undoubtedly true that ovaries and tubes have been unnecessarily removed by certain operators. I am sure, however, that this view has been greatly exaggerated and when we come to the more fatal class of diseases such as intestinal obstruction, perforation, purulent peritonitis, and the like, the situation is so difficult and appalling that there is no danger of the operations being lightly undertaken or overdone. Now that such operations are clearly established, what is wanted is a realization by the general practitioner of their value. No patient should be allowed to die of an abdominal affection without full consideration of the chances of relief offered by laparotomy.

My experience has made me enthusiastic about the operation, and it seems to me that the community is just beginning to get the full benefit of the fine work of the earlier operators. They have shown the possibility of these operations, and established the technique. And now the present generation has so reduced the mortality that the operation has become of the greatest practical value.

ON SIMPLE EXTRACTION OF CATARACT.

BY HERMAN KNAPP, M.D., OF NEW YORK.

A FEW weeks ago, on February 23d, Dr. Hasket Derby published in the JOURNAL a paper on "The Dangers of Simple Extraction of Cataract."

The paper is a plea for the method of Von Gräfe. The dangers of simple extraction pointed out by Dr. Derby are real; but this is no sufficient reason to condemn an otherwise superior operation. If a sharp knife is more dangerous than a blunt one, it does not follow that we should prefer the latter, for with proper caution we may have the benefit of the former without its danger. That simple extraction yields the better results, results which, in the successful cases, Gräfe himself called ideal, is beyond controversy. The question for him and his time was: Shall we prefer inferior results in a greater number, or superior results in a smaller number? At the present day I believe this alternative is no longer before us. In simple extraction not only the visual results are better, but also the failures less frequent than in the combined method. Suppuration, owing to antisepsis, has become exceptional; and prolapse of the iris, owing to cocaine, eserine, and a perfected technique, becomes more and more rare, and is little to be dreaded; besides, an iris prolapse can always be removed. The occurrence of irido-cyclitis after Gräfe's operation, which insidiously destroys one eye, and occasionally both, weighs, in my opinion, more than all the dangers still adherent to the simple method.

This question can, however, not be decided by belief and argument, but by experience, experience so large that the element of chance disappears. We have, as Dr. Derby justly remarks, reliable and extensive statistics of the results of Gräfe's operation, but not yet of simple extraction. The Europeans, thus far, have given only general statements.

Dr. Derby in his communication, cites forty-eight simple extractions, the results of which, he correctly says, compare unfavorably with those of other methods. Dr. C. S. Bull, of New York, publishes,¹ in tabular arrangement, thirty-six simple extractions. His results were very good. Dr. Derby further quotes the present writer's report, at the last meeting of the American Ophthalmological Society² (July, 1887), on sixty-eight extractions, with two total losses. This requires a correction, in so far as one of the losses marked in the *Transactions* $\frac{1}{2}$ (mere perception of light) was converted by a subsequent dissection into a good result, namely, $V=\frac{3}{8}$. Since June, 1886, I have practiced simple extraction, as a rule, combined extraction as the exception. Of 154 extractions, 132 were made without, 22 with iridectomy. Accidents during the operation have been less frequent than in

¹ Transactions of the American Ophthalmological Society, 1887, p. 413.

² Transactions, p. 419.

Gräfe's method. Prolapse of the iris occurred in 14 cases, in four it disappeared spontaneously, in four it was removed with scissors, in the others (except one) it was too small to require interference. In no case of prolapse was there any irritation, and the sight was good in all.

One case of the 154 was a failure. It referred to a patient suffering from diabetes (6% sugar) and chronic purulent dacryocystitis. In all the others good vision was restored. The ominous symptom $\frac{1}{2}$ does no longer appear in the record; there was no case of irido-cyclitis.

The visual results of the first 100 cases, which I have just compiled for a detailed communication in the *Archives of Ophthalmology*, were as follows:

V = $\frac{20}{20}$. . . in 21 cases	V = $\frac{20}{100}$. . . in 12 cases
V = $\frac{20}{30}$. . . in 18 cases	V = $\frac{20}{50}$. . . in 10 cases
V = $\frac{20}{40}$. . . in 11 cases	V = $\frac{15}{50}$. . . in 2 cases
V = $\frac{20}{50}$. . . in 8 cases	V = $\frac{30}{50}$. . . in 1 case
V = $\frac{20}{60}$. . . in 16 cases	V = 0 . . . in 1 case

I may add that the cases were in no way selected, and that V represents the visual acuteness of the last record entered in the case book.

To obtain high degrees of V, a subsequent division of the capsule is necessary in the majority of cases. In these first 100 cases 54 dissections have been made thus far. They were all successful.

If, in conclusion, I may formulate my opinion on this subject, it is as follows: Gräfe's method can neither in excellence nor safety compete with simple extraction; it deserves no longer to be the general method, but it will, in a certain number of cases, be the preferable operation, in some the only operation possible.

REPORT ON PROGRESS IN SURGERY.¹

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

LAPAROTOMY FOR INJURY.

SIR WILLIAM MACCORMACK, in the annual oration in May to the Medical Society, spoke on this subject, and advocated an early and more general application of the operation of laparotomy to all intra-peritoneal injuries endangering life, and of exploration of the abdomen in penetrating wounds of the abdomen, gunshot wounds, and traumatic rupture of the abdominal contents without external wounds. Reference was made on this occasion to several cases that had been successfully treated by London surgeons, but it is to Parkes, Morton, Kinloch, and other surgeons of the United States, that we are indebted to the fullest and most recent information on this subject.

Farquhar Curtis has sounded a warning note against the indiscriminate application of laparotomy to this class of cases, and has endeavored to point out the indications for operation, and also the contra-indications. He has pointed out that if the operation is performed while the patient is in a state of collapse, that the result will almost inevitably be fatal, and will bring discredit not only upon the operative procedure, but also on the operator. That a serious injury of any abdominal viscus may be successfully treated by laparotomy has been shown by Burekhardt, of Stuttgart,

who early in the year reported a case in which death from hemorrhage was averted by exposing and plugging a deep incised wound of the liver.

LAPAROTOMY IN CASES OF PERITONITIS WITH PERFORATION OF INTESTINE.

Dr. Th. Eschar reports in detail²⁷ five cases of perforation, two of which recovered, although purulent peritonitis was present at the time of operation. In both the perforation was closed at the operation. Eschar discusses at length the question, in case of perforation or necrosis requiring resection, of whether immediate closure of the intestine by suture, as advocated by Krönlein and Mikulicz, is indicated in all cases. His conclusions are that in traumatic cases of peritonitis with perforation, laparotomy and intestinal suture, with resection, if necessary, should be the rule; but for pathologic cases, the extent of operative interference justifiable depends on the conditions of each individual case, and that the treatment of these cases is closely analogous to that for gangrenous herniæ. Eschar also states that the collection of free gas in the abdomen, which has frequently been designated as one of the most certain signs of "perforation-peritonitis," is occasionally absent. In two autopsies the injury was in the jejunum, in one a double complete transverse separation of the intestine; and the writer believes that in cases of perforation where free gas is absent, or where the appearance of symptoms denoting its presence are delayed, one can assume with certainty that the jejunum is the seat of the lesion.

LAPAROTOMY FOR SUPPURATIVE PERITONITIS.

Mr. Barwell has recently reported a case²⁸ of recovery from a suppurative peritonitis in a man who had been struck on the abdomen, but who seemed but little hurt. Five days afterwards, while stooping, he felt a severe pain in the abdomen, vomited, and passed a little dark-colored urine. The next day he entered the Charing-Cross Hospital, and a laparotomy was done, the abdomen being washed out with ten pints of distilled water at a temperature of 99°. A quantity of pus was evacuated, and the abdomen was closed completely, no drainage-tube being used. Mr. Barwell points out that the operation has been performed fourteen times, though not always done for the same trouble. The precise circumstances of the case have been, various ulcers, ruptures of the intestinal tract or of an ovarian cyst. He considers that to attempt to drain the back of an abdomen through a drainage-tube in the anterior wall is an absurdity, and may be a source of direct injury. He considers, if there is much distension following an operation, or if it is thought necessary to drain the abdomen of collected fluid, that it is better to remove the lower stitches and allow the fluid to escape in the male; in the female, he thinks that vaginal drainage would be indicated. Mr. Barwell claims for Mr. Hancock the credit of opening the abdomen for suppurative peritonitis.

LAPAROTOMY IN PERITYPHLITIC ABSCESS, WITH ESPECIAL REFERENCE TO PERFORATION OF THE APPENDIX VERMIFORMIS.

This paper by R. F. Weir consists²⁹ of a critical an-

²⁷ Wien. Med. Wochenschr., 1887, Bd. xxxvii, s. 18-22.

²⁸ Lancet, November 5, 1887.

²⁹ N. Y. Med. Rec., June 11, 1887.

¹ Continued from page 320.

alysis of ten reported cases, and a plea for earlier and more decisive treatment. He concludes that anesthesia in these cases should be very limited in degree, or replaced by cocaine, and recapitulates the following propositions: due to inflammation or perforation of the appendix, (1) That the generality of perityphilitic abscesses are vermiformis. (2) That the mortality in such lesions is greatest prior to the third day. (3) That as soon as it can be recognized, pus should be evacuated extra-peritoneally if possible, or by lateral laparotomy, and the cavities drained. (4) That if aspiration fails to detect pus where a tumor exists, it is wiser to make an early extra-peritoneal exploratory incision. (5) That where general peritonitis is progressing, with any history of a right iliac pain, a limited lateral (preferably) or a median laparotomy should be made to explore the region of the appendix within forty-eight hours of the inception of the disease. (6) That if pus is thus recognized, it should be evacuated and a drainage-tube inserted without toilet of the peritoneum.

THE USE OF HOT WATER WITHIN THE PERITONEAL CAVITY DURING AND AFTER LAPAROTOMY TO PREVENT SHOCK.

Towels wrung out in hot water to protect the intestines when turned out of the peritoneal cavity has been used a long time; but W. Gill Wylie⁴⁰ advocates the use of water at a temperature of 105° to 110° for the purposes of irrigation. He considers its use in a prolonged operation to be a powerful and efficient agent, lessening, if not preventing, the effects of shock. It further acts as an efficient hæmostatic for oozing points too numerous and small to tie.

PENETRATING GUN-SHOT WOUNDS OF THE ABDOMEN.

A very complete and careful review of the cases now on record of this class of injuries⁴¹ treated by laparotomy gives the following interesting information concerning the value of this method: Total number of cases, 71; total number of recoveries, 30 (42 $\frac{2}{3}$ %).

CLASS I. Operation within twelve hours after injury, 38 cases: recoveries, 19 (50%); deaths, 19.

CLASS II. Operation later than twelve hours after injury, 20 cases: recoveries 4 (20%); deaths, 16.

CLASS III. Interval between injury and operation unknown, 13 cases: recoveries, 7 (53 $\frac{1}{3}$ %); deaths, 5; doubtful, 1.

Seat of injury, 57 cases: small intestines, 30; colon, 13; stomach, 6; liver, 5; duodenum, 2; kidney, 2; rectum, 1; bladder, 1.

Of the symptoms recorded in the reports of 57 cases vomiting occurred in 15, including 4 cases of hæmatemesis. Hepatic resonance was noted in 3, tympanites in 4, shock in 15. In 4 cases shock was stated to be absent.

COLOSTOMY OR INTESTINAL RESECTION.

The question to decide where one is compelled to resect an intestine, whether immediate suture of the intestine or an artificial anus is the most desirable treatment, is often a difficult one, especially where ascending colon or ileum is involved. Hahn's statistics in cases of resection of the colon seem to favor an artificial anus.⁴² Of these cases, in 18 the intestine was sutured (10 deaths, 55.5%); while in 8 cases of

artificial anus 3 deaths occurred (37.5%). In discussing these results, Hahn⁴³ states that although these results favor the formation of the artificial anus, still one must, before deciding in favor of this operation, learn the mortality from the secondary operation for closing the latter. In favor of extensive resection, he reports two cases of successful removal of part of the colon and ileum for sarcoma; in one, about one meter of the colon, cæcum, and ileum. In both these cases an artificial anus was made. The following are the cases of resections where one meter or more has been removed: In 1884, Baum⁴⁴ removed 1.37 meters from the small intestine of a patient, aged forty, for strangulated inguinal hernia, fecal fistula, and mesenteric abscess; immediate suture; death at end of four months from marasmus, from malnutrition.

In another case, Koeberle, in a woman aged twenty-two, on account of obstruction from several strictures, resected altogether about two meters of small intestine with success; after-result not known. The only other case found is that of Kocher's: Patient a man, aged fifty-seven, with gangrene from a strangulated inguinal hernia; 1.60 meters removed from small intestine; primary suture; complete recovery.⁴⁵ It is extremely important to know in this class of cases how much intestine can be resected with safety. It would seem that a loss of a large extent of small intestine is better borne than an equal amount of ileum and colon. Whether a portion of the colon is more fatal than an equal amount of small intestine, is not yet decided.

THE RADICAL CURE OF HERNIA.

A long series of papers⁴⁶ read at the annual meeting of the British Medical Society at Dublin by Mitchell Banks, MacEwen, Arthur Barker, and others, proves that the method of free incision has, in the practice of most surgeons, superseded the subcutaneous method. These papers together with their accompanying tables of cases, show the comparative safety and the general good results, as far as can be determined at present, of the more modern methods of procedure, but there is still much difference of opinion as to the treatment of the sac, and as to whether the canal and external ring should be closed by sutures or not. Banks believes that all cases in children should primarily be subjected to treatment by truss before one proceeds with the more severe operative procedure.

SPLENECTOMY.

The spleen has been successfully removed a number of times during the last six months. Leonard, of Philadelphia, has recently reported a case of the successful removal of an hypertrophied spleen, and asserts that in twelve out of seventeen cases that have been recorded since the year 1881 this operation was successful. Other successful cases have from time to time been published by Myers, Severeanu at Bucharest, and Sir Spencer Wells.

THE TREATMENT OF HÆMORRHOIDS BY THE FORCIBLE DILATATION OF THE ANUS.

Trelat⁴⁷ employs only a bivalve speculum of solid

⁴⁰ N. Y. Med. Rec., March 19, 1887.
⁴¹ W. B. Coley, Harv. Med. School, Boylston Med. Soc., March 10, 1888.

⁴² Twenty-six resections; 13 deaths from the operation (50%).
⁴³ Ein Beitrag zur Colotomie. Resection des colons und Ileum der Ausdehnung von einem Meter Heilung. Berl. Klin. Wochenschr., 1887, Bd. xxiv, 146.

⁴⁴ Wie viel Darm kann der Mensch. Entbehren Fortschritte der Medizin, 1884, No. 24.
⁴⁵ Correspondenzblatt f. Schweizer-Aerzte, 1886, No. 5.

⁴⁶ Brit. Med. Jour., Dec. 31, 1887.
⁴⁷ Le Progres Medical, May 14, 1887.

steel, which can dilate the anus so that four fingers can easily be admitted. This is done slowly and carefully, that no tearing of the tissues may occur, and is made to dilate it in various directions. When there is any considerable loss of blood he uses the thermocautery, but ordinarily finds that there is no necessity for its use, and there is a rapid subsidence of the symptoms and a complete recovery of his patients.

BASE-BALL PITCHER'S ARM.

A. H. P. Leuf has contributed an interesting paper on this subject,⁴⁸ in which he clearly sets forth the pathology of this affection. It seems that in its severer and more chronic forms we have a painful osteitis and periostitis, combined with a strain of the ligaments and muscles. In order to give the ball different curves individual sets of muscles are called into play. For instance, to give the in-curve, the pectoralis-major, the biceps, brachialis anticus, and flexors of the forearm; the out-curve is accomplished by the pectoralis-major, coracobrachialis, infraspinatus, teres-minor, and the ulnar muscles; the down-curve strains especially the pectoralis major, trapezius, deltoid, and serratus magnus; the up-curve is caused by the pectoralis major, biceps and supinator brevis. All of these movements are given in a quick, jerky manner, bringing a great strain on the individual sets of muscles besides tending to separate the bones at the outer part of the elbow-joint, this being prevented by the biceps, supinator longus, and extensor carpi radialis longior.

The symptoms produced by this affection are soreness, tenderness, myalgia, and severe continuous sickening pains, due to involvement of the bone. It is, of course, only in the long standing cases that there is an involvement of the bone.

The treatment should be prophylactic, and the pitcher should each day practice in the sun. Liniments, massage and rubbing are all useless. Heat is the best application, with elevation of the limb. This will often relieve the pain in these cases. The main point in treatment is regular exercise, and not rest.

SUBCUTANEOUS INJECTION OF BLOOD, SALT-SOLUTION INFUSION AND INTRAVENOUS TRANSFUSION.

The alarming symptoms often following the ordinary method of intravenous transfusion, such as fever-chills, albuminuria and hæmoglobinuria, etc., show conclusively that it is not one unattended with danger. These symptoms von Ziemssen considers not due to the injection of the defibrinated human blood, but are wholly due to the perishing blood with its ferments, fragments of fibrin coagula and air bubbles which are also injected into the circulation. Von Ziemssen proposes⁴⁹ to avoid these dangers by injecting the blood into the subcutaneous cellular tissue instead of into a vein. The blood should be with extreme aseptic precautions thoroughly defibrinated. It should be kept at a temperature between 37°-40° Cent. With a small syringe under chloroform narcosis 25 cc. of the prepared blood is injected deep into the subcutaneous tissue, (thigh preferably) which is then vigorously massaged by an assistant. The massage is an important element in the operation. For each fresh injection a new

puncture is made. The pain subsequent to the operation is alleviated by an ice-bag, and the patient kept at rest. The writer states no limit to the amount to be injected, which in one case amounted to 350 gms. by fourteen punctures. His directions are to use the entire supply of blood at hand. The process is without danger. Suppuration has occurred in only two points of puncture, and from causes easily to be avoided. In no case has rigor, fever, albuminuria, etc., been observed. The subcutaneous tissue filters from the blood the coagula, air bubbles, and other elements of danger, while the red corpuscles pass rapidly into the circulation. After a few days all traces of free blood at the site of injection is gone, and the circulating blood shows an increase of hæmaglobin. For twenty-four hours this amount increases to sometimes double that observed before the injection, but during the following four to five days falls slowly to an amount which then remains constant, but always in excess of the original amount. By repeated injections it can be eventually raised to the normal amount. There is also a corresponding increase of the red corpuscles. Von Ziemssen has obtained by this method recovery from severe chronic anæmia, from different causes, after a month's treatment, but has not yet tested it in acute cases, after violent hæmorrhage, although he considers it suitable for such patients. If blood cannot be used he recommends a salt solution. It is easier than the intravenous method, and absolutely without danger, and ordinary spring water which has been sterilized by boiling, can be satisfactorily used. Since absorption is very easy, anæsthesia is not required, and 600 g. water can be injected through four to five punctures. This surmounts the first danger from emptiness of the heart and consequent cardiac failure, and gives an opportunity for the preparation of the blood. The salt injection in really severe hæmorrhages seems only to postpone a fatal end, and new blood must be obtained from some external source as soon as possible.

INCREASED BONE FORMATION BY ELASTIC COMPRESSION.

Helfferich claims that his experience during the past six years in numerous instances has convinced him of the utility of this practice in cases of retarded or insufficient callus formation after fractures, necrosis with deficient bone formation, or resulting spontaneous fracture. At the sixteenth German Surgical Congress⁵⁰ he described his method based on the facts that both physiological and pathological bone-growth is increased by hyperæmia, and that a young bone may thus be made thicker and longer. An elastic rubber tube is passed around the limb proximally from the affected area, and fastened so that a slight venous hyperæmia results from the limited constriction. If painful it can readily be loosened by the patient. A bandage above and below the diseased part localizes the hyperæmia. Splints or plaster fixation is also used. At first the compression is applied for hours. Soon the bandage is worn continuously, and patients soon become accustomed to it. Shortening following fracture or infantile paralysis was thus improved. A normal tibia had been lengthened in a girl aged fifteen to correspond in length with its opposite, which was elongated from disease. The method is contraindicated in fractures with large granulating wounds,

⁴⁸ Med. News, June 16, 1887.

⁴⁹ *Fieber subcutane Blutinjektion Salzwasser Infusion und Intravenöse Transfusion Klin. Vorträge*, 1887, No. 3.

⁵⁰ *Centbl. f. Chir.*, 1887. *Beiblatt.*, s. 25.

tubercular osseous disease, or after operations for malignant tumors.

TREATMENT FOR FAULTY UNION OF FRACTURES OF THE CARPAL EPIPHYSIS OF THE RADIUS.

Such results from this class of injuries not infrequently force the patient to seek treatment for the resulting impairment of motion. Massage, passive motion, electricity, etc., are unsuccessful, and an operation, either of chiselling through the united epiphysis, or freeing the tendons, is the only remaining resort. The limitation of pro- and supination results in part from the faulty position of the fragments, in part to a coincident fracture or fusion of the ulnar epiphysis, which easily results in excessive callus formation and bony ankylosis of the radio-ulnar joint. L. von Lesser¹ reports an excellent result from resection of the capitulum ulnæ, giving the details of operation. He claims also that to prevent such faulty union (in such fractures of the radius) the forearm should be treated in full supination with ulnar abduction of the hand.

(To be continued.)

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

CHARLES P. STRONG, M.D., SECRETARY.

REGULAR MEETING March 5, 1888, DR. F. H. WILLIAMS in the chair.

DR. A. T. CABOT exhibited a patient upon whom he had operated for ankylosis of the lower jaw with most gratifying results.

DR. F. I. KNIGHT presented a paper upon
THE SELECTION OF A CLIMATE FOR PATIENTS WITH
PULMONARY TUBERCULOSIS.¹

DR. F. C. SHATTUCK expressed his appreciation of Dr. Knight's valuable paper, which is exactly what is wanted.

It is an interesting fact that pneumonia is extremely fatal in the higher regions of Colorado. Unless the patient can be got down lower promptly there is little hope for him. Apparently in the rare atmosphere if any considerable portion of the lung is thrown out of function what remains is not sufficient for the maintenance of life.

The speaker had two patients wintering at the Adirondacks, with benefit; and asked for Dr. Knight's opinion with reference to this region. Saranac certainly has one great advantage quite apart from purely climatic consideration in the presence of a man so skilful and experienced as Dr. Trudeau. The great importance of taking and following good local professional advice was very properly dwelt upon by the reader.

DR. WHITTIER thought that a certain class of cases were greatly benefited by a residence of a winter in Lake Saranac region. One of his patients who spent the winter there and gained fifty-six pounds, returned with his lungs in a normal condition, and

spent the following winter in Boston without return of the trouble.

DR. J. STEDMAN had sent many patients to Colorado, always with marked benefit. For a preliminary trial he advised, in many cases, Sharon, Mass. Florida had not proved an advantageous climate. Aiken, S. C., had proven very beneficial.

DR. VINCENT Y. BOWDITCH spoke of the influence of certain places near Boston upon pulmonary diseases, special mention being made of the town of Wellesley Hills, and of Sharon, both within twenty miles of this city. He did not doubt that there were other towns to be found near Boston whose climate and soil were beneficial in phthisical cases; but his father in former years had sent patients to Wellesley Hills, where they had improved often very markedly. In his own experience he had had patients improve by residence in both of these towns, the soil being of a very porous nature, while both places are sufficiently far from the coast not to feel the effect of our harsh east winds. While giving the preference naturally to a more decided degree of climate, where circumstances permit, Dr. Bowditch felt the importance of bringing forward the fact that there are places nearer home where poorer patients may go with a hope of improvement.

Dr. Bowditch regretted the absence of his father, who had requested him to ask what the experience of the members of the Society had been as to the wisdom of a patient's returning to this climate after improvement, or apparent cure, elsewhere. In his own experience he could say that almost invariably relapses occurred where the trouble had been situated in the apices of the lungs, but that the contrary had frequently been the case if the base of the lung had been affected.

As to the comparative value of places in New Hampshire as resorts for phthisical patients, Dr. Bowditch preferred Bethlehem, on account of its altitude, its dry air, and exposure towards the west and south.

DR. E. O. OTIS said he had hoped that Dr. Knight would have said something more in his paper as to the length of residence for the consumptive in the climate selected for him. When could he come home and stay at home with safety; and what are the conditions which require a permanent residence in the new climate? That many return too soon, and either have to go back again, or die at home, we all know. He had no doubt that Dr. Knight could give us many such examples from his large and long experience. He must confess that he was of the conviction that for many cases a *permanent* residence in the climate found to be the one best suited to the patient and his disease is the only safety.

The improvement of the patient in the climate chosen for him, or in any health resort, seemed to him to depend also largely upon his former manner of life, his tastes and idiosyncrasies, and how well they correspond with the habits suitable for a consumptive in an out-door climate. One person is from youth fond of and used to much out-door life; is active. Such a one takes naturally to his new life, and is likely to gain rapidly and get well. Another is of sedentary habits, indolent, lives much in-doors. For such a one it is hard to change his old habits and ways. He is inclined still to stick to his old ways of in-door life and inactivity, and consequently does not do so well.

¹ See page 343 of the Journal.

² Centbl. Bl. f. Chir., 1887, xiv. s. 15.

As an illustration he had in mind two brothers who went to Colorado for phthisis, the one of active habits, the other of sedentary ways. The former took a cattle ranch and lived on it, and, to the best of his knowledge, is now well; while the latter went to Colorado Springs, was much with his books, and is now in a hopeless condition.

Incidentally this leads to the realization of the importance of training children in such a way that they shall form a love for, and habits of out-door life.

He had been deeply interested in Dr. Knight's excellent paper, and wished he might have more such valuable information upon this most important subject which would enable us with greater accuracy and care to adapt the climate to the patient whom we advise to flee somewhere for his life.

DR. AYER alluded to the risk of sending patients in whom there was tendency to severe hæmorrhages to Denver. The testimony of the residents there was that sudden death from pulmonary hæmorrhage was very common.

Several of the members present alluded to the advantage of a continued residence in Sharon, Wellesley, and adjoining towns near Boston for those patients whose circumstances did not permit the long journey to Colorado.

DR. KNIGHT said, in conclusion, that he had seen patients who had done well in the Adirondacks, though he preferred higher elevations, where there were no contra-indications. He found that patients objected very strongly to wintering there after one trial, on account of dulness of the life and want of accommodations.

In regard to the places very near home, such as Wellesley and Sharon, in this State, he should say that a patient would be much better off in them than on the coast; the same may be said of places in New Hampshire and Vermont, but the great difficulty was in leading an out-door life in any part of New England. The climate was too rough. In regard to the effect of returning East from a high elevation to reside after the pulmonary disease had been arrested, Dr. Knight said that he preferred that a patient should not do it, but should remain where the arrest of disease took place, but that he knew several who had done so, contrary to advice, and yet had remained well.

In regard to the cases of fatal hæmoptysis, which has been reported as occurring in high altitudes, it would probably be found that they were cases of advanced disease in which a large vessel had ruptured into a cavity. Such patients should not have been sent to a high altitude.

DR. WADSWORTH showed a specimen of melanotic disease of the choroid, which had existed for a considerable time, and which he had successfully removed.

DR. PAGE read a circular regarding the establishment of an asylum for the inebriates.

Dr. Page observed: In reply to Dr. Knight's inquiry that his knowledge of inebriates and their needs came from three sources, to wit: that gained from experience while connected with an institution for the insane; also with one for the treatment of nervous people, and from the general practice of medicine—all of which sources enabled him to say that, so far as his experience went, the present methods, as now pursued for the care and reformation of these unfortunate beings, and especially for those who were really free from criminal habits and tendencies—and there were

a definite number of such people amongst us—were inadequate and unwise, if not unjust, if the cure and reformation of the individual was to be hoped for. This, evidently, does not seem to be the end in view under present arrangements, judging from the large number and frequency of commitments to both penal and reformatory institutions: although he would say here that it is probably all that can be done under existing circumstances. What he hoped for was something better, and an improvement on what is now found to be inadequate for present wants.

He was aware that a claim had been advanced elsewhere that such an asylum as was contemplated by the proposed bill, indicated in the circular read, was not especially needed for these persons, the present arrangements being ample and fairly satisfactory. So far as common drunkards of vicious or criminal tendencies were concerned, this was probably true—the accommodations were fairly suitable—but it was not true of a class who, by reason of the only places to which they could go, were of necessity obliged to be committed to either the prison, the house of correction, or the reformatory at Concord, and there mingle with criminals, and subjected to the same rules and regulations, or else be sent to the insane asylum—all of which places were manifestly not the proper places for their care or hoped-for recovery. The influences upon them all were notoriously bad, and especially so upon the young men. If sent to a proper asylum, they would be saved from association with criminals of various kinds, with its attendant perils, and from the stigma which inevitably attaches itself to one who has been in an insane asylum, however unjust this may be. Then, again, every superintendent of an insane asylum knew that within a very short time after admission these cases cleared up from the mental perturbation and benumbing effects of alcoholic stimulation and intoxication, and became sane people, mingling with the insane—a source of trouble to the medical officers by reason of their restlessness, discontent, complainings, etc., and their generally bad influence upon the insane.

If the continued and protracted habit of using alcoholic liquors is in many instances a disease—and this is now the opinion of the alienist, as well as the neurologist, why shouldn't such people as may be suffering from this form of disease have accorded to them the same opportunities and facilities for their care and cure, if this be possible, as the insane, but without the objectionable feature of associating with insane people, or the baneful effects pertaining to penal institutions. He himself believed that they should have, and in this view he was sustained by a large number of good people, professional, as well as laity, who had become deeply interested in this subject, and who also felt that the existing arrangements were not in accordance with the dictates of humanity. He hoped the Society would give the matter thorough consideration. If they did, he felt that they would arrive at similar conclusions. He might adduce instances in illustration of his remarks, having in mind one case which was sent to the reformatory at Concord, and who was subjected to the same rules and regulations as the criminals therein confined—a kind of treatment which was hardly fair to the man or conducive to his highest good, though perhaps a necessity in a certain sense, as he had neither vicious tendencies, nor was a criminal in any sense, though addicted to drinking spirits.

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PATHOGENY OF HYSTERIA.

It was inevitable that a disease presenting such a variety of aspects and phases as hysteria, involving disorder of the functions of the nervous system in all its spheres—intelligence, mobility, sensibility, and visceral neurility—always bizarre in its behavior and rooted in the personality and psychical life of the subject, should be a puzzle to the ancients, who understood so little of the nervous system, and that absurd demoniac and other theories should be framed to account for it. Apart from the attribution of this multifiform malady to demoniacal possession, and especially to that particular phase of the latter known as witchcraft, doubtless the great error of the past ages has been the almost exclusive ascription of this disease by physicians to morbid uterine influence. It is, in fact, but recently that the uterine theory which has, unfortunately, given its name to this disease has begun to be discredited and abandoned (as it certainly has been) by all who have made a study of the disease in the light of modern neurology, and the frequent occurrence of undoubted cases of hysteria in the male has been enough of itself to overthrow completely the old theory.

It is undeniable that the symptomatic tableau of hysteria suggests as the starting point of the morbid phenomena some lesion of the central nervous system. This is, presumably, of a functional or dynamic, rather than of an organic nature, as has been proved by numerous autopsies of persons dying in confirmed hysteria. Pathologists have long been familiar with these *læsiones sine materiâ*; such, in fact, constitute the basis of epilepsy and all the other so-called functional nervous maladies. It is impossible in the present state of science to explain these modifications in the gray matter of the cerebro-spinal axis, which are molecular in their character, and connected with the assimilation and discharge of force. Grant, moreover, that the modifications alluded to are characterized by instability, vulnerability, or "want of tone" in the ultimate nerve elements, which thus become too easily

responsive to peripheral and visceral irritations, with also the necessary factor superadded, that there is a deficiency of the higher cerebral inhibition, and we have a basis on which the pathogeny of hysteria may be founded.

In what part of the nervous system shall we locate the principal seat of this malady? Deranged states of the vaso-motor centres cannot explain the cardinal symptoms of typical hysteria, as Vulpian has well shown,¹ nor can even dynamical lesions of the mesocephalon, which Vulpian supposes to be especially interested in the sensory and motor phenomena. At the time of the writing of Vulpian's treatise, the doctrine of cerebral localizations was yet in the embryo; later developments in that department of science have shed a flood of light on many obscure nervous affections. Many of the mild forms of hysteria have been referred to "spinal irritability," but no condition of "erethism" or "anæmia" of the spinal medulla or mesocephalon can explain those well-developed cases where, with more or less obnubilation of the special senses (sight, hearing, smell, taste,) there is complete hemianæsthesia. Nothing, as Charcot has shown,² can account for such cases but a focal lesion of the cortex cerebri. Moreover, many singular forms of monoplegia, such as have been described in Charcot's latest work,³ can only be understood as manifestations of a dynamical lesion of a limited area of the motor part of the cortex. The psychical disturbances which accompany grave hysteria, the clonus, and other forms of hysterical pain, the disorders of consciousness during hysterical attacks, also clearly indicate abnormal conditions of the cerebral hemispheres. Such considerations seem to justify the classification of hysteria as a cerebral neurosis.

When the physiologist has pronounced the words "dynamic molecular modifications," "nutritive disturbances," he has not yet said the last word respecting the cerebral disease which finds expression in hysterical manifestations, and able and ingenious thinkers have pushed the investigation further, and endeavored, from known laws of organic molecular physics, and known biological and pathological principles to deduce the pathogeny of hysteria. Among recent attempts in this direction is a communication of Dr. Mary Putnam Jacobi to the New York Academy of Medicine.⁴ In this interesting paper the writer presents the following as the series of conditions which succeed each other in the cortex of the hysterical brain: (1) A diffused deficiency in storage power: deficiency shared more or less with other nerve tissues, usually congenital, sometimes acquired; (2) nevertheless, the effecting of abundant storage in the sensory centres, under the permanent stimulus of centripetal impressions; (3) deficient centrifugal activities, mental and motor, or exhaustion of mental and motor areas by exertion performed with inadequate storage material; (4) deficient

¹ Leçons sur le système vaso-moteur, Chap. xviii.

² Leçons sur les maladies du système Nerveux, t. I, Chap. x.

³ Charcot. Leçons, etc., t. III. Leçons, xx, xxi, and xxii.

⁴ Medical Record, Nos. 830, 831, 832.

discharge of sensory centres, which continue to store material under the stimulus of centripetal impressions, but fail to decompose and eliminate this sufficiently when centrifugal movements diminish in activity; (5) hyper-excitability of the sensory centres, which contain an excess of force-material produced during registration of impressions, and not broken up by their transmission; (6) tendency on the part of these surcharged sensory centres to inhibit the activities of the rest of the fore-brain.

PAINLESS PARTURITION.

"Unto the woman he said: I will greatly multiply thy sorrow and thy conception. In sorrow shalt thou bring forth children, and thy desire shall be to thy husband, and he shall rule over thee."

THE aversion caused in the minds of certain women by the sentiments contained in the last clause of the above verse is, perhaps, the cause of their disaffection with the other sentiments expressed in the same connection by the Jewish law-giver. At all events, there are not wanting individuals, mostly without the medical profession, who protest against all suffering in parturition as unnecessary, and claim that the normal physiological woman should, and what is more, does suffer no pain whatever in the act of giving birth to a child; in other words, that a woman is in every way quite "as good as a man."

Painless or nearly painless labors have been recorded, and most physicians have in their own experience met with cases partaking of this nature. That they are, however, contrary to the usual experience of the race is evinced by the very terms in ordinary use to describe the act of parturition; namely, *labor* and *pains*. If normal labor is painless, then we must assume that normal labor is as rare a thing as, according to certain thinkers, is a healthy man or a sane man; that is, practically, non-existent.

More than eighty years ago, Dr. Wm. P. Dewees, of Philadelphia, announced the doctrine of painless parturition. He averred that the circular fibres of the uterus were not attended by pain in their contraction; that such pain as was experienced in labor was from the contraction of the longitudinal fibres. He further claimed that the changes of degeneration produced by civilization and refinement in the uterine structure were confined to the longitudinal pelvis.

"Why a particular set or given direction of fibres should have suffered more than another," he says, "may be impossible to determine; but that they have we believe to be most certain. This change, however, is by no means confined to the uterus, as every straight muscle of the body appears to have participated with it, since it is admitted that the man of the civilized world has lost much of his original strength."

This last illustration, adduced in support of his argument, seems rather an unfortunate one, as the trained athlete is certainly a better specimen of strength and endurance than can be found in any of the primitive races of men. Dewees does not appear to have contemplated anything more than a diminu-

tion of pain, not its abolition, and his recipe therefor, after condemning as useless opium and the hot bath, was copious bleeding to the point of syncope.

Engelmann, in his "Labor among Primitive Peoples," states that among primitive peoples, still natural in habits, and under conditions favorable to their physical organization, labor is short and easy, accompanied by few accidents, and followed by little or no prostration. The Modoc squaw, entirely innocent of the sophistications of civilized life, suffers, this author says, but an hour or so; the Mexican Indians, who are half-civilized, linger three or four hours in labor, while a nearer approach to civilization gives a more trying ordeal, the squaws at the Green Bay Indian Agency having many deaths in labor, attributed chiefly to malpositions, rather than to any bony deformity of the mothers. The evidence of travellers, while admitting a brief labor for most barbarous women, does not warrant the assumption that such labors are painless.

The delivery of the domestic animals is, we believe, usually accomplished without protracted suffering or any considerable degree of mortality, though the cow and the mare sometimes suffer great distress (is it because they have shared with their masters the perils of civilization?). That the act is in the wildest of animals ever a comfortable one, however brief, is exceedingly doubtful.

The foregoing remarks are suggested by the fact that one of the books written for the instruction of married women in matters pertaining to the generative system¹ announces, as we believe, an entirely fallacious doctrine on this point of painless parturition. Books of the character referred to probably have their mission, and if written judiciously, and confined to the hygiene of married life and the pregnant state, are not to be discouraged altogether, as, if not these, more objectionable works on similar subjects are bound to be read by a good many women, either from motives of curiosity, or from a commendable desire to know how to conduct themselves. With the chapters in "Tokology" relating to the conduct of labor we have, of course, no sympathy. In time of labor, if not throughout pregnancy, every reader of such a book can have medical attendance and direction, and the physician, if he is worthy of any confidence, can be trusted to decide whether to give ergot, to leave the cord untied, or even to use the instruments, which, under the prescribed régime, are "almost never needed."

But, together with much of established hygienic value that is recommended in this book, such as exercise, diet, and bathing, there are other things, to say the best of of them, of unproved theory, recommended with the assurance that, following them, a woman may confidently expect a *painless, because normal, labor*. In the matter of diet, for instance, this author strikes off all meats, "owing to their stimulating elements and their effects on the formation of character." She thus

¹ Tokology, a Book for Every Woman, by Alice B. Stockham, M.D. Boston, 1886.

eliminates all "bone-forming foods" according to the theory of a "practical chemist" of London, practised with success on his own wife in 1841, that the bones of the child can thus be made soft and pliable. Sugars and fats are with better reason proscribed, and the patient is left to acid fruits and rice. We have reason to know that women of intelligence, reading this book, have been kept not only in a state of constant introspection throughout the period of their pregnancy, but have suffered from this enormous limitation of their diet in the delusive hope thereby to have a perfectly painless labor.

That civilized and luxury-loving women have departed very far from the conditions of life under which labor is a purely physiological process, is freely admitted. That much can be done for the individual, and still more for her daughters through successive generations, in the way of a return to more normal parturition by a careful management of the hygiene not only of pregnancy, but of the whole sexual period of life, is also true. But that when this has been done, women will then have children without any consciousness of pain, is by no means a demonstrated fact; and the teaching that every woman, by nine months of fasting, even if it be accompanied by an otherwise rational regimen, may expect to secure painless labor in her own person is not only fraught with disappointment, but with more positive injury from the weakening of the powers by the withdrawal of proper food.

A LAW DISPENSARY.

A "LAW DISPENSARY" has been established in New York "under the auspices," says a contemporary, "of reputable lawyers in connection with the Rev. Mr. Goss's People's Mission," for the benefit of poor people who require legal advice and cannot afford to pay for it. The sorts of law that the "poor but honest" classes of the community need are obviously pretty limited. It is sad that the very nature of the case so completely shuts out our brethren of the legal profession from the luxury of doing good *in kind* to the worthy poor — that luxury which is so superabundant with the medical profession. It is to be hoped, however, that in the dearth of opportunity to give away advice on "real property," "contracts," "wills," and similar subjects, the philanthropic law-dispensers will not devote themselves to giving instruction as to actions of tort to such of their patrons as are also constant attendants at the multitudinous medical dispensaries. Too much of such advice has been given by lawyers in the past, and it is better dispensed with than dispensed.

MEDICAL NOTES.

— The Medico-Chirurgical College, of Philadelphia, holds its tenth annual commencement Friday, April 6th. The previous evening the Alumni Association will entertain at dinner Surgeon-General J. B. Hamilton, of the Marine Hospital Service.

— Prof. Paget carries in his obstetric bag an ergot mill, resembling a small coffee mill, compact in form, and designed to grind up ergot freshly for use. He claims that only the freshly pulverized ergot is reliable, and he thus secures it when wanted without depending on tincture and other liquid preparations, fetched from the druggists.

— At the annual meeting of the Medical Society of London, held March 3d, it was announced that the Fothergillian prize of a gold medal of the value of twenty guineas, had been awarded to Dr. Hobart A. Hare, of Philadelphia, for his essay on "The Pathology, Clinical History, and Diagnosis of Affections of the Mediastinum other than those of the Heart and Aorta."

NEW ENGLAND.

— A fatal accident occurred last week at the works of the Thomson-Houston Electric Company, of Lynn, Mass. A young man, twenty-two years of age, received a shock from a circuit on which there were fifty-two arc lamps. The electric current which passed through his body being equal to about forty horse-power, his death was instantaneous. Artificial respiration was kept up for an hour by some of the officers of the company, but without avail. The unfortunate man was taking readings from two instruments, which should have been placed so far apart that he could touch but one at a time. Instead of this, by his own carelessness, it is said, the instruments were placed close together. His hands were both badly burned.

NEW YORK.

— The College of Pharmacy of the City of New York held its fifty-eighth annual commencement at Steinway Hall on the evening of March 28th. There were ninety-five graduates, and the address to the class was delivered by Gen. W. T. Sherman.

— At the last meeting of the Nineteenth Century Club the "mind-cure" was the subject of discussion. A Miss Bell advocated the claims of the mind-cure system, and Dr. Wm. A. Hammond replied. In the course of his remarks he said that he should like to see the speaker arrested, without the use of drugs, the progress of diseases like small-pox or yellow fever, or without mechanical apparatus successfully repair broken limbs. He also offered to give \$1,000 to any mind-curer who would produce four patients who, after receiving injections of certain drugs did not show the natural effects of these agents on the system. The discussion was concluded by W. A. Purrington, Esq., Counsel for the Medical Societies of the State and County of New York, who spoke in favor of restrictive medical legislation.

— The death of three children from diphtheria during the past week in a single family on Columbia Heights, the finest place of residence in Brooklyn, together with the probably fatal illness from the same disease of the professional nurse who was in attendance on the children, has alarmed the residents of that city and stirred up the local health authorities.

It is several years since contagious diseases have been so prevalent in Brooklyn as during the last three months. After the early winter outbreak of small-pox had been in a measure controlled, the number of cases of diphtheria rapidly increased, and in January 299 cases, and 144 deaths from it, are reported. During February there were 261 new cases, and 86 deaths; while the record for March is said to be nearly equal to that of January. Scarlatina has also been very prevalent, and since the first of the year nearly one thousand cases and over 175 deaths have been reported.

—The unlucky steamship *Britannia*, running to Mediterranean ports, which brought cholera into New York harbor nine months ago, recently arrived with small-pox on board, and has been prevented from coming up to the city by the health authorities until the effects of vaccination could be observed on the passengers.

Miscellany.

ELECTRICAL TREATMENT OF SEWAGE.

A WRITER in *Science* describes the process recently patented by Mr. William Webster, F.C.S., of purifying sewage by means of the electrical current. The pollution of rivers by the sewage of large cities is a constant source of danger to health; and, according to the *London Standard*, £1,000,000 is to be spent in attempting, by the employment of chemicals, to purify the London sewage. Mr. Webster's plan consists in sending a current of electricity from metallic electrodes through the sewage. The result, in experiments made on a very small scale, is to set the solid particles held in suspension in motion, "a kind of procession taking place from the top downwards, and from the bottom upwards. The sum-total of the movements consists in landing the suspended particles at the top of the liquid." "So prompt is the effect of the electric current that in twenty minutes a volume of opaque sewage becomes perfectly transparent, except at the top, where the organic matter collects in a semi-solid form." "From results already obtained it is calculated that the cost of the electrical treatment of the London sewage would be about £25,000 per annum. The annual outlay for chemicals is expected to be £18,000 for lime and iron, and £12,000 for permanganic acid, making a total of £30,000, a balance of £5,000 in favor of the electrical method. It would seem that Mr. Webster's experiments have, as yet been on a small scale. If the practical results bear out what has been done in the laboratory, the process will be of the greatest importance.

A CLINICAL ANALYSIS OF SIXTY-FOUR CASES OF POISONING BY LEAD CHROMATE USED AS A CAKE-DYE.

DR. D. D. STUART, of the Jefferson Medical College, who has previously published notes of cases of lead poisoning occurring through this channel, has recently presented to the Philadelphia County Medical

Society further data used on an analysis of sixty-four such cases. An abstract of the paper is contained in the *Polyclinic* for March, and we make the following selections:

All of the patients had consumed, for a considerable period, large quantities of the cakes containing the lead chromate, and all showed unmistakable signs of plumbism, which diligent inquiry was unable to trace to other sources.

Of these sixty-four cases 32.8 % (21) are males and 67.18 % (43) are females.

Five women exhibited symptoms of plumbism during gestation, but none aborted, but all at full term gave birth to living children; one had, however, two convulsions at the termination of the seventh month of pregnancy, believed to be of saturnine origin, though a small amount of albumen was present in the urine. Four of these five infants had convulsions two months after birth, in which two died.

78.21 % (50) of the cases exhibited the saturnine cachexia, displaying an anæmic appearance with an earthy-yellow hue to the skin; a sallow tint without yellowness was present in the remaining 21.87 % (14). In 10.93 % (7) the skin became intensely yellow at one time or another, notably when colic was present. The dull, anæmic, somewhat listless look, associated with a peculiar fulness of the cheeks, of which Oliver speaks, and which is considered by him quite suggestive of plumbism, was noticed in but three cases. Emaciation was present in nearly all who had been affected for several months, and in some was marked.

In a large number neurasthenic symptoms antedated for a considerable period the outbreak of colic, arthralgia, or encephalopathy.

Among the neurasthenic symptoms to be especially noted are: the mental depression, which was a prominent symptom in 54.68 % (35), in several it approached melancholia; marked impairment of memory present in 17.18 % (11); great prostration and weakness, the slightest exertion causing fatigue, present in 54.68 % (35)—the fatigue was especially marked on rising in the morning, and may have been caused in part by obstinate insomnia, with nocturnal restlessness, of which the same number complained; vague neuralgic pains as a portion of the neurasthenia—apart from severe arthralgia—were present in 9.36 % (6).

Colicky pains of all sorts, severe and light, attended by more or less constipation, were present in 76.56 % (49), and 60.93 % (38) exhibited the phenomena of pronounced lead colic. These pains were felt most often about the umbilicus, and following that in frequency about the epigastrium; they were in 53 % (26) of the (49) cases relieved by firm pressure when applied gently, and were accompanied by obstinate constipation in 55.10 % (27); and moderate in 34.68 % (17).

Very obstinate constipation was present in all save one woman, whose bowels could be moved without trouble by mild purgatives, and whose passages were described to exceedingly yellow. All had very severe pains in the knees and ankles, unattended by heat, redness, or swelling in any save one man, who, after a few days, had an attack of acute articular rheumatism as a complication. Violent continuous cephalalgia was present in one woman alone, and was the precursor of convulsions, which appeared on the fifth day.

Paralysis of the extensor muscles of the forearm typical wrist-drop, occurred in only two cases; it was bilateral and seemingly complete.

Headache was present in 73.43 % (47); in 67.18 % (43) it was more or less constant for a considerable period, with exacerbations and remissions, and of sufficient severity to indicate involvement of the deep cranial structures.

Encephalopathy was present in 23.43 % (15); in 17.18 % (11) it was manifested as eclampsia; in two (3.12 %) as delirium; in one as a modification of the delirious form, melancholia with accompanying hallucinations and delusions; and in one as coma. The eclamptic seizures were of epileptiform type, and in 10 of the 11 cases were preceded, for days or weeks, by other manifestations of saturnism, such as cachexia, colic, arthralgia, or severe continuous headache; and in at least five of these they occurred primarily, during or immediately subsequent to an attack of colic and arthralgia. In at least four of the ten excruciating cephalalgia preceded for several days their outbreak.

The gums of 80 % (57) of the 64 showed the "blue line," and it probably existed also in six of the remaining seven cases, but was not looked for.

It is worthy of note that in the viscera of all of the five fatal cases examined by Drs. Reese and Leffmann lead was found, and in four in notable quantities. It was encountered in large quantities in the liver.

Correspondence.

ANOTHER VIEW OF DENTISTS' PATENTS.

Boston, March 30, 1888.

MR. EDITOR,—There is another view to be had, at least for dentists, of the patent question—that of self-preservation. When a dentist has occasion for some new device he invents it. Then, if struck by its value, or proud of his ingenuity, he describes or shows it to his fellows at one of the numerous society meetings, and gets it into the dental magazines, either through a report of the meeting, or perhaps by a communication from himself. One would think this to be a sufficient publication, but it is not. A patent sharp sees the description, rushes off to the patent office and swears out a patent to himself. A company is then formed to handle it, and the whole body of dentists are at once laid under contribution. Individuals cannot fight a moneyed corporation, so, after some recalcitration, they are obliged to submit.

Something like this is the history of the now defunct Cummings' patent, through which the dentists were bled so many thousand dollars; so, also, of the Sheffield Crown patents, and of some others that are now being put upon the market. The result is that the honest man must submit to be fleeced if he uses the invention, or, if not, to throw it into the hands of conscienceless quacks, who see only the money in it.

Therefore, if you have a valuable device which you wish to give to the profession for the good of humanity, the only safety seems to lie in patenting it, else some "combine" will be sure to seize it, and our laws give us but an empty show of a remedy in the courts.

Yours truly, THOS. H. CHANDLER.

REPORTED MORTALITY FOR THE WEEK ENDING MARCH 24, 1888.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diarrheal Diseases.	Diph. & Croup.	Scarlet Fever.
New York	1,481,920	861	336	18.24	21.84	.24	9.12	3.24
Philadelphia	993,801	474	142	9.24	15.54	3.78	3.15	.84
Brooklyn	745,108	—	—	—	—	—	—	—
Chicago	725,000	—	—	—	—	—	—	—
St. Louis	420,000	—	—	—	—	—	—	—
Baltimore	417,000	208	79	12.48	12.00	—	1.44	.48
Boston	400,000	182	60	9.90	19.25	1.10	5.50	1.10
New Orleans	242,750	113	29	8.85	10.68	—	3.46	—
Buffalo	225,000	—	—	—	—	—	—	—
Washington	210,000	135	51	15.54	12.58	.74	.74	.74
Pittsburgh	210,000	89	41	15.47	32.13	2.38	5.95	1.19
Montreal	186,257	—	—	—	—	—	—	—
Milwaukee	170,000	74	37	21.50	6.75	—	4.05	1.35
Providence	121,000	—	—	—	—	9.40	—	—
Richmond	100,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,000	—	—	—	—	—	—	—
Charleston	60,145	—	—	—	—	—	—	—
Portland	40,000	18	2	—	11.11	—	—	—
Worcester	68,893	32	14	9.39	34.43	—	3.13	—
Lowell	64,051	—	—	—	—	—	—	—
Cambridge	59,660	20	10	15.00	20.00	—	5.00	10.00
Fall River	56,863	20	11	25.00	15.00	—	—	10.00
Lynn	45,861	27	5	36.50	14.60	14.60	21.90	—
Lawrence	38,825	19	5	10.52	—	—	5.26	—
Springfield	37,577	17	3	11.76	29.40	5.88	5.88	—
New Bedford	33,393	17	9	17.64	35.28	—	11.76	—
Somerville	29,592	15	4	20.00	26.66	—	—	6.66
Salem	28,084	14	2	14.28	7.14	—	7.14	—
Holyoke	27,894	6	3	—	33.33	—	—	—
Chelsea	25,709	10	2	20.00	20.00	—	10.00	10.00
Taunton	23,674	11	3	—	54.54	—	—	—
Haverhill	21,745	6	0	33.33	16.66	16.66	—	—
Gloucester	21,713	6	1	50.00	—	33.33	—	16.66
Brockton	20,783	—	—	—	—	—	—	—
Newton	19,759	5	2	—	—	—	—	—
Malden	16,407	8	3	25.00	—	—	—	—
Fitchburg	15,575	5	2	—	—	33.33	—	—
Waltham	14,669	3	1	—	—	14.28	—	—
Newburyport	13,716	7	1	—	—	—	—	—
Norhampton	12,896	3	—	66.66	—	—	—	33.33

Deaths reported 2,443: under five years of age 869; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 343, acute lung diseases 438, consumption 344, diphtheria and croup 128, scarlet fever 45, typhoid fever 38, measles 32, diarrheal diseases 31, whooping-cough 23, erysipelas 15, malarial fever 11, cerebro-spinal meningitis 10, puerperal fever seven, small-pox New York three. From measles, District of Columbia 18, Baltimore eight, New York and Pittsburgh three each, Boston and Milwaukee one each. From diarrheal diseases New York 11, Philadelphia five, Baltimore and New Orleans four each, Boston two, Pittsburgh, Milwaukee, Nashville, Fall River and Northampton one each. From whooping-cough New York 13, Baltimore six, Boston, New Orleans, Nashville and Haverhill one each. From erysipelas, New York nine, District of Columbia, Milwaukee, Worcester, Fall River, Lawrence and Salem one each. From malarial fever New York and Baltimore four each, Philadelphia, New Orleans and Charleston one each. From cerebro-spinal meningitis, Milwaukee and Somerville two each, New York, Philadelphia, District of Columbia, Pittsburgh, Worcester and Fall River one each. From puerperal fever, New York three, District of Columbia, Nashville, New Bedford and Malden one each.

In 22 cities and greater towns of Massachusetts with an estimated population of 1,083,450, the total death-rate for the week was 21.01 against 22.58 and 24.37 for the previous two weeks.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending March 10th, the death-rate was 23.3. Deaths reported 4,163; infants under one year of age 946; whooping-cough 165, scarlet fever 59, measles 49, diarrhoea 43, fevers 41, small-pox (Sheffield 28, Manchester and Blackburn two each, Oldham three, Nottingham one) 29.

The death-rates ranged from 15.0 in Halifax to 31.3 in Manchester; Birmingham 22.1; Bradford 27.7; Hull 20.4; Leeds 22.6; Leicester 26.3; Liverpool 27.1; London 20.3; Newcastle-on-Tyne 18.1; Nottingham 20.3; Sheffield 25.5; Sunderland 17.4.

In Edinburgh 18.9; Glasgow 29.5; Dublin 33.1.

The meteorological record for the week ending March 24, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Saturday, Mar. 24, 1888.																			
Sunday, ... 18	29.99	24.0	31.0	14.0	65.0	40.0	56.0	54.0	W.	W.	W.	15	12	11	C.	C.	C.		
Monday, ... 19	30.30	29.0	33.0	18.0	66.0	41.0	52.0	53.0	W.	E.	E.	10	10	10	C.	F.	F.	H. M.	
Tuesday, ... 20	29.93	47.0	53.0	31.0	79.0	69.0	93.0	80.0	S.W.	S.	S.	15	18	18	O.	O.	T.	3.30	.03
Wednes., ... 21	29.51	52.0	58.0	46.0	100.0	88.0	100.0	96.0	S.	S.E.	S.E.	6	36	12	G.	O.	R.	13.00	.53
Thursday, ... 22	29.75	37.0	53.0	34.0	64.0	47.0	63.0	58.0	W.	S.W.	W.	18	10	11	C.	O.	O.	2.00	.06
Friday, ... 23	29.91	20.0	35.0	20.0	65.0	55.0	53.0	58.0	W.	S.W.	S.W.	21	24	24	O.	F.	C.		
Saturday, 24	30.21	19.0	26.0	12.0	57.0	42.0	55.0	51.0	S.W.	S.W.	S.W.	16	18	19	C.	C.	C.		
Mean, the Week.	29.95		37.0	25.0				64.0											

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 24, 1888, TO MARCH 30, 1888.

SPENCER, WM. C., major and surgeon. Died March 22, 1888, at Fort Trumbull, Conn.

KIMBALL, J. P., major and surgeon. Granted leave of absence for two months, to take effect about April 10, 1888. S. O. 68, A. G. O., March 23, 1888.

CROSBY, W. D., first lieutenant and assistant surgeon. Granted leave of absence for two weeks. S. O. 29, Department of the Arizona, March 16, 1888.

AZPELL, THOMAS F., captain and assistant surgeon, (retired). Died March 12, 1887, at Fort Lee, N. J.

SOCIETY NOTICES.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.—THE SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE will meet at 19 Boylston Place, on Wednesday, April 11th, at 7.45 o'clock. Papers: Dr. R. W. Lovett, "Sixty Cases of Cerebral Paralysis in Children." Drs. Webber, J. J. Putnam, Rotch, Bradford, Bullard, Hooper, Burrell and E. Reynolds will take part in the discussion. Dr. P. C. Knapp, "Physical Examination of the Stomach in Gastric Disease." Dr. Dr. H. Osgood, "Inveterate Headache."

A. L. MASON, M.D., Chairman.

ALBERT N. BLODGETT, M.D., Secretary.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A Regular Meeting of the Society will be held Monday, April 9th, at the Medical Library, 19 Boylston Place. Election of Members. Reader: Dr. E. H. Bradford. Subject: "The Treatment of Lateral Curvature." Dr. John Hounsar will report a "Case of Nephrectomy," and will show the kidney removed from the right loin.

F. B. HARRINGTON, M.D., Secretary.

GYNÆCOLOGICAL SOCIETY OF BOSTON.—The next meeting of the Society will be held at the Medical Library Rooms, No. 19 Boylston Place, on Thursday, April 12th, at 4 o'clock, p.m. Papers: "Specialists and Specialists," by Dr. W. Symington Brown. "Acid Solution of Corrosive Sublimite for Surgical Uses," by Dr. Geo. W. Nash.

H. J. HARRIMAN, M.D., Secretary.

APPOINTMENT.

Nicholas Senn, M.D., of Milwaukee, has been appointed Professor of the Principles of Surgery and Surgical Pathology in the Rush Medical College of Chicago.

BOOKS AND PAMPHLETS RECEIVED.

Atlas of Venereal and Skin Diseases, with Original Text. By Prince A. Morrow, A.M., M.D. Fasciculus III. New York: William Wood & Co. 1888.

Essentials of Chemistry and Toxicology: For the Use of Students in Medicine. By R. A. Withaus, A.M., M.D. Second edition. New York: William Wood & Co. 1888.

A Biological Examination of the Water Supply of Newton, Mass. By W. T. Sedgwick, Ph.D., and S. R. Bartlett, S.B.

New York Cancer Hospital. Second and Third Annual Report. 1886-1887.

Sixteenth Annual Report of the Board of Health of the City of Boston, for the Year 1887.

The Forty-Ninth Annual Report of the Superintendent of the Boston Lunatic Hospital, to the Board of Directors for Public Institutions, for the Year 1887.

Chrouie (Simple) Glaucoma. D. Coggin, M.D., Salem, Mass. Reprint. 1888.

Natural History of Tuberculosis in Accordance with the Germ Theory. By Noah Cressy, M.D., V.S., Ph.D. 1888.

Essays on Hysteria, Brain Tumor, and Some other Cases of Nervous Disease. By Mary Putnam Jacobi, M.D. New York and London: G. P. Putnam's Sons. 1888.

The Legal Aspect of Suicide. Annual Address before the Medical Jurisprudence Society of Philadelphia, January 10, 1888. By Hon. William N. Ashman, President of the Society.

The Value of Veterinary Science to the State. A Lecture delivered before the Massachusetts State Board of Agriculture at Springfield, Mass., December 6, 1887. By Austin Peters, M.R.C.V.S. 1888.

The Surgical Diseases of the Genito-Urinary Organs, Including Syphilis. By E. L. Keyes, A.M., M.D. A revision of Van Buren & Keyes Text-Book upon the same subjects. New York: D. Appleton & Co. 1888.

Lecture.

CARTWRIGHT LECTURES.¹
THE GENERAL PATHOLOGY OF FEVER.BY WILLIAM H. WELCH, M.D.,
Professor of Pathology, Johns Hopkins University, Baltimore.

LECTURE II.

THE EFFECTS OF INCREASED TEMPERATURE OF THE BODY.

IN the last lecture I endeavored to bring before you the main facts which we possess bearing upon the explanation of febrile rise of temperature. After a review of our knowledge concerning heat-production, heat-dissipation and heat-regulation in fever, we were led to the conclusion that neither the changes hitherto observed in the production of heat, nor those in the loss of heat, suffice to explain febrile temperatures. Such an explanation seemed possible only upon the assumption that the fever-producing agents act either directly or indirectly upon the nervous mechanism controlling the relations to each other of the production and the discharge of heat. We then turned our attention to the relations of the nervous system to these processes, and found that the investigations of recent years have enabled us to obtain a much clearer conception than was formerly possible of the manner in which the complicated heat-relations in fever may be brought about by an action upon the nervous system. We found even substantial experimental basis in support of clinical facts which show that circumscribed lesions of certain parts of the central nervous system may induce directly febrile disturbances of animal heat.

To carry the subject further, to consider whether pyrogenic agents act primarily or only secondarily upon the processes concerned in heat-production, or upon those concerned in heat-dissipation, or upon the apparatus regulating the relations to each other of these two sets of processes, to discuss whether these agents act directly upon the central nervous system, and, if so, upon what part, or upon the peripheral nerves or their terminations, or upon the tissues, to follow out more fully than we have done hitherto the themes here suggested would lead us, with our present knowledge, into a sea of speculation. We should find only here and there a faint light of fact to guide us. Even upon foundations as insecure as this speculation have their legitimate uses. A good hypothesis is a most valuable incentive to scientific work. It is not my purpose, however, to carry you with me further in this direction, although I realize that a single lecture has been far from sufficient for a satisfactory exposition of the subject.

After dismissing the considerations bearing upon the so-called theory of fever, there still remain a host of questions properly belonging to our subject. It is evidently impossible, even if it were desirable, that these lectures should include a discussion of all of these questions. I have, therefore, selected certain ones, partly because they seem to me of immediate interest, and partly because I have given some attention to their study.

In the present lecture I wish to present to you some observations concerning the relation of elevation of

temperature to other disorders of fever, and as to the question how far increased temperature is a source of danger in fevers.

Here I may repeat that the word fever is used as a convenient name for a group of symptoms commonly associated together in febrile diseases. The association of these symptoms, however, is so loose that we regard only the dominant one, the increased temperature, as the essential criterion of the existence of fever. It saves circumlocution to adopt this somewhat vague and common signification of the term fever, although I think it would be an improvement to confine the term to abnormal elevation of temperature. The literature of fever is full of misapprehensions resulting from the various meanings attached to the word by different authors.

All of the bodily functions may be disordered in fevers. The various symptoms, or classes of symptoms, which are so commonly associated as to be regarded by many as belonging to the febrile processes are, in addition to heightened temperature, increased frequency of the pulse and other circulatory disturbances, increased rapidity of respiration, muscular weakness, lessened secretions, disordered nutrition and digestion, and nervous symptoms.

What is the connection, if any, between these symptoms and the elevation of temperature? What degrees of elevated temperature are dangerous to life, and in what does the danger consist? This subject can at least claim the interest that attaches to the questions of the day. The various opinions which have been held by clinicians on these points are too well known to you to require an historical review. I need only remind you that until within a few years the views advocated with especial force for nearly thirty years by Liebermeister have prevailed, although not without considerable opposition. According to these views the chief source of danger in uncomplicated essential fevers is the elevation of temperature, and the main indication for treatment is the reduction of temperature. Above all it was urged with apparently convincing arguments that the weakness of the heart, which is undoubtedly one of the gravest dangers of fevers, is the direct effect of prolonged high temperature, and is manifested anatomically by parenchymatous or fatty degeneration of the cardiac muscle. Liebermeister sharply defined his position when he said: "A man whose temperature measures continuously 104° (40° C.) or more, surely dies in consequence of the elevation of temperature, one in a few days, another after a somewhat longer time, according to the resistance of the individual." "If his temperature reaches 108.5° (42.5° C.) or more, then he is irrecoverably lost."²

At the present moment there is a decided reaction against these views, a reaction which, in some quarters, goes to the extent not only of denying that there is danger in febrile temperatures which do not exceed a very high point, but of asserting that the elevation of temperature is a beneficent provision, a most important vis medicatrix nature, which should not be checked by the interference of the physician. This reaction of opinion is plainly due in great part to the disappointment which has followed the high hopes raised by the discovery of a number of drugs which are admirable antithermic agents, and, nevertheless, do not exert over febrile diseases that controlling influence which had been anticipated.

¹ Delivered at the College of Physicians and Surgeons, New York, April 5, 1888.

² Liebermeister. Volkmann's Sammlung, No. 31, p. 540.

These questions, you may say, are clinical ones and not much edification is to be expected from their discussion by a pathologist. So far as the propriety of the use of antipyretic agents or of any other mode of treatment in fever is concerned, it is true that the decision must be reached at the bedside and cannot and never should be controlled by the results of experimental pathology. But an appeal has properly been made to experimental pathology to shed light upon such questions as the effects of heat upon the functions of the whole body and of its various organs and upon the causes of parenchymatous and fatty degenerations. The arguments advanced in support of the view that all of the characteristic symptoms of fever are directly dependent upon the increase of temperature and that high temperature is the chief source of danger are derived no less from experimental pathology than from clinical observations.

Three methods have been employed to determine the effects of increased temperature in fever: one is to study the effects of heat upon animals; the second is to examine in different fevers and in different cases of the same fever the relation of the temperature to the other symptoms and to the general condition of the patient; and the third is to note the influence of reduction of temperature upon these symptoms.

Each method has its limitations. The condition produced by exposure to external heat, even if it be called thermic fever, is something quite different from ordinary fevers, and we cannot transfer the results obtained by this method directly to the explanation of febrile phenomena. On the other hand, in the clinical study of fevers it is very difficult and often an arbitrary matter to separate the effects of increased temperature from those of other factors nearly always present. Hence we find no agreement of opinion among physicians as to what symptoms or lesions in fever are referable to the heightened temperature and what are due to infectious or other conditions often present. Even the frequent or constant association of certain symptoms with elevated temperatures and their subsidence or disappearance by reduction of temperature do not justify us in inferring that the high temperature is the cause of the symptoms, for both may be coordinate effects of the same cause, and the so-called antipyretic treatment may influence other conditions as well as the temperature. As has been frequently said of late, the high temperature may be rather an index of the severity of the disease than a source of danger in itself.³

The most direct way of determining the influence of heat upon the body is to raise the internal temperature by external application of heat. Here we are not disturbed by the presence of other factors, such as infection, which render doubtful so many of the conclusions derived from clinical observations as to the effects of high temperature. For the solution of many problems it is evidently irrelevant whether the source of heat be within or without the body. These experiments, if properly conducted, are calculated to shed

much light upon many questions relating to the effects of febrile temperatures.

According to the testimony of all experimenters, a mammalian animal artificially heated dies when its internal temperature reached 111.2° (44° C.) — 113° (45° C.) Death is preceded by convulsions and immediately or soon after death rigor mortis appears. At the moment of death the irritability of the heart and muscles ceases. Death seems to be due to heart paralysis, and the cause of this is usually set down as heat rigor, but this is not probable, as death generally occurs at a temperature several degrees below that at which rigor of the heart-muscles appears.

It is generally argued that temperature several degrees below those which are fatal must exert toxic effects, and this conclusion seemed to be substantiated by the majority of experimenters who found that animals whose temperatures were artificially raised to 105° (40.6° C.) — 107° (41.7° C.) or even to a lower point manifested signs of illness. These latter results, however, are opposed by those obtained by Rosenthal and especially by Naunyn,⁴ who points out the conditions in most previous experiments were not favorable, as the animals were generally placed in small, dark, poorly ventilated metallic boxes. Naunyn succeeded in keeping a rabbit alive for thirteen days with an average temperature of 106.7° (41.5° C.).

Following Naunyn's example, I have had constructed a wooden box three feet long, two feet high, and two feet broad, which fits closely within a doubled-walled galvanized iron box. The wooden box is provided with a perforated, movable bottom which allows the urine to escape. The space between the two walls of the iron box measures three inches across and is filled with water which, therefore, surrounds the inner box on all sides, except at the top, which is left open. The dimensions of this apparatus are somewhat larger than those of Naunyn's heating box. A folded woolen blanket was drawn over each end of the box so as to leave uncovered at least one-third and generally more of the top. A rose burner, placed underneath, served to heat the box. At first a thermo-regulator was employed, but this was found unnecessary as the temperature of the room varied but little and there was no difficulty in keeping a sufficiently constant temperature in the box. The experiments were made upon rabbits and only a single one was placed in the box at a time. Corrected thermometers were used. The temperature of the box was taken a short distance above the bottom, and that of the rabbit at a depth of three to four inches in the rectum. This occasion does not seem an appropriate one to describe these experiments in detail with their protocols. I shall take another opportunity for that, and at present give only a general account of those results which relate to the subject before us.

In the box described I have succeeded in keeping for three weeks two large black rabbits, the one with an average rectal temperature of 107.3° (41.8° C.), the other with an average temperature of 106.6° (41.4° C.). The rectal temperature fluctuated usually between 105.5° (40.8° C.) and 108° (42.2° C.), scarcely ever sinking below 105° (40.5° C.), but occasionally rising as high as 109.5° (43.1° C.). The

³In hyperpyrexia and in many cases of insulation there can be no doubt that the high temperature as such are the main elements of danger. But both of these conditions have important points of distinction from ordinary febrile processes. In hyperpyrexia there is probably almost complete paralysis of heat regulation, and we shall find that an analogous condition with similar dangers sometimes develops in animals artificially heated. The cases of insulation in which the high temperature is so dangerous are analogous to the condition which may be produced in animals by brusque elevation of the bodily temperature through exposure to heat and which differs from that resulting from more gradual increase of temperature.

⁴Rosenthal. Zur Kenntniss d. Wärmeregulierung u. s. w. Erlangen, 1872.
Naunyn. Archiv. f. exp. Path. u. Pharm., Bd. 18.

temperature of the box varied between 96° (35.5° C.) and 106° (41.1° C.). The rabbits lay most of the time stretched out, breathing very rapidly. They took their food greedily and did not appear ill. At the end of the experiment the first animal was removed from the box and, appearing perfectly well for ten days afterward, it was used for another experiment; the second animal was killed at the end of the experiment and presented marked fatty degeneration of the heart, liver and kidneys. Both animals lost weight while in the box.

In these and similar experiments, the rabbits were given only moist, green fodder, and were allowed to drink plenty of water, which they took eagerly. It is important for the success of the experiment that the temperature should be gradually and not suddenly raised.

Different animals offer varying degrees of resistance to the effects of high external temperatures. It has seemed to me that black and gray rabbits surpass in this respect white rabbits. The same temperature of the box does not produce in all cases the same rectal temperature in different animals, or in the same animal at different times. No factor is of more importance in determining the effects of external heat than the animal's power of temperature regulation. Failure of this power is manifested by a sudden rise of internal temperature which may quickly attain a point incompatible with life. This event may take place without any alteration in the box temperature. The degree of internal temperature at which this paralysis of heat-regulation occurs, varies in different animals. One may be able to hold his temperature from further rise at as high a point as 109.5° (43.1° C.), in another after the temperature has reached 107.6° (41.5° C.), there may occur, without any change in the box temperature, a sudden and often fatal elevation of temperature. In general, temperatures between 108° (42.2° C.), and 109° (42.8° C.), may be regarded as critical temperatures for these animals. One is forcibly reminded by these sudden and dangerous elevation of temperature of the occurrence of hyperpyrexia in certain fevers of human beings, and there is reason to believe that this, too, is caused by paralysis of heat-regulation.

It seemed to me of some practical interest to determine what effect upon the rabbit's power of resisting high temperature is exerted by exhausting influences, particularly by anæmia. For this purpose, rabbits which had been moderately bled and others which had been much used for some other experiments, were placed in the hot box. It was found that these animals are, although not without occasional exceptions, unmistakably less resistant to the effects of high temperatures than are robust animals. They succumb sooner, and at lower box temperatures.

We may now consider what inferences may be drawn from these and similar experiments as to the effects of high temperatures. It seems clear that a considerable part of the current arguments based upon experiments concerning the injurious effects of high temperatures, must be revised in the light of Naunyn's experiments and of those which I have briefly related. Because an animal may be killed by raising its temperature to 111° (13.9° C.) or 113° (45° C.), it does not follow that an increase of temperature of four or five degrees above the normal involves danger to life or even any serious disturbance of the functions of

the body. Although experiments in hot air chambers show that in man brusque elevations of the temperature by only a few degrees give rise to serious symptoms. Krishaber⁶ found that by habituation his temperature could be raised to 106.5° (41.4° C.) to 107.2° (41.8° C.), without much discomfort. As small animals generally succumb more readily than large ones to artificial heating, it is not likely that the power of resistance in human beings is less than that found to exist in rabbits, and there is reason to believe that it is greater.

We cannot transfer directly to human beings the highest temperatures at which we found rabbits can exist without serious discomfort, save increased respiration. A rabbit's temperature is normally considerably higher than that of man, and apparently slight causes suffice to produce marked fluctuations. The normal rectal temperature of the rabbits used in my experiments was generally between 102° (38.9° C.), and 103° (39.4° C.). The highest average temperature at which a rabbit was kept for three weeks in the hot box, exceeded, therefore, by four to five degrees F., the average normal temperature. Such an increase would not correspond to a high febrile temperature in man. We can, however, with equal and probably greater propriety, compare this temperature with that at which death surely occurs in a condition bordering on heat rigor. This temperature (111° to 113°), is probably about the same for man as for rabbits and other mammals. From this point of view the inference may be drawn, although of course with much reserve, that human beings may tolerate temperatures of 107° (41.7° C.), or even higher for a considerable time. This inference is supported by clinical observations, especially in cases of relapsing fever.

As already pointed out, the condition produced by artificial heating is not directly comparable with that in fever. In the former, the loss of heat from the body is reduced to a minimum: the superficial temperature is three or more degrees higher than the internal, so that the average temperature of the whole body is higher than in fever with the same internal temperature. We cannot say, therefore, but that man may tolerate considerably higher internal temperatures than when the elevation is brought about under conditions in which the discharge of heat is not checked, than when the temperature is forced up by stopping heat-dissipation. This would be proven if confidence could be placed in the enormous elevation of temperature reported by Teale and others. In these cases, however, even if authenticated, it is probable that heat is abnormally distributed in the body, and we cannot infer that the internal temperature is uniformly raised to such paradoxical heights.

It is of the utmost importance to bear in mind that, as my experiments have shown, not only do animals differ in their power of tolerating high temperatures of the body, but this resistance may be weakened by various depressing causes. Nothing would be more irrational than to conclude that because one individual in a certain condition can tolerate very high temperatures, another in a different condition possesses the same power. In fevers we have various factors, particularly infection, which we may well believe can lower the tolerance of high temperatures. That in some fevers, particularly relapsing fever, this does not appear, or only partially, does not disprove that in

⁶ Krishaber, *Gaz. Méd. de Paris*. 1877.

another fever, such as typhoid or pneumonia, the system may be placed by other factors of the disease in such a condition that even moderately high temperatures are injurious. It does not seem to me proper in these cases to lay, as some seem inclined to do, the sole stress upon the element of infection. This is, in all likelihood, the determining factor, but the practitioner cannot shut his eyes to the possibility that under its influence the high temperature as such, is a source of danger to his patient.

With these restrictions I shall surely not be misunderstood when I assert that temperatures which are ranked as high febrile temperatures do not in themselves, independently of other factors, exert any such injurious influence as has been usually attributed to them.

Our attention up to this point has been directed to the effects of high temperatures upon the general condition of the body. It is of importance for the proper understanding of fever, to determine the influence of heat upon the structure and functions of the various organs. To what extent can the febrile disorders of respiration, of circulation, of secretion, of nutrition, of innervation, be attributed directly to the elevated temperature? These are questions which can be answered better by experimental methods than by clinical observation, for the latter has to deal with the effects of heat complicated by other circumstances whose influence cannot be accurately determined. The one method, however, should be made to control the other.

The most striking immediate effect of heat upon an animal is increased frequency of respiration. When a dog or a rabbit is placed in an atmosphere of 100° (37.8° C.), it at once begins to pant, and the respirations may run up to 150 or more. The causation of this increased respiration, to which the name heat-dyspnoea has been applied by Ackermann,⁶ has been repeatedly investigated. Goldstein,⁷ in Fick's laboratory, found that by applying to the carotid arteries tubes through which hot water is flowing, the respirations may be greatly increased in frequency. Goldstein's experiment is usually cited as the crucial one, showing that the increased breathing is due to the effect of the heated blood upon the respiratory centres in the medulla oblongata. Sihler,⁸ working in the Biological Laboratory of the Johns Hopkins University, however, has demonstrated that the increased respiration of an animal exposed to heat is due to two causes, warmed blood and stimulation of the skin by the heat, and that probably skin-stimulation is the more important factor. Some of Sihler's criticisms of Goldstein's experiments have been met by Gad and Von Mertschinsky,⁹ who have made it evident that increased temperature of the blood stimulates the respiratory centres, or increases their irritability. Section of the vagi does not check heat-dyspnoea, so that this does not result primarily from the action of the increased temperature upon the terminal pulmonary expansion of these nerves. The removal of afferent impulses from the skin by section of the spinal cord does, however, exert so marked an influence that it cannot be doubted that heat-stimulation of the skin is

an important element in the causation. I have convinced myself of the correctness of Sihler's explanation by observing that in the hot-box at temperatures of 90° (32.2° C.), 95° (35° C.), rabbits often preserve their normal temperature, and still their breathing is markedly increased; and that, on the other hand, upon taking them out of the box, the respirations may sink before the internal temperature begins to fall. In one striking experiment, the respirations fell immediately to about normal upon removing from the hot-box a rabbit whose skull had been trephined on each side of the median line, and the optic thalami punctured with a needle.

We cannot transfer directly to human beings the results of experiments on heat-dyspnoea in animals, because in the latter respiration has a far more important function in temperature-regulation than in the former. To keep cool, a dog pants under circumstances when a man sweats. As heat-regulation is largely influenced by the cutaneous temperature, it is not improbable that in man heat-stimulation of the skin is less prominent than the warmed blood acting upon the respiratory centres in increasing the frequency of respiration in fever.

Inasmuch as disturbances of the heart and of the circulation in general are among the most important symptoms of fever, it is natural that much attention should have been given to the study of the effects of heat upon the organs of circulation. The supposed injurious effects of prolonged high temperatures in fever have been usually attributed especially to some toxic action of heat upon the heart.

That the pulse-rate is quickened by artificially heating rabbits and dogs has long been known. The positive demonstration that this acceleration is due to the direct action of the heated blood upon the mammalian heart itself was first given by my colleague, Professor Martin.¹⁰ By conducting through the dog's heart, isolated physiologically by the ingenious method which he devised, Martin proved that the heart "beats quicker when supplied with warm blood, and slower when cold blood is supplied to it; also, that the rate of beat depends much more upon the temperature of the blood in the coronary arteries than on its temperature in the right auricle or ventricle." These experiments make it unnecessary to recur to any action of the heated blood upon extrinsic cardiac nerves or nerve-centres in order to explain the quickened pulse of fever. Moreover, Fick¹¹ found that the nervous centres of the heart and bloodvessels are unaffected by heating the blood flowing through the carotid arteries in the manner adopted by Goldstein in his experiments on heat-dyspnoea.

Professor Martin has kindly permitted me, in this connection, to mention certain unpublished results of experiments which he is now conducting upon the effects of heat and cold on the isolated heart. As these results are pertinent to our subject, I gladly avail myself of this privilege. The table of an experiment which I have examined shows that the isolated cat's heart beats regularly and more and more rapidly as the temperature of the blood is gradually raised to 111.2° (44° C.). At this point the beats become irregular, but are restored to their normal rhythm by feeding the heart with cooler blood. The temperature of

⁶ Ackermann. *Deutsches Archiv. f. Klin. Med.*, Bd. II.

⁷ Goldstein. *Wurzbürger Verhandl.*, 361.

⁸ Sihler. *Journal of Physiology*, Vol. II, and Studies from the Biological Laboratory, Johns Hopkins University, Baltimore, Vol. II.

⁹ Gad and Von Mertschinsky. *Virchow u. Hirsch's Jahresbericht*, 1881, I, p. 197.

¹⁰ Martin. *The Direct Influence and Gradual Variations of Temperature upon the Beat of the Dog's Heart*. *Philosophical Transactions of the Royal Society*, Part II, 1885.

¹¹ Fick. *Plüger's Archiv*, Bd. V.

about 111° (43.9° C.) appears to be a critical one for the isolated heart. Above 111.2° (44° C.) to 113° (45° C.), the pulsations become slower, instead of quicker, as the temperature is raised. At 122° (50° C.) the heart's action ceased, but it was made to beat again by supplying it with cooler blood, showing that the cessation was not due to heat-rigor. This interesting experiment teaches, among other things, that very high temperatures may produce results differing not only in degree, but also in kind, from those of temperatures only a degree or two lower.

We may consider it, then, established that increased frequency of the pulse in fever is referable to the direct action of the warmer blood on the nervo-muscular substance of the heart itself. Clinical observation of cases of fever makes it evident that there may be and often are present other circumstances which influence the rapidity of the heart's pulsations—circumstances which, in themselves, may slow or may quicken the pulse. Large series of statistics, therefore, are required to bring out the ratio between the pulse-rate and the temperature in fever, and even then, for any given temperature, the maximum and the minimum pulse-rates lie so far apart that the statement of the average increase in the frequency of the pulse for each degree of rise of temperature, such as has been computed by Liebermeister, has very little value.

Not only is the pulse-rate quickened in fever, but there are often other and more serious circulatory disturbances. In the fever produced in rabbits by the injection of the swine-plague bacillus I find a reduction of the blood-pressure measured in the carotid artery, and others have obtained similar results in the artificial fevers of animals. The determination of the blood-pressure in fevers of human beings by means of Basch's sphygmomanometer has given, in the hands of different experimenters, such contradictory results that no conclusion can be drawn, unless it be the very probable one that the blood-pressure varies, being sometimes high, sometimes low, and sometimes normal in fever. That the arterial tension is often reduced is made evident by the marked diastolic of the pulse wave. This diastolic, however, characterizes particularly septic and typhoid types of fever, and is absent during the chill of intermittent fever, and often in exanthematous and some other fevers, so that we cannot consider the blood-pressure and arterial tension as having any such definite relation to fever as does the pulse-rate.

It has been observed by Paschutin, Senator and Mendelson¹² that the blood-pressure rises with increased bodily temperature produced by exposure to heat. Mendelson found that the pressure begins to sink as the temperature approaches a point incompatible with life. In these experiments the animals were subjected to rapid elevations of temperature. I find that when a rabbit is gradually and cautiously heated in the hot box used in my experiments the rise of temperature is less marked, and may not surpass even for temperatures of 107° (41.7° C.) the normal limits of variation which may be found in the blood-pressure of the same animal examined at different times. These measurements, however, are not very conclusive, for, as has been already remarked, rabbits which have

been operated upon do not stand well artificial heating.

I have observed that the rhythmical contractions of the bloodvessels of the rabbit's ear are feeble or absent when the temperature is much elevated by artificial heating, whereas it will be remembered that in experimental septic fever these contractions are irregular and exaggerated.

Upon the whole I think that we are justified in concluding that the variations of arterial tension in fever are much less dependent upon increased temperature than upon other factors, such as infection.

But the cornerstone of the doctrines which teaches that a chief source of danger in fever is the elevation of temperature is not the effect of increased temperature upon the pulse-rate or the arterial pressure, but is the belief that prolonged high temperature exerts a directly paralyzing influence upon the heart. The main support of this belief is not the admitted fact that extremely high temperatures paralyze the heart, for these critical temperatures lie far above the ordinary high temperatures of fever, and in a region where all admit the dangers of the excessive internal heat. The stately superstructure has been built up chiefly on the basis of experiments showing that when the internal temperature of animals has been maintained for some time at a high point by exposure to external heat, parenchymatous, or fatty degeneration of the heart-muscle, ensues. It is true that all experiments are not in accord upon this point, and that, as a rule, pathological anatomists have not given adherence to the doctrine that parenchymatous degenerations are chiefly dependent upon high temperature, still this doctrine has gained a wide acceptance among clinical men, and is advocated with especial force by Liebermeister. I have, therefore, thought it desirable in my experiments to give especial attention to this question.

Among previous experimenters on artificial heating of animals Iwaschkewitch, Wickham Legg, and Litten may be mentioned as finding parenchymatous, or fatty degeneration of the heart, liver and kidneys, and Walther, Obeynier, and Naunyn, as obtaining only negative results. It is not necessary here to enter into a criticism of these different experiments, which are of very unequal value. Litten's¹³ experiments, on the one side, and Naunyn's¹⁴ on the other, appear to be the most carefully conducted. Litten, whose experiments are those usually cited, kept guinea-pigs in a double-walled metallic box, which was at a constant temperature of 98.8° (37° C.) with dry air, or of 96.6° (36.6° C.) with moist air. He never failed to find fatty degeneration at the end of thirty-six to forty-eight hours. The liver was first affected, and then the heart and kidneys, which became fatty by the second or third day. The animals did not survive longer than five or six days, and by that time the fatty degenerations had reached an extreme degree. Von Recklinghausen¹⁵ urges, with apparent justice, against these experiments, that the enforced inactivity of the muscles, and the imperfect ventilation, may have had as much to do in causing the degenerations as had the high temperature. These objections find support in the experiments of Naunyn, who making use of a much larger and better ventilat-

¹² Paschutin. *Ludwig's Arbeiten*, 1873. Senator, Du Bois, Reymond's *Archiv*, 18-3, Supplement Band. Mendelson, *On the Renal Circulation during Fever*. *Am. Jour. Med. Sciences*, Oct., 1883.

¹³ Litten. *Virehow's Archiv*, Bd. 70.

¹⁴ Naunyn. *Op. Cit.*

¹⁵ Von Recklinghausen. *Handb. d. Allg. Pathologie d. Kreislaufs u. d. Ernährung*, p. 612, Stuttgart, 1883.

ing heating-box than Litten, failed to find any parenchymatous or fatty degeneration in his rabbits after they had been exposed for two weeks to higher temperatures than Litten employed.

As my experiments confirmed in other respects Naunyn's results, I was quite unprepared to find that my rabbits, after a variable period of artificial heating, quite constantly presented fatty degeneration of the heart, liver and kidneys, and sometimes of the diaphragmatic and intercostal muscles. I never found the degeneration at so early a period as did Litten. It was not until the rabbit had been kept for at least a week, with an average rectal temperature of 107° (41.1° C.), that the degeneration was noticed, and then only in moderate degree. The higher and the less fluctuating the internal temperature the more certain was the degeneration to appear. I could reckon upon obtaining rabbits with well-marked fatty degeneration of the heart by keeping them for ten days with a rectal temperature between 107° (41.7° C.) and 108° (42.2° C.). I am not prepared to account for the discrepancy in this respect between Naunyn's and my experiments. The box used was larger than that employed by him, and every care was taken to keep it well ventilated by leaving at least one-third, and often one-half, of the top open.

I do not think that my experiments altogether do away with the force of Von Recklinghausen's criticisms. The fact that in these experiments the degeneration made its appearance at the end of a week or ten days, and in Litten's in forty-eight hours, to say nothing of Wickham Legg finding it at the end of twelve hours, would suggest that if the rabbits were heated in a still larger and better ventilated apartment, the degeneration might not occur at all, or might be deferred to a much later period. In my opinion, however, even if full allowance be made for this line of argument, we must still admit that prolonged high temperature is an important factor in the causation of fatty degeneration.

That it is not the sole factor, no one can doubt. As is well known, fatty degeneration is produced by anæmia and by a variety of poisons, and even in fevers, most pathologists are convinced that it bears a closer relation to the kind and the degree of infection than it does to the height of the temperature. It is more frequently absent than present in pneumonia, even where there have been symptoms of heart failure.

The kind of degeneration present in my rabbits was fatty, and not parenchymatous. Probably all who make many post-mortem examinations will agree with Von Recklinghausen that altogether too liberal use has been made of the diagnosis of parenchymatous degeneration, and not sufficient account has been taken of the anatomical changes of the parenchyma produced by post-mortem chemical changes, such as acid formation, etc.

In order to determine what influence is exerted by infection combined with high temperature, I inoculated a rabbit which had been in the hot box for four days with the bacilli of swine plague. These bacilli, if not identical with, are closely allied to those of rabbit septicæmia, and are extraordinarily virulent for rabbits. In thirty-six hours the animal, which had remained at a high temperature in the box, was dead, and the most extreme fatty degeneration of the heart and other organs was found. As in other experiments, the degeneration had not made its appearance

at this early date, there can be no doubt that the infection was an important element in the causation. That it received powerful support in the high temperature, however, is proven by the fact that little or no degeneration of the heart is observed after infection with this organism when the animal is kept at ordinary temperatures.

Admitting, then, that high temperature aids in the causation of fatty degeneration of the heart in fever, the question arises: what do we know of the effects of this degeneration upon the functions of the heart? I will say nothing of the growing tendency to transfer a large part of the classical symptomatology of Quain's fatty heart to other conditions, particularly to disease of the coronary arteries and chronic myocarditis; we are concerned at present only with the occurrence of this degeneration in fever. Have we not been somewhat hasty in assigning to degenerations of the heart-muscle so large a share in the production of heart-failure in fevers? One cannot look at a muscular fibre in which the striated substance is all replaced by fatty globules, and suppose that its functional activity was unimpaired, but into what serious errors should we fall if we attempted to deduce from the anatomical changes in the liver cells or the renal epithelium the corresponding functional disturbances? Certain it is that symptoms which are usually considered those of heart-failure are often enough present in fevers without finding at the autopsy any degeneration of the heart; and, on the other hand, such degeneration may be discovered without any history of these symptoms, although, of course, the two are often associated.

In the face of these doubts, it seemed desirable to determine, if possible, experimentally the damage inflicted upon the cardiac functions by the presence of fatty degeneration of the heart-muscle. That this degeneration may exist without apparent injury is rendered probable by the fact that a rabbit which has been kept for three weeks in the hot box at a high temperature, and in which there is every reason to suppose that fatty degeneration has occurred, may present no symptoms of heart-paralysis, and when removed from the box, appear and remain perfectly normal. An instance has already been mentioned, where one rabbit at the end of three weeks was killed, and presented marked fatty degeneration of the heart; and another, which had possessed a higher average rectal temperature, was removed from the box at the end of the same period, and appeared for ten days perfectly normal, when it was used for another purpose. That this degeneration can be recovered from is, moreover, rendered probable by clinical experience, and is universally admitted.

Once, in tearing out a bit of fatty heart-muscle from one of the rabbits, I made a curious observation. Near the edge of the cover-glass, where there was a slight current in the physiological salt solution, rhythmic contraction was observed in a group of muscle-fibres. This interesting spectacle could be watched under the microscope for ten minutes. These contracting fibres were filled with fatty globules, and only here and there, and then indistinctly, could any trace of striation be detected. This observation teaches that a fatty, degenerated muscular fibre is capable of contraction, but, of course, warrants no further conclusions.

Far more important than any inferences which can be drawn from such observations is the measurement

of the actual blood-pressure in animals whose hearts have undergone fatty degeneration. This I have done in three instances. The rabbit was removed from the box at the end of ten days to two weeks, and the pressure in the carotid artery was measured by a mercury manometer attached to Ludwig's kymograph. In no instance was the blood-pressure found to be lower than that normally present in rabbits. In an experiment recently performed, the average pressure was 125 mm. of mercury; the pulsations were regular; the heart responded to stimulation of the vagi in an entirely normal manner. After such stimulation, the pressure in one case rose to 176 mm. of mercury. Immediately after the measurement of the blood-pressure, the rabbit, as in the previous instances, was killed, and marked fatty degeneration of the muscular fibres was found. In many of the fibres the striation could not be made out, and only fatty globules were visible; in others, which also contained fatty granules, the striation was distinct. The degeneration involved the whole muscular structure of the heart. A similar appearance in a human heart would be considered to indicate well-marked fatty degeneration.

These experiments show that a rabbit's heart which has undergone marked fatty degeneration from exposure to heat, may perform its functions, to all appearances, and for the time being, in a perfectly normal manner. There is at least one consideration which should make us cautious in drawing far-reaching conclusions from these experiments. There are diseases of the heart, I need only refer to lesions of the coronary arteries, in which the functions of the organ are performed for a longer or shorter time apparently in a perfectly normal way, and then heart-failure suddenly appears. It is probable that here, too, the blood-pressure would be found normal at a certain period of the disease, and still it would be an error to suppose that the lesion does not damage the heart. Whatever force there may be in this analogy, I still think that these experiments as well as careful pathological and clinical observations, necessitates some revision of the current opinions concerning the significance of fatty degeneration of the heart in fever.

So much time has been devoted to a consideration of the effects of heat upon the respiration and the heart, that the limits of the present lecture will permit hardly more than a summary of the effects exerted by heat upon other functions and organs of the body. On account of the great clinical importance of the subject it seemed desirable to treat with especial fullness the influence of increased temperature on the heart.

What part has increased temperature in producing febrile consumption of tissue? In the first lecture mention was made of Pflüger's experiments, showing that animals with elevated temperature produced by exposure to heat, absorb more oxygen and excrete more carbonic acid than at the normal temperature. This is in conformity with the general law that within certain limits cell-activity is more energetic at high than at low temperatures. It was also shown in the first lecture that only a comparatively small part of the increased oxygen absorption and carbonic acid elimination in fever can be referred to the immediate effects of high temperature. It has not been demonstrated that the respiratory gases in human beings are increased by artificial elevation of temperature. In-

deed, Voit¹⁶ was unable to find any such effect of increased temperature in human beings on the respiratory gases as both he and Pflüger observed in animals.

Inasmuch as increased disintegration of nitrogenous material is such a prominent disorder in fever, much attention has naturally been given to determining how far this can be explained by elevated temperature. That it cannot all be so explained is proven by the interesting observation of Sydney Ringer, that excessive elimination of urea antedates the rise of temperature in intermittent fever, and Nannyn has found the same to be true of the septic fever of dogs.

The experiments which have been made to determine the influence of artificial heating on the amount of urea excreted by man and by animals, have yielded contradictory results. A number of these experiments are of little or no value, because no attention was given to establishing beforehand, nitrogen equilibrium. Schleich's¹⁷ experiments may be mentioned as perhaps the most accurate of those showing an increase in the urea excreted under the influence of exposure to heat. The more recent experiments of Simanowsky¹⁸ were made in Voit's laboratory with especial precautions as to the establishment of nitrogen equilibrium. He failed to find any increase in the excretion of urea as the result of exposure to external heat. While then this question must be left at present *sub judice*, there can be no doubt that only a part at least of the excessive disintegration of nitrogenous substance in fever can be assigned to the influence of the increased temperature.

The loss of weight exhibited by animals kept for a long time in a hot atmosphere is usually explained by the excessive evaporation of water from the body. In many of my experiments the rabbits were freely supplied with food and water, and still the loss of weight was very noticeable. I am inclined, therefore, to attribute to the increased temperature under these conditions a decided influence upon the consumption of tissue.

Senator¹⁹ found the urine of rabbits artificially heated to contain more albumen than is found occasionally in the urine of healthy rabbits. This observation I have not been able to confirm on the rabbits in my experiments, and probably this difference is to be explained by the more rapid and intense heating employed in Senator's experiments. Senator explains the heat albuminuria by the rise of arterial pressure in the renal vessels, but this is not in conformity with the interesting experiments of Mendelson,²⁰ who found by means of Roy's oncometer that both in thermic and in septic fevers of dogs the kidney is anæmic, while the general blood-pressure is elevated.

No satisfactory explanation has yet been offered of the diminution of perspiration which distinguishes fever so strikingly from the condition produced by exposure to high external temperatures. Luchsinger's assertion that this is the result of lessened irritability of the sweat-centres in the spinal cord remains to be proven, and at the best is not a satisfying explanation.

Bokai,²¹ in a recent experimental research on intestinal peristalsis in thermic and in septic fevers, comes to the conclusion that the constipation of fever is to be explained by the heated blood stimulating the

¹⁶ Voit. Zeitschrift für Biologie, Bd. xiv.

¹⁷ Schleich. Arch. f. exp. Path. u. Pharm., Bd. iv.

¹⁸ Simanowsky. Zeitsch. f. Biologie, Bd. 21.

¹⁹ Senator. Du Bois-Reymond's Archiv., 1883, Supplement Band.

²⁰ Mendelson. Op. cit.

²¹ Bokai. Archiv. f. exp. Path. u. Pharm., Bd. 23.

nerves inhibiting intestinal peristalsis. If this should be confirmed, then it would be proven that at least three symptoms of fever, the quickened respiration and pulse and the constipation, are direct effects of elevated temperature.

When we consider the important nutritive changes in the muscle accompanying increased thermogenesis we shall be inclined to attribute to these alterations and the associated abnormal innervation, rather than to increased temperature, the muscular pains and weakness which form such an early and frequent complaint in fevers.

The investigations hitherto published of changes in the blood produced by increased temperature within febrile limits are not of sufficiently definite and satisfactory nature to warrant any consideration on the present occasion.

Nor am I acquainted with any positive experimental evidence (save Bokai's work already mentioned) that increased temperature is concerned in the production of the digestive disorders of fever. It has already been said that the rabbits with high internal temperatures in the hot box ate greedily, but these voracious animals cannot be considered favorable subjects to test this question.

Especial emphasis has been laid by Liebermeister and those who accept his teachings, upon the dependence of the nervous symptoms of fever, particularly the so called typhoid symptoms, on the elevation of temperature. There is, however, abundant clinical evidence to disprove this doctrine. Reference need be made only to relapsing fever, and especially to the aseptic fever described by Genzmer and Volkmann, in which there is entire absence of the whole group of so-called nervous symptoms. Moreover, Liebermeister's opinion in this respect is not supported by adequate experimental evidence. Unless the temperature of the brain or of the entire animal be brusquely raised to a high point by coarse methods no disturbance of the cerebral functions is noticed until the temperature reaches a critical point, beyond which further increase is likely to prove rapidly fatal. At this critical point the animal, which before has lain quietly, becomes very uneasy, and if the temperature rises higher it has convulsions and coma, and dies.

I have endeavored to bring before you in this lecture the experimental evidence relating to the effects of increased temperature upon the general condition of the body, and upon the functions of its various organs. I have given account, as briefly as possible, of some experiments which perhaps shed additional light upon this important subject. In the course of this lecture emphasis has repeatedly been laid upon the necessity of controlling the results of the experimental method by clinical observation, and here and there I have endeavored to institute this control. Further than this I shall not attempt to set before you the clinical evidence regarding the effects of increased temperature in fever. There are those here more competent than I to deal with this side of the question. We may feel assured that when all the facts are before us, and are properly interpreted there can be no lack of harmony between the results of experimental and those of clinical investigations.

— A Chemical Analysis, published in the *Druggists Circular*, accuses the extensively-advertised *Scotts Oats Essence* of containing alcohol and morphia.

Original Articles.

FRACTURE OF THE STERNUM, WITH DISLOCATION OF FRAGMENTS; RESTORATION TO PLACE BY TREATMENT BY POSITION; RECOVERY.

BY CHARLES E. PORTER, M.D.,
Professor of Clinical Surgery Harvard Medical School, Surgeon Massachusetts General Hospital.

FRACTURE OF the sternum alone is an extremely rare accident, but as a complication in crushing injuries of the thorax it is associated with fracture of the spine or ribs. At St. George's Hospital in four years nine cases were examined, three associated with fracture of the spine, and six with fractured ribs. Malgaigne recorded but ten cases, five of which ended fatally on account of complications as mentioned above. The causes are usually direct violence, as crushing blows upon the chest, though violent bending of the spine backwards has produced it. "One case (Chevance's) was caused by violent forward flexing of the body from a fall."

Dr. Fagel, of Mexico, reports this accident as having happened to a celebrated vaulter, who whilst bending his body backward, was endeavoring to raise a heavy weight with his teeth. The complications are injury and inflammation of the pericardium, pleura, lungs, mediastinum and heart.

Authorities differ as to treatment advised. Some recommend the recumbent position, with a pad between the scapulae, and head low. Others the sitting posture, with the head thrown back. Others operative measures, as the lifting of the depressed fragment by means of the trephine and elevator, or the corkscrew; while another says that these latter methods are "the relics of the old, cruel and barbarous surgery." It seems to me that after position and manipulation have failed, and deep inflammation threatens, that some operative interference is indicated, and especially if the displaced fragment is pressing upon the trachea, or the large vessels.

The case which I have to report is that of Captain Holden, aged twenty-one, captain of the Harvard football eleven, and I give the name as, at the time of the accident (one of the intercollegiate games), it became generally known through the papers. Captain Holden stood erect ready to tackle one of the opposing team, who was running with the ball. As his opponent reached him he jumped, and his knee struck Holden on the sternum, producing a fracture and dislocation of the upper fragment backwards, the lower one overriding. The point of fracture was at the junction of the second and third pieces of the gladiolus. The ossification at this point is completed between the twentieth and twenty-fifth years of age, so that the separation was of the nature of an epiphysal fracture. There was profound shock and agonizing pain. The depression seemed to be little more than the thickness of the sternum. He was removed to the Massachusetts General Hospital, and in consultation with the other members of the staff it was decided to try the effect of the recumbent position, with hard pad between the shoulder blades, and the head lower than the chest. This position was most painful, and after some hours the pad was removed.

On the next day there was no change in the position, and the patient suffered greatly from pain in the

bowels, which did not yield to cathartics or enemata. He had retention, requiring the catheter. Morphine was given subcutaneously.

On the third day no change. The patient was lifted from the bed to the erect position, and, supported under either arm, was bent backwards as far as possible. This produced a sickening pain at seat of injury, and he feared he would faint, and he was put back to bed. About half an hour afterwards, on coughing and taking a deep respiration, the bone suddenly snapped forward into place. A broad band plaster was immediately applied (such as is used in fracture of the ribs) to hold the chest walls immovable, and compel diaphragmatic respiration. The plaster was changed from time to time, and there was no re-displacement. There was slight cough for ten days. Eleven days after injury he was up, and in three weeks left the hospital. There was no resulting deformity.

DISLOCATION OF THE BONES OF THE STERNUM.

BY C. B. LYMAN, M.D., DENVER, COL.,
Assistant Surgeon, Union Pacific Railroad.

THE patient, a passenger brakeman on the Union Pacific Railroad, was twenty-seven years old. On January 22d, while running up an embankment to catch a train, and when nearly at the top, he fell, and struck with his chest upon the end of a projecting tie. He suffered a good deal of pain during the day, and with every breath or movement of the body, he felt something snap at the seat of pain.

I first saw him on January 25th, three days after the accident; the pain had diminished, but he could still feel the snapping. Upon examination I found a depression of nearly half an inch just below the line of the second ribs, and in the median line; with forced inspiration there was a distinct cartilaginous grating. In fact, I had to do with a backward dislocation of the gladiolus upon the manubrium, the second rib on each side remaining attached to the manubrium.

Reduction was attempted by manipulation of the fragments, and also by standing behind the patient and drawing the shoulders back forcibly, while the patient was made to take a deep inspiration. This, however, failed. The patient was then taken to the Union Pacific Hospital and etherized; the dislocation was then reduced by Dr. O. J. Pfeiffer and myself by depressing the upper fragment firmly, while pressure was being exerted upon the chest in the axillary line on either side, over the ribs which were attached to the lower fragment, the object being to spring the lower fragment forward at the same moment that the upper fragment was most depressed.

This failed several times; but finally, the patient most opportunely gave a slight cough, owing to fresh ether on the sponge, just at the moment when pressure was being exerted as described, and the lower fragment came forward into line with a distinct crepitus. An adhesive strip was then placed around the chest to hold the fragments immobile for a few days. There has been no tendency to re-dislocation, and the fragments remain in perfect line. This case is of interest for several reasons:

(1) On account of the infrequency of the accident. Poland, in "Holmes's System," says that during the

last thirty years "several cases" have been seen at Guy's Hospital.

(2) Its method of production. Most of the cases reported, have been produced by indirect violence; this was produced by direct violence, the end of the tie striking the sternum just below the line between the manubrium and the gladiolus.

(3) Because the lower fragment was displaced backwards. In almost every case on record the upper fragment has been displaced backward instead of the lower one.

RECENT PROGRESS IN PUBLIC HYGIENE.

BY SAMUEL W. ABBOTT, M.D.

THE ACTION OF DIFFERENT WATER-SUPPLIES UPON LEAD-PIPES.¹

SHEFFIELD, in England, has a population of about 300,000. It is supplied with water from several reservoirs, being of moorland origin and furnished by gravity. The high service of the town is furnished from a separate reservoir. Cases of lead-poisoning have been frequent in the town, and there has been an alarming increase of such cases during the past winter, the recent cases amounting to several hundred. On inquiry it was found that these were quite exclusively among the population supplied from the high-service reservoir. The waters of these reservoirs are obtained from different districts; and in the case of the lower-level water the amount of lead per gallon has usually been but a trace only, never more than $\frac{1}{10}$ grain even after standing in the pipes all night, while that in the higher-level water has often been found to be as high as $\frac{1}{2}$ grain per gallon, and occasionally as much as $1\frac{1}{4}$ grains.

The water of the high-service was found to be distinctly acid, and it was claimed that the acid was of vegetable origin, arising from the peat upon the moors.

Certain differences in the character of the supplies may account for the variable action of the water upon lead.

The low-level supply is obtained partly from a reservoir, the water in which has been stored for a long time, and the water of this supply also passes for two miles through a brick conduit, the mortar of which may cause the neutralization of the free acid. These, however, are mere conjectures, since no systematic inquiry has been made. The water company has had blocks of limestone placed in the conduit. Mr. Allen, the public analyst, criticizes this measure, saying that the use of too much limestone will injure the water, and render it as liable to act upon lead as if it had not been thus treated. He says, moreover, that the only rational method of using lime is to introduce it regularly and constantly in powder, or as milk of lime, in such quantity as previous analysis shall have shown to be requisite for the neutralization of the free acid.

The panic produced by this epidemic of lead-poisoning was followed by an alarming waste of water, the taps being kept open for hours at a time. The filter manufacturers drove a lively trade, since it was found that animal charcoal seemed capable of removing lead from the water, probably, as the writer states, in con-

¹ The Sheffield Water-Supply and Lead-poisoning. By Alfred H. Allen, F.C.S. Sanitary Record, Feb. 15, 1888, p. 326.

sequence of the phosphates contained in such charcoal, and the consequent formation of insoluble phosphate of lead.

Mr. Allen further suggests that the present action of the high-service water is not due to its deficiency in silica, since he finds that its proportion of silica is sensibly in excess of the amount claimed by Dr. Tidy, to afford perfect immunity from lead-corrosion.

Dr. Richter reports that about one hundred cases of lead-poisoning occurred in Dessau as a consequence of changing the source of public water-supply. A curious feature of this epidemic was that not a single child was attacked. The quantity of lead present in the water occasionally exceeded seven milligrammes per litre, which had been regarded as a limit of danger. Dr. Richter observed that it was not so much the amount present which harmed, as the long-continued exhibition of small quantities of lead which collect in the body till the point is reached, when the organs can no longer withstand the poison.²

TYPHOID FEVER AS AFFECTED BY THE PUBLIC WATER-SUPPLY OF VIENNA.³

In this paper, by M. Mosny, the oft-repeated observation as to the influence of a pure water-supply in reducing the mortality from typhoid fever receives a new and vigorous confirmation. Other diseases have been diminished in like manner. Not a single death from dysentery has occurred since 1880 in Vienna. The water-supply of Vienna up to 1861 was partly from wells, of which there were then about 10,000 in use, and, as might have been expected, water-pollution was the rule. There were also public and private aqueducts conveying water from the Danube canal, and finally a more thorough public supply from distant springs of undoubted purity.

The prevalence of typhoid fever and, notably the epidemic of 1877 was mainly in the houses not supplied with the public spring-water supply.

In concluding this article the author says, "We conclude that water is the principal agent in the transmission of typhoid fever, and in order to cause this disease almost entirely to disappear from a large city where it is endemic, it is only necessary to furnish to the inhabitants water of unquestionable purity, and in sufficient quantity."

The population supplied from the new sources in Vienna is 764,000, and the consumption per capita 170 litres per day (about 45 gallons).

THE SEWAGE WORKS OF WIESBADEN.⁴

These works are constructed upon a modification of the Frankfort, and of the Rökner-Rothe processes. The sewage is made to part with a large part of its impurities by being passed upward and downward through chambers arranged in front of the tanks. It goes through a previous straining process to remove all floating substances, and is then mixed with the precipitant (milk of lime) in a chamber where a thorough agitation is effected by blowing in air. The sewage then passes over a weir into a narrow chamber, at the bottom of which it is conducted through small openings in the division wall into a second cham-

ber, which it traverses in an upward direction, and then over a second screen wall and down through a third chamber into a fourth, through which it ascends into the depositing tanks, three in number. These can be used together or separately. The total quantity of sewage treated per day is estimated at 6,500 cubic metres.

THE SCHWARTZKOPFF SEWAGE SYSTEM AT EHRENFELD.⁵

This plan as described by Professor Arnold, of Brunswick, differs from the Liernur system in that the sewage is brought to the outfall by gravitation, and lifted into the apparatus for treatment in the same manner as in the Rökner-Rothe process. A separate system of sewerage is, however, essential.

The sewage flow is conducted into iron reservoirs, from which it is drawn into an exhausted horizontal receiver, furnished with a revolving stirrer, the blades of which tear in pieces all solid matter, and thoroughly churn the sewage. The discharge from this receiver takes place under varying pressures, and the amount of the precipitants is added in proportionate quantities by means of rotary taps, which measure a fixed quantity at each turn, and vary in speed in accordance with the rapidity of flow. The chemicals used are lime, sulphate of magnesia and phosphates, and with these the sewage is agitated and mixed in four circular tanks provided with stirrers.

Up to this point the operations are conducted in closed vessels, a matter of sanitary importance. The chemically-treated sewage passes into an open channel, from which, by means of sluices, it can be turned into any one of three tanks, each capable of holding one-tenth of the day's flow. These are filled in succession, and the sludge sinks to the bottom, while the water becomes clarified in the usual way, the time required being about one hour. By means of taps at different depths the clear liquid can be drawn down to the sludge level. The supernatant liquid passes on to a peat-filter, provided with a grating, and from this is discharged a perfectly clarified effluent, absolutely free from smell. The sludge is let off by a tap into another vessel, where it becomes partially consolidated, but still contains eighty-five to ninety per cent. of water. It is subsequently dried in thin layers, and ultimately mixed with the peat from the filters, and made up by hand into flat cakes, to be used as a fertilizer.⁶

THE MÜLLER-NAHNSEN SYSTEM AT HALLE.⁶

Dr. Blasius refers to the former report on the Rökner-Rothe process at Essen, and to the recommendation that a trial of the same should be made in Brunswick. Owing to favorable accounts of the working of the new system at Halle, it was resolved to send a deputation from Brunswick to study the process on the spot, and advise whether a trial of it should be made. A visit was paid to Halle for this purpose on October 16, 1886. The works, which are substantially built, and of a permanent character, are described. The total cost was 32,000 marks (\$8,000). Samples of the raw sewage and of the effluent water were taken by the author, as also of the pressed sludge, and these, carefully packed and preserved in ice, were brought to Brunswick for analysis. The bacteriological exam-

¹ Deutsche Vierteljahresschrift für öffentliche Gesundheitspflege, 1887, page 142.

² From a communication made to the Society of Public Medicine, Dec. 28, 1847. Revue d. hygiene, Jan., 1888, p. 18.

³ Deutsche Vierteljahresschrift für öffentliche Gesundheitspflege, 1887, p. 81.

⁴ Deutsche Vierteljahresschrift für öffentliche Gesundheitspflege, 1887, p. 92.

⁵ Monatsblatt für öffentliche Gesundheitspflege, 1887, p. 49.

ination of the raw sewage gave, in two comparative statements, 6,220,800, and 6,825,600 colonies per cubic centimetre, and in the effluent water only 14 and 3 colonies respectively, the former of which in 6, and the latter in 5, days, increased to 150 and 53 respectively. Detailed analyses are given of the sewage water, the effluent, and of the pressed sludge. The result of this treatment was, that the suspended matter was entirely removed; the amount of inorganic substances in solution was slightly decreased, while the fixed organic matters in solution were increased about 25 per cent.; the total amount of organic matters dissolved in the effluent being two-thirds greater than in the raw sewage. The percentage of chlorides was enlarged by one-half, and the phosphoric acid was only partially removed. The nitric acid was nearly doubled, owing to the oxidation of the ammonia, the volume of which was reduced by one-half. The sludge, which when dried at 105 centigrade, contained 82.52 per cent. of inorganic matters, and 17.48 per cent. of organic substances, yielded only 16.72 per cent. of phosphoric acid, the nitrogen being 0.926 per cent. The value of this sludge is given at 30 pfennige the centner (4d per cwt.). Each cubic metre of sewage water yields about one kilogram of pressed sludge. The cost of treatment for 4,801 cubic metres of sewage was 161 marks, 92.80 marks being for chemicals, and 68.20 marks for labor; equivalent to 3.35 pfennige per cubic metre. As compared with the cost of the Rückner-Rothe system, which was shown to be 1.70 pfennige per cubic metre, this system is just twice as dear. But for the Rückner-Rothe system each cubic metre of sewage required the addition of 0.52 kilogram of precipitants, while for the Müller-Nahnsen process only 0.39 kilogram of precipitants is employed. The quantities used being thus, roughly, as 3 to 4, while the relative cost is approximately as 2 to 1. From this it follows that the average cost of chemicals for the Müller-Nahnsen process is 160 per cent. dearer than those for the Rückner-Rothe plan; the results of treatment being slightly in favor of the latter process. A trial therefore at Brunswick was deemed unnecessary.

THE AGE FOR RE-VACCINATION.⁷

The Local Government Board has issued an order dated February 3, 1888, amending former regulations, as to the age at which re-vaccination may be furnished at the public expense. The new order provides that re-vaccination by a public vaccinator may be performed when the applicant has attained the age of twelve years (instead of fifteen years as heretofore), or in case of imminent danger from small-pox, at ten years (instead of twelve as heretofore), and has not before been successfully vaccinated.

The order further provides, with reference to children in public institutions, that the medical officer may re-vaccinate any one under ten years of age, whose primary vaccination he deems to have been inadequate, and who has not before been successfully re-vaccinated.

THE HYGIENIC SIGNIFICANCE OF RE-VACCINATION.⁸

Dr. R. Gerstaecker in a paper with the above title, gives some valuable data compiled from the reports of the Imperial Board of Health, and also from the

report of the Vaccination Committee. From their tables it appears that the mortality from small-pox in Prussia, formerly differing but little from that of other countries, has fallen to a minimum under the operations of the vaccination law, so that small-pox may now be considered as having disappeared, except in some frontier districts, while Austria, with her defective regulations as to vaccination and still more so as to re-vaccination, suffers severely from small-pox. Dr. Gerstaecker presents the following table as to the mortality from small-pox in London and in Berlin, with the comment that, while London enforces vaccination of the children, it has not enforced re-vaccination. He attributes the difference in the relative mortality from small-pox in the two cities to these facts.

DEATHS FROM SMALL-POX, PER 100,000 INHABITANTS.

	1875	1876	1877	1878	1879	1880	1881	1882	1883
In London	1.3	20.8	71.0	38.8	12.1	12.5	61.9	11.1	3.4
In Berlin	5.2	1.8	0.4	0.8	0.7	0.8	4.7	0.4	0.3

The percentages in the following table, for a period of six years, also present further evidence of the advantages of re-vaccination.

BAVARIA.

	Cases of Small-Pox.		Deaths from Small-Pox.		Unvaccinated.			Vaccinated.			Re-vaccinated.		
					Cases.	Deaths.	Percentage of Deaths.	Cases.	Deaths.	Percentage of Deaths.	Cases.	Deaths.	Percentage of Deaths.
1879	145	22	17	7	41.1	110	15	13.6	18	0	0.		
1880	404	58	27	10	37.0	336	43	12.8	41	5	12.2		
1881	559	78	56	27	48.2	466	48	10.3	37	3	8.1		
1882	468	71	33	15	45.5	349	51	14.6	86	5	5.8		
1883	247	34	11	5	45.4	198	29	14.6	38	0	0.		
1884	63	8	4	2	50.0	51	5	9.8	8	1	12.5		
Average					44.6			12.6			6.1		

THE TOXIC PRINCIPLE OF EXPIRED AIR.⁹

Drs. Brown-Séquard and d'Arsonval have presented a communication to the Academy of Sciences, intended to demonstrate the existence of a toxic principle in air expired from the lungs of men, or other animals. The facts hitherto known are the following:

(1) Expired air almost always, if not always, contains ammonia, but in a quantity insufficient to account for the injurious action of such air.

(2) Expired air contains a small quantity of organic matters, which, if they are not already decomposed on leaving the air-passages, yet have a marked tendency to rapid change.

(3) Confined air, charged with pulmonary exhalations, is not injurious, on account of the carbonic acid contained in it. Atmospheric air to which one per cent. of carbonic acid has been added causes but little

⁷ Order of Local Government Board, Feb. 3, 1888. London, 1888.
⁸ Deutsche Vierteljahrsschrift für öffentliche Gesundheitspflege, Vol. XX, p. 87, 1888.

⁹ Journal d'Hygiène, No. 595, February 16, 1888.

inconvenience, while expired air containing no more carbonic acid is extremely noxious.

Experiments were conducted in which rabbits were treated with injections of water containing the toxic principle of pulmonary mucus.

The primary effects were: dilation of the pupils; slowing of the respiration; paralysis, especially of the lower extremities; rapid diminution of temperature from half a degree to five degrees C.

In larger doses there were more pronounced symptoms: trembling and general convulsions; attitude *recroquevillée*; choleric diarrhoea, continuing till death ensued, in three or four hours after the injection.

The conclusions of the experimenters are that:

(1) The lungs of men, of dogs, and of rabbits in health evolve an extremely energetic poison, which is continuously exhaled with the expired air.

(2) It is probable, if not certain, that it is this poisonous agent which makes confined air injurious.

The true prevention of danger is found in efficient ventilation.

ARSENIC IN WALL-PAPER, ETC.¹⁰

The law of the German Empire of July 5, 1887, as to colors injurious to health, so far as wall-papers are concerned, is as follows: Section 7. No colors containing arsenic are allowed to be used in the manufacture of paper-hangings, furniture-stuffs, carpets, materials for curtains or garments, masks, candles, and artificial leaves, flowers, and fruits intended for sale.

This regulation does not apply to the use of arsenical mordants, or fixing-agents to be used for dyeing or printing of woven goods or textile fabrics. Yet woven goods and textile fabrics made in such manner are not allowed to be used for the manufacture of the articles named in Clause 1, if they contain the arsenic in a form soluble in water, or in such a quantity that in one hundred centimeters of the finished object there are more than two milligrams of arsenic. The Chancellor of the Empire is authorized to issue particular instructions as to the methods to be employed in determining the percentage of arsenic.

DISINFECTING AGENTS.¹¹

Dr. Cash has made a series of experiments on the disinfecting properties of chlorine, bromine, iodine, and sulphurous acid, using for such experiments the contagia of anthrax and of tubercle, and making control experiments on animals subjected to the same kinds of virus without the use of a disinfecting agent. He finds (as was expected) the degree of dilution of the agent, and the thoroughness of exposure to its influence, to be elements in the destruction of the morbid properties of the virus, and is able to arrive at certain provisional conclusions as to the relative potency of these agents. Employed in solutions made of a uniform strength, proportioned to their atomic weights, chlorine, bromine, and iodine do not show any remarkable differences, though iodine would appear to be the most, and chlorine the least potent. Dr. Cash gives preference to the use of these disinfectants, and of sulphurous acid in the form of solution, rather than in the form of gas, but if they have to be employed in the gaseous forms, he gives reasons for preferring sulphurous acid gas to the haloids. He

points out the consideration too often lost sight of in practice, that, as quantity of the disinfectant counts for so very much in the destruction of any disease-producing material, it is necessary to take account of the assimilation, by harmless material, of the agent designed to disinfect; wherefore the quantity of the disinfectant used must be proportioned to the amount of such other material, as well as to the amount of actual morbid matter to be destroyed.

DISINFECTION OF LIBRARY BOOKS.¹²

The danger of infection from the use of books from circulating libraries has received intelligent attention in England, and means devised for their disinfection. The principle on which disinfection is based is the vaporization of carbolic acid by heat, whereby it is claimed that its action is more potent. Heat is applied to the outer casing of an apparatus, which is fully under control, so that a temperature which might injure the books can be avoided. The heat employed is from 150 to 200 F., the books being subjected to this temperature for fifteen minutes and not injured by the process. The apparatus is said to be patented.¹³

CREMATION OF GARBAGE.¹⁴

A public crematory for the disposal of garbage has just been completed at Chicago, at an expense of about \$7,000. The structure is so located that wagons may be driven upon the roof and there unloaded, thus avoiding the expense of hoisting. The dimensions of the crematory are 53 x 91 x 28 feet. The chimney is in the centre, and is twelve feet square at the base, and ninety feet high. There are two garbage furnaces, one on each side of the chimney, each being provided with three coal furnaces for generating the heat. The interior of the garbage-burning chamber is quite large, 20 x 14 x 11 feet. The garbage and coal are received through ten openings in the roof, eight of which are for garbage. At a recent trial sixty-seven double wagon loads were incinerated between 9 o'clock A. M. and noon. This crematory is intended to receive material from a radius of one-and-a-half miles. If it proves successful five others will be built. The furnaces were found to have an excellent draught, and no odor was perceptible from the chimney.

REPORT ON PROGRESS IN SURGERY.¹

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

THE TREATMENT OF JOINT INFLAMMATIONS BY IRRIGATION AND INJECTION.

Hegar ⁶² (Hamburg) states that this method in the hands of a careful aseptic surgeon, is without danger. In most cases an anæsthetic is not required. The surface of the joint is shaved and disinfected, the cavity perforated, the contents, effusion-clots, etc., evacuated under pressure, and at once refilled with the antiseptic solution. It is then re-emptied and refilled till the wash water returns clear. Violent passive motion of the joint when full is liable to force the contents

¹ Concluded from page 353.

⁶² Deutsche Ztschr. f. Chir., 1887, xxvii, p. 143.

¹² Sanitary Record, Vol IX, p. 369.

¹⁴ Evidence that such a process would be entirely trustworthy is wanting.

¹⁴ Sanitary News, March 10 and 17, 1888, Chicago, Ill.

¹⁰ Deutsche Vierteljahrschrift für öffentliche Gesundheitspflege, 1888, Vol. 20, p. 174.

¹¹ Sixteenth Annual Report of the Local Government Board. Supplement. London, 1887.

through a ruptured capsule into the surrounding parts and thus cause fatal poisoning. After the irrigation the small puncture-wound is covered with an antiseptic dressing and immobilized eight to ten days by a splint. The dressing is continued till the wound is healed, and sooner or later, according to the severity of the case, passive motion completes the treatment.

The writer recommends the following points for puncture:

(1) Knee. Slight effusions, directly below patella; marked effusions, external border of quadriceps extensor tendon.

(2) Ankle. Between the external malleolus and the extensor longus digitorum tendon.

(3) Hip. Just anterior or posterior to the great trochanter.

(4) Wrist. Dorsal surface just exterior to extensor communis digitorum tendon.

(5) Elbow. At external or internal border of olecranon.

(6) Shoulder. A point just below the acromion. A large trocar is recommended for the large joints and a full-sized aspirating needle (Dieulafoy's) for smaller ones. For irrigation three to five per cent. carbolic or one-tenth per cent. sublimate solution, the latter to be preferred in cases of septic supuration. This irrigation causes distinct reaction regularly accompanied by a certain amount of capsule contraction which is unimportant if an excess is controlled by passive motion at the proper time, and is of great advantage in cases of relaxed capsule. For full details the reader is referred to Hegar's original article, which is a valuable contribution to the literature on this subject, since it is too extended to do more than mention here its salient points. Hegar has obtained excellent results from this method in cases of subacute and chronic hydarthron. Of one hundred cases of hydrops genu, ninety-nine completely recovered. In nine cases of acute hæmarthrosis of the knee, and seventy-five cases of fracture of the patella, the same was true. In eight cases of primary purulent arthritis, four recovered with a perfectly normal joint; two require an apparatus on account of relaxed ligaments, but have good motion, one, where passive motion was not permitted, recovered with ankylosis, and one died from collapse during an attack of delirium tremens.

In secondary or metastatic arthritis, as would be expected, irrigation does not give such prompt results in all cases as in simple primary synovitis. A good result can be obtained only in quite recent cases. Frequently only incision and drainage can rescue limb or even life. But irrigation is so much simpler and easier, that it is to be preferred where the joint capsule is still unruptured; incision and drainage being reserved for such cases where repeated attempts by puncture and irrigation are unsuccessful. Frequently in cases of gonorrhœal arthritis, the result was most satisfactory. In obstinate cases of acute rheumatic arthritis, also, this method seems equally valuable, as the reported cases show. Quite striking, also, were the results obtained in synovitis purulenta from acute epiphysitis and osteomyelitis. In conclusion, is a report of eighty-one cases of fungus arthritis where the although unmistakable signs of tuberculous disease existed, still the process had not advanced so far as to cause general joint supuration or rupture of the capsule. In thirty-three the treatment had no effect. In

forty-eight it gave more or less satisfactory results. Twenty-two patients were discharged free from pain, and not requiring apparatus, and fifteen with normal motion. Of the remainder, the inflammatory symptoms were relieved, but apparatus was necessary to enable the patient to continue his occupation.

REMOVAL OF MARROW AS PRIMARY TREATMENT OF ACUTE INFECTIOUS MYELITIS.

This method of treatment is again brought to notice by a report of Dr. Tscherning,⁵³ where it seems to have given satisfactory results. Assuming that the principal indication for treatment in these cases, as in all phlegmonous inflammations, is complete removal of pus, and also since the entire marrow of a bone can be removed without endangering its vitality and growth, the writer removes the suppurating marrow through two openings in the bone, large enough for the purpose, and thus drains the interior. If no distinct change exists on the surface of the bone the first opening should be made near the epiphyseal junction and so as to be most favorable in the usual position of the patient for the escape of pus. This treatment without, avoids as far as possible, the danger to life and the destruction of bone, resulting from the disease, with the least possible sacrifice of osseous structure. Of twelve cases reported, two only (myelitis of the tibia and recurrent osteomyelitis of the humerus), were in adults. In all was the function of the limb more or less preserved, and also where serous or purulent inflammation of the joint, epiphyseal separation and metastasis coexisted. Only in three-fourths cases did the affection assume the malignant type. In the others an early operation prevented any extensive disturbance. Tscherning would operate in all cases even in most malignant ones or where total separation of the periosteum has occurred, since the operative interference does not increase the danger and will generally give good results in a relatively shorter time.

IODOFORM IN SURGERY.

The question of the true action of this drug still continues to be the subject of investigation. Schnirer,⁵⁴ at Vienna, has contributed the results of his experimental work, done at the laboratory of v. Frisch, which supports the assertion that iodoform has no antiseptic action. In combination with an efficient germicide, its action not only as a protective covering, but also from its analgesic property and power to diminish wound secretion, is a valuable one in the treatment of wounds. Iodoform gauze is the form especially recommended.

Senger,⁵⁵ in August, 1887, published an exhaustive article describing his investigation of the action of iodoform with anthrax bacilli. He decided that the growth of these germs was checked by the drug; that the action was a chemical, not a mechanical one. He claims that in the animal organism iodoform showed a vigorous anti-bacterial action, which was, however, not an immediate one, but which was developed gradually, and after a certain time; also, that this action in living tissue was not a general one, but merely local. This opinion seems to coincide with that of the majority of recent investigators. Also where serous oozing threatens the integrity of a

⁵³ Schmidt's Jahrbücher. 1887, No. 11, 256.

⁵⁴ Wein. Med. Presse, 1887, xxviii, 37-38.

⁵⁵ Deutsche Med. Wchnschr., 1887, Bd. xiii, p. 726.

dressings, its power to diminish such secretions, is of practical advantage.⁶⁵

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⁶⁵ Jeffries. The Anti-bacterial Action of Iodoform, *Amer. Jour. of Med. Sci.*, 1888, Jan.

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Clinical Memoranda.

CANCER OF THE TONGUE. COMPLETE EX-TIRPATION BY A BLOODLESS OPERATION.¹

BY H. H. A. REACH, M.D.,
Surgeon to the Massachusetts General Hospital.

THE patient was a woman fifty-six years old, who had always enjoyed good health. Fifteen years ago she touched her tongue with lye and burned a small spot on the dorsum. Soon after, she noticed a thick white coating, which remained until one year and a half ago, when it disappeared, leaving a smooth red patch upon which could be seen a few pimples. Several months ago this spot showed signs of ulceration, and soon presented a deep cavity about an inch in diameter, in the middle of the organ, partially filled with exuberant granulations, at one point showing some attempt at cicatrization. There had been no pain nor hæmorrhage. At the time she entered the hospital, the base of the ulceration was indurated, irregular and appeared to involve about one-half of the tongue. At one point the growth presented a small slough. I was unable to obtain any evidence of specific disease, but to eliminate that question from the diagnosis, she was placed upon a mixed treatment for three weeks, with a negative result so far as any change in the growth was concerned. In the meantime she had begun to suffer from almost constant pain in the tongue, which radiated from it as a centre to the sides of the jaws and on each side of the face to the temporal region.

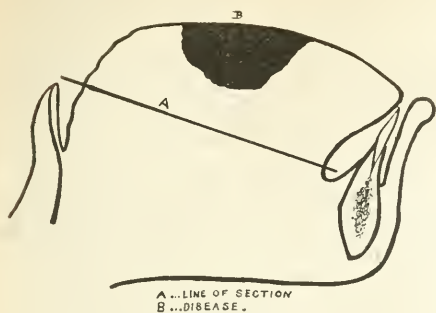
OPERATION.

The patient was thoroughly etherized, the lower jaw pried down and a wooden gag inserted, so as to give ready access to the tongue, which was drawn out of the mouth by double hooks. A chain écraseur was then carefully adjusted around the tongue in front of the epiglottis and slowly tightened; the tongue meantime held taut by the vulsellum forceps. As soon as the chain had begun to make a track for itself the screw was made to revolve once every two minutes by the watch. In exactly forty-six turns the section was complete. No hæmorrhage and very little pain followed the operation. She swallowed milk easily after recovering from the ether. She was discharged from the hospital at the end of two weeks, well and able to make herself easily understood.

Four months afterwards she was in excellent condition and had improved so much in her speech that she was able to act as one of a committee of ladies at a

¹ Read before the Boston Society for Medical Improvement, March 12, 1888.

fair, and to quote her words, "could make herself understood almost as well as ever."



Dr. W. W. Gannett has kindly made an examination of the specimen presented, of which the following is his report: The specimen is the tongue amputated at the base; total length 7 cm. In the middle of the upper surface is an ovoid ulcer measuring antero-posteriorly 3.5 cm., transversely 2.5 cm. The long diameter is in the long diameter of the tongue.

The ulcer at the edges is shallow, gradually deepening so that in the middle it has a depth of .7 cm. As the specimen was received in alcohol, no description of the appearance of the ulcer in the fresh state can be given.

The microscopic examination showed the base to be made up of many layers of flat epithelium with long, solid, finger-shaped masses of epithelium projecting far into the substance of the tongue. In many of these masses were well-marked onion-bodies. The deeper layers of the tongue around the new growth showed extensive round-cell infiltration. I think that all the new growth was removed.

Diagnosis: Flat-cell cancer of tongue.

HYSPADIAS.¹

BY H. H. A. BEACH, M.D.

A CASE ILLUSTRATING THE IMPORTANCE OF EARLY DIAGNOSIS.

THE case occurred in the practice of Dr. Hastings, of Warren, who detected the true condition of the parts, and to whom I am indebted for the opportunity of making an examination. The subject was sixteen years old, and appeared in girl's clothing, such as he had always worn. With the exception of a changing voice, a little hair on the upper lip, a slightly awkward and boyish gait, there was nothing to suggest the male gender. He was well developed generally, and in good health. There has been no sexual desire in either direction, and he did not seem to know that he was different from other girls, having been a regular attendant at a High School in company with others of that sex. He was bright, preferred the society of boys, and was the leader in all games, including baseball.

The breasts were undeveloped. Upon an examination

of the genitals, two well-developed testicles were found with the spermatic cord, easily demonstrated to the external abdominal ring on each side. The penis was short and imperfectly developed, and presented a well-marked hypospadias; the everted mucous membrane of the urethra was smooth, shining, and very sensitive. It was in such contrast to the adjoining scrotum, which projected on each side of the cleft in a way to easily suggest the appearance of a vulva in a young child, with the vagina between. The glans penis was fairly developed, with a depression where the meatus should be found. The urine was passed through two fistulous openings in the perineum; a third and adjoining opening permitted the discharge of fecal matter. There was no evidence of any external sphincter muscle. When the discharges were thin they were only partially controlled. There was fairly good control of the bladder. The pubic hair was well developed.

CASE OF VESICAL AND URETHRAL CALCULUS.¹

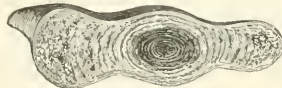
BY A. T. CABOT, A.M., M.D.

FRANK K., fourteen years old, entered the Massachusetts General Hospital, August 1, 1887. He had suffered from urinary symptoms for eight years. Some years ago he had a kick in the perineum, which was followed by great aggravation of his trouble, with much pain in the bladder and penis. Urination had, from the first, been very frequent, and there had been at times hæmaturia.

Recently the pain had been much more severe than before, and the water was voided with much straining as often as several times an hour.

The urine was pale, had a specific gravity of 1012, was acid, and contained a trace of albumen. The sediment, which was abundant, consisted of pus and mucus. The sound touched a stone seemingly in the urethra, just below the pubic arch. Examination by the rectum showed the stone to be a large one.

August 11, 1887. The boy was etherized, and a grooved staff was passed along the urethra below the stone into the bladder. Upon this as a guide, the usual incision for lateral lithotomy was made.



It was then found that the stone reached from the bladder forward through the prostatic and membranous, and well into the bulbous urethra.

An effort was made to push it back towards the bladder, so that its anterior end, which projected in front of the incision, could be brought out first. This did not succeed, owing to the firm grasping of the stone by the surrounding parts. Accordingly, the end which lay in the bladder was seized and drawn out through the wound, so that the whole stone was thus turned end for end, and dragged out of the urethra with some difficulty.

Another smaller calculus was then discovered in the bladder and removed. There was no hæmorrhage requiring ligation. The operation was followed by

¹ Read before the Boston Society for Medical Improvement, March 12, 1888.

¹ Read before the Boston Society for Medical Improvement, March 12, 1888.

no fever, and the pain, which had been so distressing before, was entirely relieved.

At the end of eight days the urine all passed by the urethra, and in sixteen days the boy was discharged well.

The small end of the stone to the right projected into the bulbous urethra; then comes the constriction, which was grasped by the compressor urethræ muscle. The largest part of the stone, in which the cross-section shows the nucleus, lay in the prostatic urethra, which was much distended by it. Behind this is another constriction, where the involuntary sphincter at the neck of the bladder moulded the calculus, and the portion to the left of this in the cut lay in the bladder.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M.D., SECRETARY.

MARCH 12, 1888. The President, DR. O. F. WADSWORTH, in the Chair.

DR. R. M. HODGES read a paper entitled
CONSTIPATION AND SOME OF ITS ACCOMPANIMENTS.

The following is an abstract.

Constipation is largely due to influences growing out of a high degree of civilization; among which are: senseless food and imperfect nutrition are predominant.

Constipation means not only infrequent and difficult defecation, but also incomplete defecation. The mischief occasioned by constipation, is chiefly owing to the mechanical effects of the "straining" which accompanies attempts at defecation. To get rid of straining is to deprive constipation of most of its detrimental consequences.

Fæcal retention from incomplete evacuation of the bowels may give rise to a form of blood-poisoning consequent upon an auto-infection of the system by the products of fæcal decomposition within the intestine, the symptoms of which are either acute or chronic, and not infrequently alarming. Such an occurrence is to be guarded against by watchfulness directed to indications of anemia, dyspepsia, and loss of appetite, especially in early childhood and in female adolescence, and by the careful observation of the temperature in cases of convalescence from sickness, or of those confined to their beds from any cause whatsoever. Phenomena of great suddenness and apparent severity may owe their origin to the rapid formation and quick absorption of intestinal poison. Four cases illustrative of this point were narrated.

The relief of constipation requires the bowels to be supplied with a sufficiency and proper consistency of feces to work the machinery of defecation. This can only follow the ingestion of a commensurate bulk of food; and by the intestinal contents being kept soluble by a proper consumption of liquid. Experience proves that hot water, pure spring water, aerated water, have nearly, if not quite as much, laxative efficiency as those which are called "medicinal."

The constipated often undertake to "regulate their diet," as they say, by avoiding those articles of food which are supposed to be "binding." What these are in any ordinary domestic dietary, it would be difficult

to enumerate with any well-founded accuracy. Articles taken as food because they are thought to promote movement of the bowels, do this to a trifling extent, if at all, and only when, eaten in considerable quantity, they leave a large amount of residue. Coarse and hearty food of any kind, leading to bulky feces, prevents constipation. Fruits owe whatever cathartic value they possess chiefly to the water they contain, or to a lavish consumption which leaves a superfluous and unassimilable residue behind. Dried fruits are distinctly constipating.

Sluggish action of the intestines should be unhesitatingly discouraged by drugs and by enemata, both of which must be administered in small doses, of the former so small as to be given twice if not three times daily. The regular use of laxatives is no worse a habit to contract than that of taking tea or coffee, or of using tobacco. Given directly after the bowels have been moved, enemata have the same diagnostic value in determining whether or not the rectum has been emptied, that the catheter, used immediately after micturition, has in deciding whether the bladder empties itself or not.

Sedentary habits do not, of themselves cause, nor does walking — leg-exercise — usually relieve constipation. Exercises in which another set of muscles than those of the lower extremities — the latter being, as a rule, already tired by the standing and walking of daily occupation — is brought into action, are far more likely to promote regularity in the movement of the bowels than the "constitutional" which are sometimes encouraged by medical advisers.

With invalids and enfeebled persons a longer period of rest between the acts of defecation is oftentimes demanded than is the case when a daily movement takes place.

DR. FRANCIS MINOT said: It is hardly necessary to say that we are all very much indebted to Dr. Hodges for his extremely wise and sensible remarks upon this subject: a subject with which we are all of us, perhaps, too familiar. In some respects, I should be inclined to differ a little from him in his views, but in general, I must say that he has given us a most excellent method of treatment of constipation of the bowels.

I think that constipation is by no means such a common trouble now as it used to be, owing to progress in knowledge of physiology, in modes of living, in diet, and in cooking; still we do see extreme instances of it.

I have at this moment under my care a lady who had been subject to constipation for several months before she came under my care. Under laxative treatment for two months, beginning January 1st, she had three or four large solid dejections daily, and it was not until about the first of this month that the bowels could be considered to be fairly relieved of this large accumulation. This state of things was accompanied by symptoms that were at one time alarming, intense pain in the abdomen, distension, and others, looking a little like peritonitis, but which passed away after the true condition of things was discovered.

I recollect well the late Dr. John Ware saying that a small pill of aloes or some other active cathartic, given once or twice or three times a day, could not do half as much harm as an enormous quantity of oatmeal or rye-meal or indian-meal pudding, which some people took every day of their lives in order to keep their bowels in decent condition. A well-known

physician of this city who died after a long illness, and who felt bound, I suppose, in conscience, to take the treatment that he had ordered for his patients, eat a plateful of oat-meal porridge every morning, saying that it was the most detestable thing he had to do.

A grain of aloes, three times a day, before meals, is one of the most admirable of all laxatives. I think, though, that prevention is better than cure, and that prevention is more easily obtained by a variety of food than in any other way. Many of us live in a stereotyped fashion; we eat similar things for breakfast, dinner and tea, with but little change. We have one thing Monday, and one thing Tuesday, etc. When a man dines out, he generally finds his bowels in a better condition the next day; partly because he eats more and partly because he has changed his diet. He gets things that he is not accustomed to get at home.

Regular systematic exercise in the open air, I don't mean fatiguing exercise, often has the happiest effect, which is increased by daily bathing. And yet we find people, especially women, who never touch cold water if they can help it.

In regard to medicines, I have spoken of aloes. I presume everyone has his favorite pill which he prescribes. I will simply allude to one old-fashioned remedy which I think is not worthy the neglect into which it has fallen in consequence of the great number of medicines which we have now, and that is the extract of butternut. This extract in a dose of from fifteen to thirty grains, is an admirable laxative and has the advantage of being cheap. It can be taken in the form of pills, or can be simply eaten. I saw a gentleman once who showed me a bucket which held, I suppose, six quarts or more, full of the extract of butternut, which he ordered from the Shakers, and he said it lasted him a year. In consequence of some paralytic trouble, he was bed-ridden, and suffered a good deal from constipation, but with this remedy he was able to get on very well.

I agree with Dr. Hodges that enemata should be small in bulk. They should rarely exceed one-half a pint, and less than that is enough. Plain water is often sufficient. Sometimes the addition of a little soap-suds "greases the ways," as Dr. Hodges has said. Perhaps, too, a little salt is a good addition.

DR. ABBOT said that he could add little to what had been already so well said on the important subject under consideration, but he thought gentlemen might be interested at this time in some experiments he had been making within a few days in the use of enemata of glycerine, which had been recently strongly recommended as a remedy for constipation in the *British Medical Journal*.

To thirteen Hospital patients under his charge—seven being cases of acute disease, six of chronic—twenty-four injections of glycerine had been given with successful results in all but three of the patients. In some of them the action of the bowels followed immediately, in most of them within fifteen or twenty minutes, in a few somewhat later, but in all within an hour. In twenty of the enemata the amount injected was one drachm, in the rest two drachms. Similar good results followed in two private patients, who had for a long time depended entirely upon cathartics or injections to move the bowels. In both of them the injection of two teaspoonfuls of glycerine caused an immediate and thorough evacuation, such as had rarely followed the

means they had usually employed. In all the cases the glycerine was administered without any addition as a vehicle. In only one instance was there the slightest discomfort in the use of this remedy, and in this it was transient.

As an explanation of its mode of action, Dr. Abbot was inclined to refer it to the local stimulating power of the glycerine, which started up a general peristaltic action very much as the common domestic remedy for constipation in young children—the introduction of a piece of soap into the rectum—produces an evacuation.

DR. C. F. FOLSON: It is interesting to see how much slight measures will do in some cases, especially in the case of young ladies who live in the country or the suburbs, where the walking is bad. They don't get regular exercise, and quite a number of cases that one sees have a sluggish circulation, and they generally tell you that they cannot take baths, because they feel chilly five or ten or fifteen minutes afterwards. I find a very large number of cases with this and other symptoms, of which neuralgia is a common one. By taking a sponge-bath, and then pulling the chest-weights, a light pair, such as can be obtained for ladies, for five or ten minutes, especially with the back toward them, so as to exercise the abdominal muscles, we can get surprising results.

I have also had a number of cases, the nature of which I stumbled upon by accident. One young lady had been troubled with intolerable constipation for a good many years. It was found that when anything happened that produced mental effort she had a movement easily; and in that class of cases, if you give them almost anything, the simplest thing possible, and tell them it is going to produce a movement at a certain time of day, the mind is fully fixed upon that fact, and you very often get it.

DR. H. H. A. BEACH: I have been very much interested in Dr. Hodges's paper, and can testify to the measures that he speaks of, and also that of Dr. Abbot. Speaking of oatmeal, there is a danger which I don't think is generally recognized, and that is the possibility of the impaction of a lot of oatmeal hulls, the hulls projecting from the surface of the faces and producing irritation. In a case that I recall there was a peritonitis, which went on to death, and at the autopsy, which I made (it was in a case of Alfred Hosmer, of Waltham; the patient had been sick about ten days, I think, and died of peritonitis) was found a small body, about the size of a peanut, consisting of impacted faces, with these oatmeal hulls projecting from the surface like the sharp points of a cockle-bur, and that had been impacted in the appendix, causing abscess and death. It was very easy to make that out. Of course, if that could occur in the small mass, it might in a larger one. Strained oatmeal does away with the danger, of course.

DR. JAMES AYER: Of course, oatmeal is laxative. In regard to Dr. Hodges's treatment by small, laxative pills after each meal, I suppose that it may be considered to be proved the best way in most cases of constipation.

I could mention the case of a gentleman to whom small doses of aloin were given after meals for several months; then a pill of aloin, nux vomica, and podophyllin. After a time they were given every other night, sometimes half a pill being sufficient. Finally the patient was almost well, but there was still some

constipated habit left — perhaps five operations a week, instead of seven — and he tried gluten suppositories, and is now using them with great benefit. I always supposed that it was from lubricating the lower part of the intestines.

Dr. HOMANS, 2d: Dr. Minot says that every one has his favorite cathartic pill, but I think there is one other treatment — the fluid extract — that is extremely good, and especially the fluid extract of cascara sagrada, which seems really to do what it is claimed to do; that is, it not only moves the bowels, but by a constantly decreasing dose. A very good article was read on that at the last meeting of the Massachusetts Medical Society. I have used it in two or three cases, and in every one I started with twenty drops at night. All three were cases of confirmed constipation, and at the end of two months the dose was reduced to five drops, and finally stopped entirely, with the result of curing the patient.

It seems to me that in a discussion of this sort it should be mentioned, because it does seem to work in the majority of cases. Dr. Farlow reported one hundred cases, I think, in which something like sixty per cent. were benefited.

Dr. P. C. KNAPP: Shortly after reading Dr. Farlow's paper I was treating a gentleman from Pennsylvania who had been a victim of constipation, with other troubles, for a considerable time, and his physician had been treating him with calomel, with the result that his bowels got in a bad condition. I started first with ten minims of the cascara, and afterward was obliged to increase it to fifteen, but in three or four weeks he succeeded in reducing the dose to three minims, which he continued twice or three times a day with the utmost satisfaction to himself. I tried it also during the summer with good results, finding, after a week or so, that I had to diminish the dose, and during the fall and winter I have used that to the exclusion of almost every other drug in the treatment of habitual constipation; and in most cases I have found that, starting with ten drops three times a day, in a couple of weeks the dose could easily be diminished or abandoned.

Dr. JOHN HOMANS: If I am not very much mistaken, Dr. Minot's favorite laxative is very largely used now under the name of "castoria." Castoria is the extract of butternut, I think. I affirm it with some hesitation, but that is my belief.

Dr. MINOT: I should like to ask if any gentleman can tell me if there is any essential difference between the fluid extract of cascara and the old-fashioned syrup of buckthorn.

Dr. JOHN HOMANS: I think it is a different drug. The cascara grows upon the Pacific slope; this grows somewhere else.

Dr. A. T. CABOT showed

A LARGE URETHRAL CALCULUS REMOVED BY OPERATION.¹

Dr. H. H. A. BEACH presented

A CANCEROUS TONGUE COMPLETELY REMOVED BY A BLOODLESS OPERATION.²

Dr. BEACH reported

A CASE OF HYPOSPADIAS ILLUSTRATING THE IMPORTANCE OF EARLY DIAGNOSIS.³

Dr. JOHN HOMANS presented

A CANCEROUS TONGUE,

and said: When I saw the notice of Dr. Beach's specimen, it occurred to me that I would bring up a case that I operated upon Saturday. It was a much more extensive disease than in his case. The patient is a medical man who graduated at college the year after I did, and his first symptom had appeared the middle of last December. Soon after that, noticing an ulcer upon the left side of the tongue, he consulted Dr. Langmaid, who put him on specific treatment, with no amelioration of his trouble, and in the latter part of February he came to the Hospital. The disease occupied the left side and middle of the tongue. It has been removed in two pieces, and you can see a section of it here. The disease had invaded the floor of the mouth, and had run up the pillar of the soft palate.

Being a medical man, he understood the gravity of the thing and the severity of any operation that was to be done, and there was a consultation of surgeons. Five were present: three advised doing nothing, and two thought that it had better be left to the patient to decide. He decided to have something done, and I removed the tongue last Friday, making an incision parallel with the jaw, and over the ramus and symphysis of the jaw, and then opening the mucous membrane, after stopping the bleeding, and pulled the tongue through the artificial opening thus made; but, the disease having involved the muscle, it would not come out, and I applied the écaraseur as far back as I could. The first time I took off three-fourths of the tongue, and having freed the floor of the mouth and the anterior muscles down to the hyoid bone with scissors, I then applied the écaraseur again just in front of the epiglottis, so that the entire tongue has been removed, and the muscles of the floor of the mouth. Then, with the scissors, I removed the pillar, and the disease, which had run up to the styloid process along the stylo-hyoid muscle and stylo-glossus, and the only portion that I didn't get out was in the pterygoid fossa, where I could not reach with the nail quite all the disease.

The operation was a pretty severe one, and I felt rather anxious about the Doctor, but found him, the next morning, up and reading the newspaper. I could understand perfectly what he said, although we have not encouraged his talking. He thinks he could swallow if we were to take the drainage-tubes out. He says that anything he takes runs out of the tubes. He is fed through a tube without much difficulty. The object of removing a disease so extensive as this is simply the relief of pain, which it does do for a time. I don't suppose there is any possibility of doing anything more than that.

Dr. Homans also showed a fatty tumor and an ovarian cyst.

Dr. BEACH also reported a case of

MULTIPLE FATTY TUMORS.

Patient a man, thirty years old. The first one appeared seven years ago, near the elbow; since then they have invaded the hips, thighs, and shoulders. Twenty-eight were removed, varying in size from that of a cherry to a hen's egg. Twenty-six of the wounds united by first intention. He was discharged from the Hospital, well, in two weeks.

¹ See page 375 of the Journal.

² See page 374 of the Journal.

³ See page 376 of the Journal.

TUBERCULAR JOINT-DISEASE.

DR. C. B. PORTER showed by card a foot which had been amputated for caries of the tarsus. The patient was a girl, twenty-two years of age. One year ago, there was a slight injury of the ankle. For six months she had been treated by a stiff bandage. An opening formed below the external malleolus, communicating with the joint. The disease steadily progressed, until amputation became necessary.

DR. J. C. WARREN showed by card a knee-joint which had been amputated for extensive tubercular disease, involving the entire joint. The patient was a boy, fifteen years of age. Family and personal history good. Three years ago, without injury, pain and swelling of the right knee-joint appeared. The disease became so extensive that excision was impossible, and the leg was amputated. The patient was greatly improved. Dr. Warren also showed a tubercular wrist which he had amputated. Seven months ago the man, aged fifty-three years, had sprained the wrist. The carpus was very extensively diseased.

UNUNITED FRACTURE OF TIBIA AND FIBULA; RESECTION AND WIRING.

DR. E. H. BRADFORD showed by card the portions of resected bone from a patient with the following history: Two and a half years ago, a boy now four and a half years of age injured his leg while alone for a moment on a hassock. The child was found crying from pain in the leg. The family physician called six hours later, but could discover no break. He was then absent from town for seven weeks. For two weeks the leg was swollen and painful, then the child crept about, but could not bear its weight upon the leg. Was treated with liniments. When the physician returned the child was examined under ether, and a fracture was found. It was put up in a felt splint. This was worn for four or five months. The leg being still ununited, a shoe, with an upright to support the leg, was worn until the present time.

March 8th, Dr. Bradford operated. A ligamentous false joint was excised with bone-forceps, and the ends sawed square. The divided tibia was wired with silver wire. The wound was closed with catgut sutures. It was dressed with iodoform powder and "corrosive gauze," over which was placed a plaster bandage from toes to knees, while the foot was held in correct position. Two wires were inserted in tibia, none in the fibula. The patient was doing well.

LARGE CYSTIC TUMOR OF THE BREAST.

DR. BRADFORD also showed a large cystic tumor of the breast which he had removed from a woman of eighty-two years. The cyst contained over a pint of bloody fluid. Microscopic examination of the solid portion showed the characteristic stroma and cells of carcinoma. The patient was doing well three days after operation.

TUBAL PREGNANCY; RUPTURED WALL; MIGRATION OF THE OVUM.

DR. JAMES A. DOW, of Cambridge, said: The history of the case that I can give will be very meagre indeed. On Thursday, last week, I was summoned to this patient, a woman whose age was thirty-three, who had borne five children, the last two years of age. Since that time she had menstruated regularly up to within two or three months. This history I obtained from the husband, and not from the patient, whose

condition was such that I could not get much history when I first saw her. Within the past six weeks she had menstruated, her husband said, three times. At any rate, she had had three periods of flowing, though, of course, it was a question so far as menstruation was concerned. In addition to this, during all her married life she had been so constipated as to go five or ten days without movement of the bowels, and just previous to this attack she had had one of her bad spells of constipation. On this day, Thursday, about eleven o'clock, while at stool, straining, she said something gave way, and caused her intense pain. She fainted, and one of her children ran into the next door and called a lady, who came in and found her upon the floor.

It was twelve o'clock when I arrived. I found her in a rocking-chair, almost pulseless; there was a faint pulse at the wrist. I put her upon the bed and gave her some stimulants, which improved the pulse a little. But nausea and vomiting had taken place previous to my arrival. She sank rapidly, being unable to swallow anything, and died an hour and a half after my arrival. The autopsy was made by Dr. A. F. Holt the following morning, and the specimen is in Dr. Fitz's possession.

DR. R. H. FITZ showed the specimen, and described it as follows: The uterus, soft and pale, with slightly thickened walls, measured internally three inches in length, and two inches at the greatest width. The lining membrane of the body was thickened, wrinkled, soft, and pliable, and of an opaque, gray color. At the upper right-hand corner of the uterus was an ovoid body, of the size of a small almond. It was contained between the peritoneal layers of the broad ligament. It projected posteriorly, and was in intimate contact with the uterus, but on the peripheral side of the round ligament. It had been opened longitudinally, and was hollow and empty. The wall was a third of an inch or less in thickness, and was lined with a shreddy material, in which dark-red blood-clots were entangled.

The microscopic examination of the shreds showed the structure of chorionic villi. There was no false membrane on the serous surface of the sac, nor fetal membranes within, excepting the villi already mentioned.

The uterine end of the right tube traversed the wall of the uterus, and was obliterated in the immediate vicinity of the sac. A probe passed through the fimbriated opening and along the tubular canal entered the cavity of the sac. The lining membrane of the tube throughout was tense, smooth, shining, and translucent, without thickening.

In the left ovary was a corpus luteum, three-fourths of an inch long and a half-inch wide.

Recent Literature.

The American Journal of Psychology.

The first two numbers of this new journal, which is edited by Prof. G. Stanley Hall, of Johns Hopkins University, have already appeared. Its object, as stated in its first number, is "to record the psychological work of a scientific, as distinct from a speculative character, which has been so widely scattered as to be largely inaccessible save to a very few, and of-

ten to be over'looked by them." It is therefore addressed to "teachers of psychology in higher institutions of learning; biologists and physiologists; anthropologists who are interested in primitive manifestations of psychological laws; physicians who give special attention to mental and nervous diseases; all others interested in the great progress recently made in so many directions in applying more exact methods to the study of the problems of human feelings, will and thought." Such a journal should be welcome to the members of these varied classes, for it is the first periodical in English which presents the new physiological psychology.

The original articles in the two numbers of the *Journal* which have thus far appeared, are, on the whole, valuable and interesting contributions to our knowledge. Lombard's paper on the knee-jerk has already received notice in these columns.¹ Hall and Motora, from careful study of sensitiveness to gradual pressure changes, have found that Weber's theory of a definite ratio of sensitiveness cannot be accepted without reserve, that sensitiveness is subject to marked individual variation. The other chief contribution to pure experimental psychology is Jastrow's careful consideration of the psycho-physic law. In the last number the physician's attention, however, will be sooner attracted to Donaldson's review of the relations of neurology to psychology, and Cowles's minute and thorough study of a patient with insistent and fixed ideas.

Of even greater value than the original contributions are the admirable reviews and wide-reaching retrospects of the various contributions to our knowledge of the mind and nervous system, which take up a considerable portion of each number, and, by themselves, are enough to commend the journal to the physician. Among them we must note the admirable and critical review of that mass of literature relating to psychical research, which has already reached so portentous a bulk. It may be added that, although the bulk of this review is much less than that of the subject reviewed, its weight is far greater.

Physiological psychology is only just beginning to clear itself from the fogs of metaphysical speculation, and, as yet, too little attention has been paid to it in this country. We trust that this new journal will be able to keep good its promise to avoid speculation and controversy, and we commend it to those of the medical profession — who should be many — who are interested in the scientific study of psychical processes.

Treatise on Human Physiology, for the Use of Students and Practitioners of Medicine. By HENRY C. CHAPMAN, M.D., Professor of the Institutes of Medicine and Medical Jurisprudence in the Jefferson Medical College of Philadelphia, *et cetera*. Philadelphia: Lea Brothers & Co. pp. 945, and 605 illustrations.

In this handsome volume, Professor Chapman has endeavored to satisfy "a want felt by students and practitioners of medicine for a systematic work representing the existing state of physiology and its methods of investigation, and based upon comparative and pathological anatomy, clinical medicine, physics, and chemistry, as well as upon experimental research" — at least, such is the purpose set forth in the preface. To this end the author has pleasantly de-

tailed the results of his extensive reading in sixty-five chapters, adding with great liberality clear explanatory illustrations of structure or of pieces of apparatus from the works of standard writers, as well as numerous drawings of his own dissections, and of special pieces of apparatus belonging to the extensive experimental equipment of his own laboratory. Probably no American work on physiology was ever more admirably illustrated, and perhaps none has given a more entertaining account of certain phenomena; for example, the electrical physiology of nerves and muscles, and the physical aspects of sight and hearing.

The most interesting feature of the book is one which finds no mention in the preface. We allude to the frequent statements about the historical development of the particular question under discussion. It is a good thing that the student should be reminded again and again that the physiology of to-day is not based merely upon the researches of last year or yesterday, but that other and often greater men have labored long and earnestly and cleverly, and that we of to-day are the heirs of their methods and of their knowledge. Fresh researches crowd upon us so rapidly in this "age of Centralblätter," as it may be called, that Professor Chapman has done a real service in reminding the student of the glorious past, from which he cannot separate himself if he would.

And yet it is just this interest in the older history of his specialty that has prevented the author from making his book what we wish it were — a book fully up to the times. The views of older writers and experimenters on many points are given with fairness and sufficient detail, but far too frequently, we look in vain for the great transformations which more recent and often more exact researches have brought, and which the student ought to find in such a volume. It is on this point that the book fails to satisfy us, and this is all the more regrettable because we find plenty of incidental information that Professor Chapman is not ignorant of these researches. This defect is met with in many places, but is especially prominent in the earlier chapters of the book — those on the "proximate principles" and on digestion.

We have delayed this notice longer than was originally intended, because we found so much that was valuable to offset many objections that came up as we read. The printer and proof-reader have made sad work of some names and words, but it would be unprofitable to note them now, or to make the few necessary corrections of the copious index.

—The Anthropometrical method of identifying criminals, originating from Paris, has, says *Science*, been adopted in the prison at Joliet, Ill. In addition to the photograph of the prisoner, accurate measurements of his height, the length and width of his head, the length of the left middle and little finger, of the foot, the fore-arm, the ear, the stretch of the arms, description of scars, the color of the eyes, and so on, are recorded; and it is thus possible to identify prisoners assuming false names with far greater ease than formerly. In the two years that the system has been in operation in Paris, 826 habitual criminals arrested under assumed names are said to have been identified. Besides the practical utility of the system, it amasses very valuable statistical data contributing to the natural history of the criminal classes.

¹ See this Journal, vol. cxviii, 538.

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CEREBRAL LOCALIZATION.

DR. BROWN-SÉQUARD has just published a paper in the April number of the *Forum*, on Cerebral Localization which, although written for the non-scientific public, is certainly worthy of consideration. It cannot be said that Brown-Séquard's views are new; they date back to the time of Flourens, and Brown-Séquard himself has been maintaining them for nearly twenty years, but not even Goltz has taken so pronounced a stand against the doctrines now so generally accepted. The question in regard to the functions of the brain is, as he puts it, "whether localization exists in aggregated masses of nervous elements, all endowed with similar functional powers, forming a special organ, a distinct, well-defined cluster of cells and fibres; or whether it exists in nervous elements disseminated in many parts of the encephalon." This last opinion, which he says is gaining ground, is the one which he maintains; the evidence in favor of the existence of cluster-localizations, either by exciting or stimulating such centres, he is strongly disposed to reject. Experiment has shown not only that identical effects can arise from the stimulation of widely different parts of the brain, but that each part of the brain can be destroyed without any cessation of function. A function may disappear, without any organic alteration of the elements in which it was located, due to irritation coming from some distant part, even the irritation of intestinal worms, which may cause paralysis, insanity, blindness, etc. "Every destruction or removal of a part, however small, of brain tissue takes away contributors to several or to many functions"; but the nervous elements remaining are evidently sufficient for the performance of these functions.

Brown-Séquard next considers the various functions which are supposed to have their seat in the brain, such as intelligence, consciousness, speech, memory, sensation, and motion. He begins by admitting the possibility of centres for perception and voluntary

motion in the spinal cord, and then advances the hypothesis that one-half of the cerebrum is enough for all intellectual functions; that the idea that one hemisphere presides over the sensibility and the voluntary movements of the opposite half of the body is erroneous. The intellect is situated in elements scattered through the gray matter of various parts of the cerebrum, but he seems less certain about the localization of consciousness; at least, he claims that considerable portions of both hemispheres may be destroyed without the least diminution of consciousness, but loss of consciousness may arise from inhibition from irritation in almost any region. In regard to the speech-centres his scepticism is even more pronounced. Finding that many aphasic patients have still the power of uttering one or two words or phrases, and that there is still considerable discussion about the exact localization of the different centres, owing largely to the want of differentiation between the different forms of speech disturbance, affirms that "aphasia is due to the propagation of an irritation arising from the diseased place or round it, going to the cells endowed with the mental power of speech, and stop their activity by inhibition. These cells must be scattered in most parts of the two hemispheres, as we find that considerable destruction can exist in either of them or in both without aphasia." In regard to sight, he notes the older theories as to the visual centres, and the dispute between Ferrier and Munk, and asserts that one-half of the brain is sufficient for perfect perception of visual impressions coming from the two eyes. There is no cluster-localization for sensation; lesion in any part of the encephalon can cause anæsthesia, each part may be destroyed without anæsthesia, and each hemisphere is sufficient for the two sides of the body. In regard to the motor centres, he takes equally sceptical ground. After division of the pyramidal tract he has obtained extensive movements from galvanizing the cortical centres on that side. A lesion can exist anywhere without paralysis, a lesion anywhere can produce paralysis, a very limited paralysis may follow complete destruction of all the motor centres, or complete paralysis may follow very limited destruction of these centres. Motion depends upon two sets of cells, one set used in the mental part of the operation, is disseminated through the brain, the other, used to put the muscles into movement, is in the basal ganglia and the cord; each half of the brain being sufficient for performing motion in both halves of the body. In conclusion he says, "What I consider true and established is, first, that the various mental and physical functions of the brain are localized in nerve-cells so arranged that those employed for the same function, instead of being agglomerated together, are scattered about in many parts; secondly, that each half of the brain contains centres for all the cerebral functions, physical or mental."

We have given Brown-Séquard's views somewhat at length, for, although they are not new, they take more positive ground against the generally accepted

theories than is held by any other physiologist of any note. They are substantially the views which Flouris maintained twenty years ago, before Fritsch and Hitzig published their epoch-making monograph. They were upheld by Vulpian and some of his pupils in the face of the discoveries of Fritsch and Hitzig, Exner, Munk, Ferrier, Charcot, Horsley, Tamburini, Luciani and Seppilli, and a host of others. With the exception of Brown-Séquard and his pupils no one is prepared to maintain them to such an extent to-day. Goltz can be ranked among the opponents of "cluster localization," but Goltz is far less pronounced in his views than Brown-Séquard.

In a subsequent article we will speak of the objections to his theories.

HYSTERIA IN THE MALE SUBJECT.

WRITERS on the practice of medicine have for the greater part of this century recognized the fact that hysteria sometimes occurs in the male sex, though carefully recorded observations become fewer and fewer as one goes back toward the beginning of the century.

Within the past thirteen years, numerous monographs on hysteria in the male have appeared in this country and in Europe. Among these we may specify the often-cited contribution of Dr. J. J. Putnam in the *American Journal of Neurology* (1884); the paper of Walton in the *Archives of Medicine* for 1883; that of Dr. W. P. McIntosh in the *Medical News*, Vol. XLVIII; another by Dr. Anson P. Smith in the *Medical Record*, Vol. XXII; the valuable and much-quoted treatise of Page "On Injuries of the Spinal Cord without Apparent Mechanical Lesion, etc." (London, 1885); five theses on the subject of male hysteria defended before the Paris Faculty, 1875-1880, of which one, by Klein, contains reports of eighty cases; later still, Batault's thesis, which gives a summary of over two hundred cases, and the treatises of Bourneville, Raymond, and Dréfus, of Oppenheim and Thomas. "This question of hysteria in the male," says Charcot, "is in some sort the order of the day" (*à l'ordre du jour*).

In Charcot's last volume on "Diseases of the Nervous System,"¹ he devotes seven chapters to the study of this subject. In the first two (*Leçons*, XVIII and XIX) he shows that hysteria in the male sex is not as rare as was formerly thought. Briquet's five per cent. (that is, of one thousand cases, he reckoned fifty as cases of hysteria in the male subject) is probably an under-statement, rather than an over-statement. He sets forth the rôle of traumatism in the development of this affection. Many of those peculiar nervous states grouped under the head of "Railway Spine," and which Page thinks might more appropriately be called "Railway Brain," whether occurring in man or in woman, he regards as simply hysteria, nothing more.

The tenacity of the hysterical stigmata in grave cases is next touched upon, the affection in the male being especially remarkable by the permanence and tenacity of the symptoms which characterize it. The details of three typical cases of hystero-epilepsy in the male are presented, and the striking resemblance between these and the corresponding cases observed in the female is pointed out.

In following chapters, several interesting cases of brachial monoplegia, clearly hysterical in their nature, though following traumatism, are given. In one of these patients, besides the brachial monoplegia, which pertained to sensation and motility and the muscular sense, there was diminution of hearing, of smell, and of taste on the same side, contraction of the visual field, monocular polyopia, anæsthesia of the upper pharynx, and well-defined hysterogenous patches. The production of monoplegia of a member by hypnotic suggestion is shown (Chap. XXII); similar means are employed to cause it to disappear. These hysterical paralyses are sometimes limited to a part of a member, leaving intact the rest of the limb, in which sensation, motility, and tendinous reflexes are normal, as in Charcot's patient, Greuz, where, with complete paralysis above the wrist, most of the hand was normal in respect to innervation.

One point is clearly brought out by Charcot's observations: despite the high expectations that have of late been entertained respecting the utility of hypnotization as a therapeutic means in these obscure and often most intractable forms of paralysis, and despite the fact that some remarkable cures thereby affected have been recorded by Bernheim, Richet, and others, there seems really to be but a very limited number of cases, either in the male or female, that are actually amenable to hypnotic influence, or to any permanently beneficial results therefrom. It is easier, as Charcot shows, to produce at will in the hypnotic subject all the phenomena of hysterical paralysis (loss of motility and sensibility, analgesia, abolition of the muscular sense and of the tendinous reflexes) than to unmake a paralysis already existing, and the expression (it may be) of a dynamical cortical lesion of long standing.

Two chapters in the work alluded to are devoted to the consideration of hysterical coxalgia in the male subject, as illustrated by a remarkable case which is shown to be quite in harmony with the observations of Brodie, Coulson, and others respecting hysterical affections of the joints.

The subjects of hysteria are not always persons of seemingly delicate, "neuropathic" organizations, and some of Charcot's patients appeared to be remarkably robust. The same may be said of one of Dr. Joseph's patients (Landeck, Germany), as reported in the *British Medical Journal*, August 29, 1885. This patient "was a robust horse-dealer," father of a large family. He "caught cold," and aphonia followed. A little later clonus was complained of, and then he began to have convulsive attacks, without loss of con-

¹ *Leçons sur les Maladies du Système Nerveux*, t. III.

sciousness, but with loss of the power of speech. He had "globus" and "hyperæsthesia over the interscapular region, the lower cervical and upper dorsal vertebrae, but not in the iliac region." One of McIntosh's patients, characterized by "general hysterical hyperæsthesia," was a robust negro, fifty years of age.

The subject of hysteria in soldiers has lately been made the subject of an interesting monograph by Emile Duponchel, and Dr. A. T. Ozeretskovsky describes in the *Russian Medical Review* a whole series of cases of hysteria occurring in soldiers, presenting nearly all the phenomena usually associated with this affection as it occurs in females — dumbness, deafness, deaf-mutism, various disturbances of vision, spasms and paralyses, troubles connected with micturition, joint trouble, hysterical hyperpyrexia, etc. Predisposition and heredity played a large part in the etiology, and in some instances there was injury or "shock." The treatment of the hysterio-epileptic cases was always unsuccessful, neither hydropathy, electricity, nor narcotics appearing to exert any influence over the frequency or the severity of the attacks.²

Of late, the subject of hysteria in boys has attracted considerable attention. Dr. Savage has recorded a well-marked case in the *Journal of Mental Science* for July, 1885. At the meeting of the Cambridge Medical Society, June 1, 1883, as reported in the *Lancet*, Drs. Bradbury and Ingle reported cases in which, in quite young boys, the usual hysterical stigmata were pronounced.

Dr. H. Schmidt, of Bremen, has made a careful study of the subject of hysteria in children, and from several cases occurring under his own observation, in addition to the information gained from an examination of the literature of the subject, he draws the following inferences: (1) Cases of marked hysteria occur in children of both sexes; (2) hysteria is, however, a rare disease in the earlier years of life; (3) the basis of hysteria may be either anæmia or chlorosis, or "acquired nervousness"; (4) mild cases are amenable to treatment by a merely psychical regimen. The main therapeutical indication usually consists in the improvement of a vitiated constitution.³

FRACTURE OF THE STERNUM REDUCED BY A COUGH.

THE JOURNAL publishes to-day two very interesting cases of fracture of the sternum from very widely separated portions of the country, in which the displaced fragments were replaced accidentally by a cough. In the first, attempts at replacement were futile, and were for the time abandoned, when the cough fortunately

restored the symmetry of the bone. In the second, attempts were still in progress, but without result, until the cough was accidentally added, when the fragments snapped into place. This result has also occurred in a case reported by Dubroca, as seen by him in the service of M. Polaillon. Whether a cough instituted for the sake of effecting such a restoration would prove equally effectual in future cases can be determined only by actual trial when cases present themselves, but it will doubtless occur to every one who reads these two accounts that a procedure which may prove a very valuable adjuvant in these cases has been neglected.

The force exerted from within outward by a cough is in common use in the examination of hernia, and is, in reality, well understood. That the force is a great one is readily seen when we consider that it sometimes is sufficient to break ribs. Dr. Gillette gives, in the *Union Médicale* of June 27, 1876, a case of a man of fifty-six, emaciated to the last degree by pulmonary tuberculosis, who sustained a fracture of the eleventh rib of the left side during a severe fit of coughing. The *Medical Times and Gazette* of November 3, 1860, quotes the case of a patient of M. Piffard who fractured a rib during a paroxysm of cough, "the result of a cold," though the patient was robust, and, save for the cold, in perfect health. The cough certainly deserves a trial in future cases of fracture or dislocation of the sternum before such cases are abandoned to nature, or the more radical operative means are resorted to.

MEDICAL NOTES.

—"The Story of a Star" is the title of a new novel by Dr. Benjamin Ward Richardson, of London, the prolific medical writer and author of the *Asclepiad*. The scene of the story is in the second century, and the plot deals with the final efforts of the Hebrew people for national independence.

—The result of a trial just concluded at Canton, N. Y., before Judge Kellogg, will have a salutary effect in checking the sale of one class of adulterated food. Two men, named Moon and Ackerill, were arrested for selling adulterated baking-powder in violation of the State food adulteration act. The indictment was for both for selling baking-powders that were inferior, adulterated, and injurious to health by reason of being made from alum, and for selling them under pretence that they were a wholesome cream of tartar baking-powder. A stubborn defence was made, the claim being set up that baking-powders were not articles of food, and that the powder the defendants were selling, which was known as Gillett's, was a standard article of trade, and that alum baking-powders inferior to it, like Davis's and others, were being sold by other dealers in the same town without complaint. The court held that baking-powders were articles of food within the meaning of the law, and the jury found the defendants guilty upon all the charges.

² Dr. Jaansen reports several remarkable cases of hysteria and hysterio-epilepsy occurring among Dutch soldiers. See *Boston Med. and Surg. Jour.*, Vol. CXVII, p. 541.

³ *Jahrb. d. Kinderheilkunde*, April 5, 1880 (cited in the *Medical Record*, Vol. XXIII, p. 291).

The case has attracted much attention from being the first brought under the New York State food adulteration act against dealers in alum baking-powders. The result of the trial is to class such baking-powders as adulterated articles of food, and to make their sale illegal. There are many alum baking-powders put up in cans, under some name or brand, in addition to those sold in bulk, the sale of all of which cautious dealers will probably be unwilling to continue.

BOSTON AND NEW ENGLAND.

—Another gift of \$1,000 has been received by the Boston Medical Library Association towards the payment for the land recently acquired by it for its proposed new building. Owing to an inadvertence, we neglected to chronicle the fact, a few weeks ago, that Dr. Oliver Wendell Holmes had presented his entire medical library to the Association.

—From the quarterly report of the Hospital Cottages for Children, at Baldwinville, Mass., of which Dr. Everett Flood is Superintendent, it appears that, of the 42 patients, 26 are epileptic, and that under treatment, dietetic and medicinal, an improved condition is considered to have followed in every one of these cases, and in some the improvement reported seems to have been very remarkable. Of the epileptics, 11 are girls, and 15 boys. The other cases are as follows: 1 eczema, 1 paraplegia, 4 spinal caries, 1 feeble-minded, 2 chorea, 1 rachitis, 4 hip-joint disease, 1 infantile paralysis, 1 knee-joint disease. The cases having a discharge coming from carious bone, of which there are 4 (3 spinal, one hip), are reported to have all done unusually well; and one, the hip case, for whom but little hope could be entertained, has, under the combined advantages of an immovably fixed joint, the pure air, and plenty of koumiss, made a remarkable gain.

NEW YORK.

PREVENTION OF CHOLERA.

—Mayor Hewitt has addressed a communication to the chairman of the Committee on Finance of the State Senate respecting the future management of the quarantine station, in which he proposes that if the legislature is unwilling to appropriate a sufficient amount to insure its thorough efficiency, the charge of the establishment shall be transferred to the New York City Board of Health. In the course of his letter he says: "I invite your immediate attention to the subject because during the last summer there was very great danger of an outbreak of cholera in this port, and it is generally expected that, according to past experiences, there will be a repetition of the disease this year. The quarantine establishment is in a very dilapidated condition, and the appliances are totally inadequate to deal with the danger of such an outbreak as we fear. Under the circumstances I feel it to be my duty to impress upon the legislature the necessity for action, and for the appropriation of a sum of money sufficiently large to put the establishment in a thoroughly efficient condition. It is es-

timated that about \$200,000 will be required for this purpose. This sum, although large, would be trifling compared with the pecuniary damage that would accrue to the business of this city and this State in case the cholera should be allowed to spread. I trust there will be no difficulty in having it provided in the usual manner by a State appropriation; but if it is deemed wiser to transfer the responsibility to the city of New York I am sure that public opinion here will justify the expenditure of any reasonable amount of money in order to protect the city from irreparable losses of life and property inseparable from the spread of this disease. The Board of Health of this city is so situated at the present time as to be able to take charge of the establishment, and to give it such direction and supervision as will protect the public from disease.

In case the legislature should see fit to transfer the quarantine establishment to municipal control it would be necessary, of course, that the fees should be paid into the city treasury, and there ought to be vested in the Board of Health sufficient power to recoup the expenditure which will be necessary in order to put it in good working order. As to how this result is to be accomplished I care very little, but the necessity for action is so great, and the feeling in this community so strong that I cannot too earnestly urge upon the attention of your committee the necessity for some action which will be adequate to meet the difficulties in the situation."

—The Linnean Society has organized a movement to erect a suitable monument to Audubon, the naturalist, in Trinity church-yard where he lies buried. It is to be in the form of an ancient Irish cross, which will be ornamented with animals and birds, and the bust of Audubon in relief.

BENJAMIN F. DAWSON, M.D.

—Dr. Benjamin F. Dawson died April 3d, of diabetes, from which he had suffered for several years. He was forty-four years of age, and a graduate of the College of Physicians and Surgeons, of New York, in 1866. While a student of medicine he served as acting assistant surgeon in the United States army during the year 1865. After graduation he practiced in his native city, devoting himself especially to gynecology and diseases of children. He soon won for himself an enviable reputation in these departments, and among the positions which he held at different times were the following: Lecturer on the Diseases of Children, in the Medical Department of the University of the City of New York, Professor of Gynecology in the New York Post-Graduate Medical School and Hospital, Assistant Surgeon of the Woman's Hospital, Attending Physician to the New York Foundling Asylum, and Pathologist to the New York Infant Asylum. He was also the founder of the New York Free Dispensary for Sick Children, and by his own efforts raised the funds by which this institution was maintained for a long series of years. He was a skilful and successful operator, and his powers of original invention were of a high order.

His ovariectomy clamp was used by gynecological surgeons of the highest eminence, and the Dawson battery is still regarded by many operators as the best in use for the galvano-cautery. Among his original operations one for prolapsus uteri has proved very successful.

Dr. Dawson made frequent and valuable contributions to medical literature, and was for many years an honored member of the New York Obstetrical Society and the American Gynecological Society. In 1868 he founded the *American Journal of Obstetrics and Diseases of Children*, and for six years continued to be its chief editor. In 1871 he edited the second American edition of Barues's *Obstetric Operations*, published by the Appleton's, to which he added considerable original matter. About three years ago he gave up his professorship at the Post-Graduate Medical School, which he had filled with distinguished ability, and retired from active practice on account of ill-health. Socially, as well, Dr. Dawson was a man of brilliant qualities, and he was widely known and esteemed.

—The agent of the Mediterranean line of steamers to which the *Britannia*, which recently arrived in port with small-pox on board, belongs, has cabled to the company in Europe not to allow any passengers to sail for America until they have been vaccinated.

PHILADELPHIA.

—The great event of the past week was the public dinner tendered Professor D. Hayes Agnew by some of his professional friends in commemoration of the fiftieth anniversary of his graduation in Medicine. Professor Da Costa was chairman of the committee, and presided at the dinner, which was given in the foyer of the Academy of Music on the 6th inst. Among the two hundred or more who were present were many prominent members of the profession from other cities as well as from our own. L. A. Sayre, Hunter Maguire, J. S. Billings, C. R. Agnew, J. Ford Thompson, R. F. Weir, Chas. C. Lee, and Alfred Stillé, Weir Mitchell, Joseph Leidy, William Pepper, J. G. Morton, S. W. Gross were observed around the handsomely-decorated table. The guests were seated at seven o'clock, after grace by Rev. J. S. MacIntosh. After the *ménu* had been rendered free justice, the chairman proposed the health of the honored guest of the evening, and gracefully referred to leading events in his career, and especially to the services rendered by him when summoned to the bedside of the wounded Chief Magistrate of the nation.

When the applause which greeted the rising of the venerable professor had subsided, Dr. Agnew said that had it been the pleasure of his friends a less conspicuous demonstration of their good-will would have been more in consonance with his feelings and taste. He regarded it as a great distinction for any man, in whatsoever sphere of life he may move, to win the confidence and esteem of his fellows. This mark of respect tendered him this evening was profoundly realized and appreciated. He had come to this city thirty-five years ago in order to gratify his taste for

studying anatomy. The scene of his early labors was the Philadelphia School of Anatomy, where so many who afterwards became leaders in the profession had worked — Godman Webster, Joseph Pancoast, Allen, Ganetson, Henry H. Smith, Ellerlie Wallace, Francis Gurney Smith — it was a veritable school of the prophets. He continued: "Here summer and winter, night and day, with rarely a vacation. I studied the mysteries of this wondrous frame, lovingly and with enthusiasm, and notwithstanding the opposition of the two great medical schools, drew around me a class that was only limited to the capacity of the building. These were the happiest days of my life. The anatomical odors of those dingy old rooms were to me as sweet as those of Araby. I loved it so that when I was induced to become Demonstrator of Anatomy in the University of Pennsylvania I did so with reluctance. It was here that I formed the friendships which, like hooks of steel, have bound me to men of every part of the country, and not a few across the sea.

"To Dr. Henry H. Smith and Dr. John L. Ludlow more than to all others combined, are we indebted for the restoration of clinical instruction in the Philadelphia Hospital. For twelve years, save a short interregnum, Dr. Smith and myself taught surgery in the hospital. For eleven years I was on the staff of the Pennsylvania Hospital, until the inauguration of a policy that compelled me to resign. I have never hesitated to turn my back on any proposition or place, no matter how tempting, the acceptance of which would compel a surrender of my convictions. It has been my fortune to fill many places of dignity in the profession, but the principal satisfaction it gives me is that I never schemed or planned for any of them. When the end shall come, I shall feel that I have had more than I deserved, and among the choicest recollections will be the memory of this assemblage."

Dr. Sayre made a characteristically witty speech in reply to the toast of "Our Visiting Physicians," and Dr. Weir Mitchell read the following poem, written for the occasion:

MINERVA MEDICA.

A golden wedding; fifty earnest years

This Spring-tide day from that do sad'st part,
When, 'mid a learned throng, one shy grave-lad,
Half-conscious, won the Mistress of our Art.

Still at his side the tranquil goddess stood,
Unseen of men, and claimed the student boy,
Touched with her cool sweet lips his ruddy cheek,
And bade him follow her through grief and joy.

"Be mine," she whispered in his startled ear.
"Be mine to-day, as *Paré* once was mine;
Like Hunter mine, and all who nobly won
The fadless honors of that shining line.

"Be mine," she said, "the calm of honest eyes,
The steadfast forehead, and the constant soul,
Mine the firm heart on simple duty bent,
And mine the manly gift of self-control.

"Not in my service is the harvest won
That gilds the child of barter and of trade;
That steady hand, that ever-pitying touch,
Not in my helping shall be thus repaid.

"But I will take you where the great have gone,
And I will set your feet in honor's ways;
Friends I will give, and length of crowded years,
And crown your manhood with a nation's praise.

"These will I give, and more; the poor man's home,
The anguished sufferer in the clutch of pain,
The camp, the field, the long, sad, waiting ward,
Watch for your kindly face, nor watch in vain:

"For as the sculptor years shall chisel deep
The lines of pity 'neath the brow of thought
Below your whitening hair the hurt shall read
How well you learned what I my best have taught."

The busy footsteps of your toiling stand
Upon the noisy century's sharp divide,
And at your side, to-night, I see her still,
The gracious woman, strong and tender-eyed.

O stately Mistress of our sacred Art,
Changeless and beautiful and wise and brave,
Full fifty years have gone since first your lips
To noblest uses pledged that forehead grave.

As round the board our merry glasses rang,
His golden-wedding chimes I heard to-night;
We know its offspring: in a hundred towns
His pupil children bless his living light.

What be the marriage-gifts that we can give?
What lacks he that on well-used years attends?
All that we have to give are his to-day, —
Love, honor and obedience, troops of friends.

An ode was also read by Dr. Thomas Wistar, which was a pleasant feature of the evening.

It is intended to hold an Agnew Jubilee on the 24th inst., at the University of Pennsylvania, in order to allow a larger number to participate than could be seated at a formal dinner. A portrait of Professor Agnew will be painted and placed in the Hall of the College of Physicians.

— John B. Hamilton, Supervising Surgeon-General of the Marine Hospital Service, delivered the annual oration this year before the Alumni Association of the Medico-Chirurgical College on the 5th inst. A reception was given in his honor on the same evening. The seventh annual commencement was held on the following day, twenty men receiving the degree of doctor in medicine.

— The sixty-third annual commencement of the Jefferson Medical College was held last week, a class of 188 students being graduated. Prof. Austin Flint, of New York, delivered the annual oration before the Alumni Association of the Jefferson College, and was tendered a reception at the Bellevue later in the evening.

— The following minute has been sent to the city authorities:

Whereas, The College of Physicians of Philadelphia have learned that it is proposed to furnish the citizens of Philadelphia with illuminating gas, consisting of two parts of coal-gas and one part of water-gas, a mixture of which would probably contain at least about fifteen per cent. of carbonic oxide, and

Whereas, In the opinion of this College, the use of any illuminating gas which contains more than ten per cent. of carbonic oxide would be attended with very grave risk to the health and life of the citizens of Philadelphia; therefore be it

Resolved, That the Mayor of Philadelphia is hereby petitioned that, if in his opinion it be necessary to use water-gas in connection with illuminating gas, great care be taken to render it certain that the mixture shall at no time contain more than ten per cent. of carbonic oxide.

Miscellany.

MULTIPLE SALIVARY CALCULI.

THE *British Medical Journal* reproduces from the "Proceedings of the Stitchizry Medical Society," Vol. I. 1887, p. 68, a report by Dr. Nikolai J. Moiseff, of the case of a retired major-general, aged seventy, who sought his advice on account of incessant profuse salivation, pain on deglutition, and sublingual swelling of several years' standing. An oblong, hard elevation was found along the course of Bartholin's duct, which, even on slight pressure, gave the finger a distinct grating sensation. The duct was considerably distended along its whole course, and contained three salivary calculi lying in close contact. The nearest and smallest concretion, of the size of a big pea, was easily removed with forceps, but the other two could be extracted only after slitting up the duct, since they were considerably larger, especially the deepest one, which measured two centimetres in length and one in breadth, and, in addition, was intimately adherent to the gland substance; it resembled a bird's bill in shape. When dry it weighed 2.2 grammes, and consisted of a comparatively hard and compact nucleus, with a spongy, friable outer capsule. The smallest calculus was of pyramidal form, of spongy consistence, and grayish-yellow color; while the middle one was quadrangular, with rounded angles, and of a distinctly laminated structure. The total weight of the dried calculi was thirty-eight grains. The wound healed well in a week. Dr. Moiseff has been unable to find another recorded instance of multiple calculi simultaneously present in the same salivary duct.

THE DIRECTION OF SCRATCH-MARKS MADE BY THE NAILS ON THE SKIN.

THE medico-legal importance attaching to the direction of nail-scratches on the skin was illustrated in the case of Pranzini, the Parisian murderer, whose crime and its detection are thus described by the *Dublin Journal of Medical Science*:

The murder occurred at the Rue Montaigne, Paris, and the victims were a celebrated *demimondaine*, who, along with her maid and maid-servant, was found murdered in their apartments under circumstances of great cruelty. Their throats had been cut after a severe struggle, and their bedding and the walls of the apartments in their vicinity were copiously bespattered with blood. The unfortunate chief victim was the possessor of jewelry and other valuables to the extent of some thousand pounds, presumably the motive of the murder. These, however, were in an iron safe, and as the murderer, who was evidently single-handed, could neither open this nor carry it away, he had to leave without the wages of his crime. The key was subsequently found concealed in a wardrobe. A man named Pranzini, a follower of the victims, was arrested upon suspicion, but the closest examination of his clothes, both those which he had worn on the evening of the crime, and those found at his residence, showed no trace of blood. This was relied upon as a strong point in the defence, but Dr. Brouardel, the *Médecin légiste* engaged in the matter, recalled the fact that in the next apartment was found a toilet-stand, upon which was a large basinful of ensanguined

water, as if some person stained with blood had washed therein. As none of the three victims had presented the appearance of having done this, Dr. Brouardel conceived the idea that the murderer had, on entering the apartments, undressed himself, had committed the crime in a state of nudity, had then carefully washed himself of its traces, and had finally, all being completed, resumed his clothes, of course free from all sanguineous stains. Dr. Brouardel now demanded from the *juge d'instruction* an authorization to examine Pranzini totally undressed, and on this being accomplished, found a long, tearing scratch (*estafilade*) extending down the front of his right thigh. Interrogated upon this, the prisoner said that he had been attacked by a severe itching in the part, and had torn himself in relieving it. Being invited to repeat the gesture, he did so, scratching himself from the knee towards the body. when the medical expert showed that the tear had been produced by nails, or at all events, some sharp body, acting from above downwards in the direction of the knee, as was shown by the pointed fragment of epidermis projecting upwards from the lower end of the wound. The expert's hypothesis is that when the assailant approached one of his victims, with the weapon in his right hand, and with his right side next to her, she inflicted the injury with her nails. Questions of blood-stains on clothing have frequently formed important evidence in murder trials; but the present is probably the first

instance of an ingenious plan having been adopted to escape clothing-stains, and of its being defeated by an accident developed by the acuteness of the medical expert. Pranzini was convicted, without extenuating circumstances, and was sentenced to death by the guillotine.

Correspondence.

THE DIAGNOSIS OF ADENOID VEGETATIONS.

Boston, April 6, 1888.

MR. EDITOR.—In Dr. Hooper's most excellent paper on Adenoids in Children, recently published in this *Journal*, I find no mention of a symptom which is sometimes of value, and which has been quite noticeable in some of my cases, and that is, the impossibility of blowing the nose. This sign can, of course, have no significance in very young children, but after the age of five or six years most children learn by themselves, or can be taught, to blow the nose fairly well. Where the post-nasal space is filled with these vegetations the child is unable to force a current of air out through the nose, and it is often necessary for the physician to wipe out the nose anteriorly with cotton wool on an applicator to get a look at the inside of the nose, which had been filled with secretion, which the child had been unable to remove. The ineffectual attempts of the child to blow the nose when the supply of air from behind is cut off have been to me of special diagnostic value in children over five or six years.

Yours truly,

JOHN W. FARLOW, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING MARCH 31, 1888.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Typhoid Fever.	Diph. & Croup.	Scarlet Fever.
New York	1,481,920	768	294	15.73	23.92	.78	7.54	3.38
Philadelphia	993,801	417	133	9.12	12.48	1.44	2.64	.72
Brooklyn	745,108	—	—	—	—	—	—	—
Chicago	725,000	—	—	—	—	—	—	—
St. Louis	423,000	—	—	—	—	—	—	—
Baltimore	417,000	179	66	11.97	11.40	.57	1.71	1.14
Boston	400,000	198	61	11.22	23.97	—	6.12	.51
New Orleans	242,750	—	—	—	—	—	—	—
Buffalo	225,000	—	—	—	—	—	—	—
Washington	210,000	107	39	14.88	22.32	.93	1.86	1.86
Pittsburgh	210,000	71	29	9.87	31.02	4.23	—	—
Montreal	185,257	—	—	—	—	—	—	—
Milwaukee	170,000	74	42	13.54	6.75	1.35	4.05	1.35
Providence	121,000	—	—	—	—	—	—	—
Richmond	100,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,000	29	8	24.15	13.80	10.35	3.45	—
Charleston	60,145	24	5	4.16	4.16	4.16	—	—
Portland	40,000	10	2	10.00	10.00	10.00	—	—
Worcester	68,383	24	7	12.48	20.80	—	4.16	—
Lowell	64,051	30	10	26.66	13.33	—	3.33	—
Cambridge	59,660	31	9	9.69	12.92	—	13.23	3.23
Fall River	56,863	35	15	14.30	17.16	2.86	2.86	—
Lynn	45,861	18	2	11.11	11.11	—	—	—
Lawrence	38,825	17	6	11.76	5.88	—	5.88	5.88
Springfield	37,577	—	—	—	—	—	—	—
New Bedford	33,393	14	3	14.28	7.14	—	14.28	—
Somerville	29,992	14	3	14.28	14.28	—	—	14.28
Salem	28,084	13	5	—	—	—	—	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	16	0	6.25	18.75	—	—	—
Taunton	23,474	4	1	25.00	—	—	—	—
Haverhill	21,795	7	0	—	14.28	—	—	—
Gloucester	21,713	14	4	28.56	14.28	—	—	14.28
Brockton	20,783	10	4	10.00	10.00	—	10.00	—
Newton	19,759	3	0	—	—	—	—	—
Malden	16,407	5	2	—	—	—	—	—
Fitchburg	15,375	4	2	25.00	25.00	—	—	—
Waltham	14,609	5	0	20.00	20.00	—	20.00	—
Newburyport	13,716	7	2	—	28.56	—	—	—
Northampton	12,896	—	—	—	—	—	—	—

Deaths reported 2,148: under five years of age 754; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 279; acute lung diseases 386; consumption 317; diphtheria and croup 97; scarlet fever 41; measles 25; typhoid fever 23; diarrhoeal diseases 25; whooping-cough 24; cerebro-spinal meningitis 17; erysipelas 10; malarial fever six, small-pox five, puerperal fever four. From measles, Baltimore and District of Columbia nine each. New York three, Pittsburgh two, Milwaukee and Gloucester one each. From diarrhoeal diseases New York 11, Philadelphia five, Boston, Nashville and Fall River one each, District of Columbia, Cambridge and Fitchburg one each. From whooping-cough Philadelphia seven, Boston six, New York four, Baltimore three, Pittsburgh two, Chelsea and Taunton one each. From erysipelas, New York four, Philadelphia two, Baltimore, Boston, Worcester and Lowell one each. From cerebro-spinal meningitis, Lowell six, New York three, Milwaukee and Lynn two each, Philadelphia, District of Columbia, Worcester and Fall River one each. Malarial fever New York and Philadelphia two each, Baltimore and Nashville one each. From small-

pox New York four, Philadelphia one. From puerperal fever, Milwaukee two, Baltimore and District of Columbia one each.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending March 17th, the death-rate was 20.3. Deaths reported 3,556; infants under one year of age 312; acute diseases of the respiratory organs (London) 458, whooping-cough 148, scarlet fever 49, measles 46, fevers 33, diarrhoea 20, diphtheria 33, small-pox (Sheffield 18, Huddersfield, Manchester and Bristol two each) 24.

The death-rates ranged from 12.8 in Leicester to 31.6 in Blackburn; Birmingham 16.5; Bolton 24.4; Bradford 22.7; Halifax 24.1; Hull 15.5; Leeds 19.5; Liverpool 20.1; London 19.5; Manchester 24.7; Newcastle-on-Tyne 20.9; Norwich 26.2; Nottingham 19.4; Sheffield 21.2; Sunderland 22.2.

In Edinburgh 17.3; Glasgow 27.0; Dublin 29.0.

The meteorological record for the week ending March 31, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barom-eter.	Thermometer.		Relative Humidity.		Direction of Wind.		Velocity of Wind.		State of Weather. ¹		Rainfall.					
		Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.	
Mar. 31, 1888.																	
Sunday, ... 25	30.54	25.0	33.0	13.0	55.0	37.0	48.0	47.0	W.	S. W.	S. W.	12	16	7	C.	C.	F.
Monday, ... 26	30.49	31.0	34.0	27.0	67.0	90.0	95.0	84.0	W.	E.	E.	11	16	12	O.	R.	R.
Tuesday, ... 27	30.24	37.0	40.0	32.0	96.0	88.0	95.0	93.0	N. E.	N. E.	N. E.	12	6	14	O.	O.	R.
Wednes., ... 28	29.88	42.0	48.0	33.0	100.0	79.0	85.0	88.0	N.	W.	W.	16	8	10	R.	O.	C.
Thursday, ... 29	29.80	42.0	48.0	37.0	100.0	61.0	65.0	75.0	S. W.	W.	W.	9	18	15	R.	O.	C.
Friday, ... 30	30.15	42.0	51.0	32.0	89.0	37.0	54.0	53.0	S. W.	W.	S.	12	18	8	C.	F.	O.
Saturday, ... 31	29.96	43.0	53.0	37.0	59.0	52.0	56.0	66.0	W.	W.	W.	14	26	12	C.	F.	C.
Mean, the Week.	30.151	37.4	44.0	30.0				70.9								38	1.18

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE FOUR WEEKS ENDED APRIL 7, 1888.

ARMSTRONG, S. T., passed assistant surgeon. Granted leave of absence for fourteen days. March 21, 1888.

BRATTON, W. D., passed assistant surgeon. Promoted and appointed passed assistant surgeon from April 6, 1888. April 2, 1888.

SOCIETY NOTICE.

MIDDLESEX SOUTH DISTRICT MEDICAL SOCIETY.—The Annual Meeting will be held in Roberts Hall, 710 Main Street, Waltham, on Wednesday, April 18, 1888, at 1 o'clock P. M. The annual address will be delivered at 2 o'clock, by Dr. H. P. Walcott of Cambridge. The Censors of the Society will meet at the same place at 12.30 A. M., of the same day, to consider applications for admission to the Massachusetts Medical Society. Dinner will be served at 3 o'clock, for which probably no assessment will be made. Telephone call, 7635.

WALTER ELA, Secretary.

CAMBRIDGE, April 11, 1888.

OFFICERS OF THE NEW YORK NEUROLOGICAL SOCIETY.

At the Annual meeting of the New York Neurological Society held April 3d, Dr. George W. Jacoby was elected President. Drs C. L. Dana and M. A. Starr, Vice-Presidents, and Dr. B. Sachs, Recording Secretary.

WILLIAM E. GOLDSMITH, M.D.,

The New England Psychological Society, having learned the painful news of the death of a highly valued and beloved member, Dr. William E. Goldsmith, Superintendent of the Butler Asylum at Providence, R. I., recalls with a deep sense of its great loss, his high character, exceptional ability and refined and genuine nature.

Resolved, That such has been the influence of his opinion, based upon his solid attainments and great devotion to his work, that broader views of the treatment of the insane and deeper insight into mental disease, have come to many of us, his fellow-workers.

Resolved, That by his death is lost a tried and considerate friend, a judicious and helpful counsellor, and a courteous and cultivated associate.

Resolved, That the Secretary be requested to communicate these resolutions to the family of our deceased friend, and to extend to them our profound sympathy in their sorrow.

H. R. STEDMAN, M.D. }
THOS. W. FISHER, M.D. } Committee.
C. P. BANCROFT, M.D. }

WALTER CHANNING, M.D., Secretary.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the Ninth Annual Meeting of the American Laryngological Association, held in the City of New York, May 26 to 28, 1887. New York: D. Appleton & Co. 1888.

A Manual of Diseases of the Nervous System. By W. R. Gowers, M.D., F.R.C.P., Assistant Professor of Clinical Medicine in University College, London. American edition, issued under the supervision of the author, and containing all the material of the two-volume English edition, with some additions and revisions. With 341 illustrations. Philadelphia: P. Blakiston, Son & Co. 1888.

Original Articles.

AN ABUSED AND NEGLECTED REMEDY.

BY SAMUEL S. WALLIAN, A.M., M.D., NEW YORK.

THE history of every novelty, innovation or advance in the line of therapeutic measures, is marked and punctuated by a succession of vicissitudes and experiences so uniformly resembling each other, in general features, that a student of medical history might forecast them, in any given case, with greater accuracy than is shown in the average predictions of the Signal Service Bureau.

First, there is the original enthusiast, who, sooner or later, multiplies,—possibly by the process of fissiparism,—into a more or less respectable corporal's guard of camp-followers, who soon succeed in earning the slangy modern title of "cranks." Goaded by opposition and unkind criticism, they take refuge in an almost vituperative over-statement of facts, and over-estimate of possibilities, call down upon themselves merited ridicule and persecution, and this, frequently culminates in abuse and ultimate professional ostracism. This is much less true at the present day than at any former time in the history of medicine. Never was the profession so ready to greet new assumptions with respectful tolerance, and to give them ample opportunity to demonstrate their worth or worthlessness, as now. Instance the fairly epidemic furor with which Bergeon's unnatural and irrational treatment of phthisis swept over the country. Instance, also, the stenocarpine faze.

Again, each new theory, vaunted specific and therapeutic hobby suffers its period of decadence, following a brief heyday of novel popularity, and regardless of its merits or want of merit, it falls into desuetude, if not into contempt. If its claims be based on chemistry, common sense, or clinical experience, it eventually emerges from its undeserved banishment, and is sooner or later revived or re-discovered; after which old assumptions are revamped, fresh experiments are conducted, and, finally, some renowned clinician or acknowledged authority sets the seal of success on it, forever, by adopting it as his own god-child.

This line of thought was suggested by the discussion of the use of oxygen gas in pneumonia, by members of the New York State Medical Society, recently reported in these columns. Of all the therapeutic measures now being brought into more general use, oxygen is certainly one of the most promising. At the same time, there is not a remedy in the whole materia medica which has had to run the gauntlet of so much direct and indirect abuse, or of so much professional bungling.

First, it has been hawked by quacks, until, in many professional minds, its very name smacks of charlatanism.

It has been, and still is, used by honest and well-meaning physicians, in such an inaccurate and unscientific manner, that it is fairly astonishing when any but negative, unsatisfactory, or even disastrous results are reported.

As an example of the first, it is only necessary to instance any one of several firms, which, for years, have advertised as extensively as any of the leading nostrum concerns of the country. Dispensing as they do an almost inert and quite inexpensive solution of therapeutic nothings, at conscienceless prices; cunningly and unostentatiously prostituting the columns of

the religious press; these parties are unscrupulous in assertion, and hesitate at nothing which will advance their prime object,—the wringing of money from credulous dupes, who are always quite willing to be deluded by gilded and glib-tongued sophistry.

To illustrate what I mean by inaccurate and unscientific manner of exhibition, it will be sufficient to merely advert to the average methods of administration in vogue, even among practitioners of eminence, and those who are vaguely conscious of its presumed value, and conscientious in their efforts.

Suppose it is a critical case of pneumonia,—the patient panting for breath, cyanosis increasing, the non-aerated blood constantly growing darker and more sluggish, every moment adding to the suffering of the patient and the consternation of the friends. The medical attendant realizing that oxygen would meet the emergency, hurriedly sends to the nearest calcium light company for a "tauk" of the gas. It arrives, looking very much like a sheet-iron hot-water reservoir. Of its purity or impurity, or the per cent. of chlorine present, he makes no question. Nor has he ever read up, even the meagre literature of the subject, much less questioned as to the devitalizing effect of compression, on even the purest gas. Unaccustomed to the technique of oxygen apparatus, he is puzzled to know how to bring the vitalizing gas into contact with the carbonized blood of his semi-asphyxiated patient. However, he turns on the gas, (at a pressure of two hundred or three hundred pounds to the square inch), liberating five or twenty gallons, he hardly knows which, and watches the results. Perhaps there is a measure of relief; but more likely the result is negative, if not positively damaging. What other remedy could withstand such hap-hazard manipulation, amounting to mere guess-work!

The therapeutic employment of oxygen gas is no longer of questionable utility. It is gradually commanding attention in the highest professional circles, and is being recognized as a desideratum in numerous conditions which have hitherto proved tedious or wholly unmanageable. The chief sources of hindrance to its more general employment have been the professional carelessness referred to, and the general lack of facilities for procuring a prompt supply of the agent, in convenient form, and of a quality sufficiently pure for prolonged clinical exhibition. The commercial gas available is not fit for medical purposes, on account of chlorine and other impurities, which the manufacturers find it difficult to remove, and which are not particularly objectionable in the production of oxy-hydrogen light, for which it is chiefly used.

But it is not necessary to use impure or questionable gas. The process for evolving pure oxygen is not complicated, and may be conducted without the aid of expensive apparatus by those who are not particularly apt in chemical manipulation. Familiar as it is, perhaps its concise repetition may assist some experimenters who have never attempted it, or whose recollections of the laboratory have been dimmed by time.

The best formula, for practical purposes, is that suggested by Fresenius:

R. Potass. chlorat.	lbs. iv.
P. Manganesi dioxid.	lbs. i.
P. Ferri carb. prec.	3ij.

M. S. To be well mixed and triturated, avoiding violent friction, lest an explosion be produced. (With reasonable care, the liability to this accident is very slight.) The prepared material should be ther-

oughly desiccated by being exposed to moderate heat in an open oven, or by means of a chemical drying chamber. Store in any receptacle which will protect it from moisture until wanted for use.

The best retorts are made of either brass or iron. Copper oxidizes more rapidly, besides requiring an increased degree of heat. The conical shape, with broad bottom, is much superior to the old-fashioned flat or pear-shape, the evolution of gas from the latter being tumultuous, and less under control. For making more than thirty or forty gallons at an effort, the cylindrical form of retort is still more preferable. With the latter form, the process is entirely under control.

A portable form of apparatus is now being made in New York which uses cylindrical retorts of small size made from brass, and connected by means of a nipple and friction-joint. An important improvement has also been made in the form of wash-bottle tube. It consists in expanding the lower or submerged end of the tube into a hollow bulb having a number of minute perforations, through which the gas is forced to escape in exceedingly fine bubbles, thus insuring its more perfect contact with the washing or purifying fluid.

I have used this unique and ingenious device in my practice for some months with the best of satisfaction. It renders the gas available hereafter to a large number of practitioners who would forego its use, rather than clutter themselves with the larger and more expensive apparatus. Its capacity, at each operation, is sufficient for any ordinary emergency, and the process can be repeated every fifteen minutes, consecutively if desired. Compact as it is, the gas evolved is, if anything, more perfectly purified than is ordinarily accomplished by the usual laboratory appliances. It is also cooled and desiccated by being passed through a deep layer of anhydrous calcium chloride. It can thus be administered to the patient at a temperature approaching the freezing point, if desired. This gives all the effect of compressed gas, with none of its drawbacks.

A word about compressed gas. In my experience, it is decidedly deteriorated by the process of compressing it. Whether the change is one of molecular arrangement, or what it is, probably cannot be accurately determined. Whatever it is, the compressed gas is practically or partially devitalized. In comparison with nascent or fresh-made and uncompressed gas, it is, to use a commercial expression, not worth half-price. *No physician who has used only commercial, compressed oxygen, gas can give an intelligent opinion as to the real merits of the treatment.* There is more difference between the two conditions of the gas than between fluid extracts made from roots and barks, inert or changed from age, and those prepared from freshly-gathered material.

Professor Dewar, of the Royal Institution, London, has announced the possibility of preparing solid oxygen. The experiment, although ingenious, is, for the above reason, without clinical significance.

Beddoes was the first oxygen "crank." Hill was a faithful disciple, but lacked originality. Both were over-enthusiastic, and, considering the crude appliances with which they were obliged to work, and the crude state of medical science at the time, it is almost incredible that they should have avoided prosecution for malpractice.

Fourcroy, who was a contemporary of Priestley and Lavoisier, was the first scientist to reduce the experiments with oxygen, as a remedy, to something

like system. His eminence, both as chemist and physician, give some weight to his conclusions, which are thus tersely stated: He asserts that he "had witnessed good effects from inhalations of oxygen in the chlorosis of young girls, in the scrofulous affections of children, in humid and chronic asthma, in abdominal obstructions, in hypochondria, in commencing rachitis, and in those obstinate dyspepsias accompanied by pallor of the skin and general debility."

To this original synopsis of the therapeutic promise of this agent, the desultory experimentation of the past three-quarters of a century has added little that is vitally important.

In it we have a key to vaster and more important possibilities than most of us have yet dreamed of. In a future paper I may venture to report some individual experiences I had during the last few years, which emphatically corroborate all that is asserted by the eminent French physicians.

A CASE OF RETINITIS PIGMENTOSA TREATED ELECTRICALLY.¹

BY MYLES STANDISH, M.D.,

Ophthalmic Surgeon to Out-Patients, Carney Hospital; Assistant Ophthalmic Surgeon, Boston City Hospital; Instructor in Ophthalmology in the Boston Polytechnic, etc.

I AM well aware that to report the result of the treatment of a single case of any disease, and to draw deductions therefrom as to the efficacy of the method of treatment, is a rash proceeding, and I would not occupy the time of the Society by reporting this case except for the fact that it is one of several cases reported at the last meeting of this Society by Dr. Hasket Derby in a paper which excited considerable discussion at that time.

The patient was a woman, thirty-three years of age. She had myopia of 1.50 diopters in each eye, and had worn correcting lenses since she was seventeen years old. Her parents were not relatives. She was the only child of her father's first marriage, and had several half-brothers and sisters who had never had any trouble with their eyes. Several members of her mother's family were "near-sighted."

When first seen by me, on the 14th of April, 1886, she had noticed an increasing failure of vision for the previous three years, which had increased very rapidly in the three months previous to her visit to me. Her night-blindness had recently become so great that she could no longer go on the street after night-fall with safety. The ophthalmoscope showed a considerable number of the characteristic star-shaped spots of retinitis pigmentosa in the periphery of the fundus in each eye. Her vision was: right, $\frac{1}{20}$; left, $\frac{1}{20}$.

The field of vision did not extend over 20° in any meridian in either eye.

The only treatment employed in this case was the continuous electrical current. The positive pole was placed upon the closed eyelid, and the negative pole on the brow or temple. The strength of the current used was only such as could be comfortably borne, and has generally been derived from four or six cells of a Störer's battery.

The current has been passed in this manner for five minutes at a time at intervals of several days.

For the last ten months there has been a uniform

¹ Read before the American Ophthalmological Society, 1887.

interval of five days between the sittings. The patient has not been restricted in the use of her eyes while under treatment, and has used them constantly for fine work.

For the fifteen months that she has been under treatment there has been a steady improvement both in central and eccentric vision from the commencement up to the present time, except as hereinafter stated. These exceptions are, first, that there has been no improvement of vision for the last three months, although under treatment during that period; and, second, that in the summer of 1886, after the patient had been under treatment for four months, she went out of the city on a vacation, and was absent for six weeks, during which period the electricity was omitted, and upon her return it was found that her vision had fallen somewhat, both centrally and eccentrically, but the loss did not exceed a quarter of what she had previously gained. Her present vision is: right, $\frac{1}{2}$; left $\frac{1}{3}$. The present horizontal diameters of the fields of vision are: right, 75° ; left, 70° ; and the vertical diameters are: right, 70° ; left, 68° . This rather startling result has been verified by repeated examinations. The fields of vision have been taken with great care in the earlier, as well as the latter periods of observation, upon a perimeter, at noon on a clear day, with the perimeter facing the light, and at the same distance from the window at each trial. The objects used in determining the areas of the fields have been pieces of white paper one centimeter square. In testing central vision, the test-types have been changed from time to time, to avoid the danger of making too high a record by the use of familiar letters. Some ophthalmoscopic changes have taken place while the patient has been under treatment, but these changes have been confined to a widening out of the prolongations of each patch of pigment, so that they do not now present such characteristic bone-corpusele-like shapes as they did when first seen. No new patches of pigment have appeared.

To argue from this case that all, or even a very considerable number of cases of retinitis pigmentosa would be similarly benefited by the use of electricity would be manifestly absurd; but that such an improvement in central and eccentric vision should happen to any case of retinitis pigmentosa, either with or without treatment, is a noteworthy fact, and one that should draw our attention to the circumstances of that particular case.

We have present in this case, besides the constant treatment during a period of fifteen months, several other peculiarities. It came on fully as late in life as this disease ever develops; that is, if we may believe the patient's statement, at about thirty years of age, but did not progress very rapidly until the last three months before she came under observation, during which period, however, the onset of the disease was unusually rapid. Again, when first seen, the impairment of vision was very much greater than we should be led to expect by an examination of the fundus, from which it would appear that treatment was begun while the disease was yet in its active stage, preceding the visible deposition of pigment in the retina.

From these considerations it would seem that, in so far as one case is capable of teaching anything, that when a case of retinitis pigmentosa is seen in its earliest stages, or when there is a sudden exacerbation

of the disease, as evidenced by diminution of the functions of the eyes, that a trial of galvanism should be made.

PARALYSIS OF THE POSTERIOR CRICO-ARY- TENOID MUSCLE FROM SWALLOWING A MARBLE.¹

BY E. A. KEMP, M.D., DANVERS, MASS.

EDWARD B., age six years, had always been well up to June 27, 1886, with the exception of having the usual diseases of childhood. On the 27th of June he had taken a walk with his father. On their return, when about ten rods from their house the father noticed that he was more quiet than usual, and seemed to be trying to swallow something. The father asked him what the matter was? he answered, "I have swallowed some grass." The father noticed that he looked quite pale, and appeared as though not fully conscious. He took him in his arms and carried him to the house. The extremities were quite cold. He seemed listless but without pain. He remained much the same for two days, talking to no one and merely answering a few questions that were asked him. The mind seemed pretty clear most of the time. He had a good deal of headache during the time he was confined to the bed; the pain being mostly on the left side at the back of the neck. There was noticeable in the breathing a slight dyspnoea with some hoarseness in coughing. He had no appetite, and rested poorly during the night. Nine days before this attack he was accidentally hit with a stone on the left side of the head near the neck. He cried a good deal at the time, and for two or three days complained much of soreness; but it did not seem to trouble him much a week after he was taken sick; then he complained a good deal of the left side of the neck. There was considerable stiffness, and the head was slightly drawn to one side. He remained in this condition for over three weeks. Improvement was gradual, and at the end of that time the patient was able to be up and dressed. About two weeks later it was noticed that he breathed like a child with enlarged tonsils. He was worse at night; in fact, he was much worse when asleep. The parents were told that it was asthma, and were advised to take him to the mountains. Accordingly about the last of August, he was taken to Vermont for a change of climate, but instead of improving, he grew worse. The breathing was very good during the day, or at any time while awake, but at night, while sleeping, it was so noisy that it disturbed the whole household, and at times kept them from sleep. The history of the case thus far was gleaned from the parents. It had been diagnosed as asthma, laryngitis and bronchitis.

I first saw the patient on the 14th of September. I found him dressed and quite cheerful. He seemed to enjoy his play at times. He was paler than usual, had lost a good deal of flesh, and had very little appetite. He was very irritable and fretful at times. The breathing was pretty good with the exception of some dyspnoea during inspiration, which symptom was greatly increased during any active exertion. He had frequent paroxysms of coughing while sleeping at night. The noise of breathing was almost beyond description, and could be heard all over the house; even members of the family who occupied the third story

¹ Read before the Essex South Medical Society, November 1, 1887.

during the night, were kept awake by his stridulous breathing, the boy being on the first floor. Upon inspection with the laryngoscope there was no catarrhal inflammation of the mucous membrane. The vocal chords during inspiration, instead of being abducted, remained nearly approximated; the opening of the glottis forming a very acute isosceles triangle, the aperture varying from one to two lines. In fact, by pressure of the air on their upper surfaces the vocal chords would be brought closer together during inspiration. They seemed to act as valves which are closed by the weight of the atmosphere upon their wide upper surfaces pressing them against each other; hence the inspiratory stridor and dyspnoea. Thus the order of the movements of the chords was changed. In the normal condition the glottic aperture is wide in inspiration, and narrow in expiration; in this case narrow in inspiration, and, while not wide, at least wider in expiration than in inspiration.

Now the crico-arytenoidei postici muscles in action separate the vocal chords, and open the glottis by rotating the base of the arytenoid cartilages outward and backward, so that the anterior angles and the ligaments attached to them become quickly separated. They are then the abductors of the chords, while the crico-arytenoidei laterales are antagonistic; that is, they are the adductors. It can therefore be readily understood that with a paralysis of the crico-arytenoidei postici muscles, there should result the condition just described: a narrow glottis on inspiration. Being fully convinced that I had to do with a case of posterior crico-arytenoid paralysis, the question arose as to the cause, a question which I could not answer at that time. The case grew worse day by day, and I feared tracheotomy would have to be resorted to in order to give relief. On the night of the 20th of September, the child had a very hard time. The paroxysms of coughing were almost incessant, with very few intervals of relief. During the paroxysms it seemed almost as though he would strangle. He would clutch at his throat with both hands, saying, "I cannot breathe; I shall die." The parents were almost beside themselves, seeing the child suffering so much, with so little apparent prospect of relief. During the worst paroxysm, when it seemed as though he could not get his breath, he held his hand to his mouth and said "I have got it"; and in his hand was a marble which he had just spat up. This gave almost instant relief and he soon fell asleep and rested well for four hours. The dyspnoea was much diminished, while the stridor had not yielded as much.

This marble must have been impacted at the orifice of the oesophagus, where it pressed on the abductor muscles. After the rejection of the marble the patient commenced to improve slowly. His appetite returned and he gained in flesh. The dyspnoea and stridor yielded very slowly. It is now seventeen months since this patient was first affected, and to-day he apparently is perfectly well; but at times a slight hoarseness of the voice, which he did not have before this sickness, can be noticed.

The only case of a similar character which I can find on record, is one of Ott's, reported by Dr. Morell Mackenzie, of London, in which a piece of meat was impacted at this orifice, and though it remained only twenty-four hours, still the effect it had on the abductors was apparent.

When we take into consideration the action of the

different laryngeal muscles in health, and note their condition during a state of paralysis we can see that a correct diagnosis of this condition is not so very difficult. Given a patient who has a normal or almost normal voice, with freedom of expiration, but great inspiratory dyspnoea much increased on the slightest exertion and accompanied with great stridor in sleep, a trouble of the abductors must be suspected. Of all the muscles of the larynx, these are the most important so far as life is concerned, and no others give such prominent and distressing symptoms, when paralyzed.

REPORT ON MEDICAL CHEMISTRY.

BY WILLIAM E. HILLS, M.D.

ARSENIC.

It is well known that when organs containing arsenic undergo putrefaction a gradual diminution in the amount of arsenic takes place, owing to the formation of volatile compounds.

Hamberg¹ reports the following experiment. He added one gram of arsenious oxide to some finely divided organs, and placed the mixture in a flask. He found that the gases evolved during the putrefaction of the organs contained an abundance of arsenic. In the residue, after the evolution of volatile arsenical compounds had ceased (about nine and a half years) arsenic was found in the form of arsenic acid. The amount of arsenic present corresponded to 0.551 gram arsenious oxide. The gases evolved during this experiment were conducted through a four per cent. silver nitrate solution; but, although nearly one-half the arsenic originally present had been lost, only a small portion was retained by the silver salt. (That is, only a small portion of the arsenic was given off in the form of arseniuretted hydrogen, which has usually been assumed to be the principal form in which arsenic is given off under such circumstances. The greater portion of the arsenic must, therefore, have been evolved in the form of volatile organic compounds not decomposed by silver nitrate. Thus, perhaps, is explained the repeated failures to obtain any evidence of the presence of arseniuretted hydrogen in the air of rooms papered with arsenical wall-papers. While it is, on the whole, more reasonable to suppose that a majority of cases of arsenical wall-paper poisoning are caused by the inhalation or swallowing of arsenical dust, still certain cases seem to suggest that some more active arsenical compound may have been the chief agent in producing the symptoms. The formation of arseniuretted hydrogen has been suggested in explanation of such cases. But it must be acknowledged that it has not been satisfactorily proven that this compound is very liable to be formed under such circumstances. Hamberg's experiment in point of fact seems to show that it is not likely to be formed to any great extent even when the conditions are apparently the most favorable for its formation. It seems desirable under the circumstances that further experiments be made relative to the possibility of the formation of other volatile arsenical compounds in rooms papered with arsenical papers. — *Rev.*)

BISMUTH.

The application of subnitrate of bismuth to open wounds has frequently been followed by symptoms of

¹ Zeitschrift für Analytische Chemie, 1887, 6, p. 756.

poisoning—nephritis, stomatitis and enteritis. These effects are the more striking as large amounts can be taken by way of the stomach without injury. The symptoms provoked by preparations of bismuth have been attributed to metallic impurities; for example, to antimony, lead, and especially arsenic; but experiments of P. Dalché and E. Villejean² on guinea-pigs and dogs, seem to show that they are due in part, at any rate, to bismuth. In their experiments they administered subcutaneously the neutral nitrate of bismuth in a twenty per cent. solution with some glycerine. Four experiments were made, all resulting in the death of the animal. The following details of one experiment are given:

A dog weighing 4,800 grams received the salt for twelve days in doses gradually increased from 0.3 gram to 3. grams. On the fourth day he lost appetite and strength. Towards the end of the treatment there was an increased flow of saliva, and on the twelfth day he died, having lost two kilograms in weight. On the eighth day the discharges were dysenteric and mixed with blood and so continued until death. A few days before death bluish spots were observed on the gums about the molar teeth of the lower jaw, and two similar patches on the inner surface of the cheeks. By degrees the gums, lips and cavity of the mouth presented generally this blue appearance, which finally resulted in gangrene of the inner surface of the cheeks.

The authors determined the amount of bismuth in the various organs of one of the dogs, and found 2, 6, $6\frac{1}{2}$ and $9\frac{1}{2}$ milligrams of oxide of bismuth in 15 grams of liver, salivary gland, kidney and spleen respectively. The urine contained bismuth and frequently albumen and casts. The metal appears to accumulate especially in the spleen, and is eliminated not only through the kidneys and liver, but also through the salivary glands. This latter appears to be the cause of the stomatitis which has been observed as a result of the administration of bismuth.

That severe symptoms of poisoning may result from subcutaneous injection of preparations of bismuth and their application to open wounds, while this is not the case when they are taken internally, the authors think is attributable in part to the fact that oxide of bismuth enters into soluble combinations with albuminous bodies, not only in the presence of alkalis and organic acids, but also in the presence of an excess of albumen; in part to the fact that absorption is continuous.

COPPER.

G. H. Roger³ has experimented with albuminate of copper, and finds that this compound, if injected directly into the circulation, causes death. On the other hand, if taken into the stomach, it is borne very well. The explanation of the latter fact is, apparently, that a great part of the salt is removed by vomiting, then that any portion of the salt remaining in the stomach is converted by the food present, especially sugar, into insoluble and harmless combinations; and if any part happens to be absorbed it does not enter the general circulation, but is retained by the liver, and is afterward separated slowly by the bile. This influence of the liver is shown by the fact that twice as large a dose is needed to kill an animal when

injected into the portal vein, as when injected into the peripheral veins.

Copper causes death by paralyzing the muscles of respiration, the paralysis attacking first the extremities and progressing upwards. The heart beats for a short time after breathing has ceased. Experiments on the muscles of frogs show that copper causes loss of excitability and contractility, but the motor nerves are also affected. Sensibility remains intact, or is weakened only to a slight degree.

NICKEL.

The action of the salts of nickel upon the system has been the subject of a number of investigations, the results of which have been very contradictory. Schulz, Roos and Geerkens administered the acetate of nickel to dogs to the amount of 10-17 grams over periods varying from twenty to thirty-four days without observing more than the slightest alteration in the general condition, with some diminution of the appetite. Others have concluded that the salts of nickel even in small doses—0.100 to 1 gram—were always fatal. The subject derives its importance from the increasing use of utensils of nickel for pharmaceutical and culinary purposes. In certain countries this metal has been by decree pronounced dangerous, and its employment for these purposes forbidden.

M. A. Riche⁴ has recently investigated this subject anew, and he concludes that nickel may be employed without any danger for holding or preparing articles of food. His conclusion is based upon experiments made on animals, and upon investigations relative to the amounts of nickel which may be dissolved by various liquids (the latter not yet published, we believe). For instance, two guinea-pigs took during ninety-six days 26.3 grams nickel sulphate in quantities gradually increased from 0.025 to 0.250 gram daily without any noticeable effect. A dog during thirty days took with his food salts of nickel corresponding to five grams of the metal with the same result. In a third experiment a dog took during 160 days 100.75 grams nickel sulphate, corresponding to 21.25 grams of the metal, in doses varying from 0.500 gram to 2 grams daily. As long as the quantity did not exceed 0.5 gram daily no effect was noticed. If the daily dose was raised to 0.75 gram vomiting occurred after a few days, and there was a tendency to diarrhoea. The daily dose was raised to one gram during fourteen days, then to one and one-half grams during twelve days, and finally to two grams. Increased vomiting, diarrhoea and general weakness were the results of these large amounts, and after taking two grams for two days the animal refused to eat. After a rest of three days, however, the dog recovered, and the treatment was continued. On the last thirty-seven days of the experiment the amount taken was 0.500 gram daily. At the close of the experiment the animal was in good health, and had increased in weight. In no case was any pathological appearance found in any of the organs. Nickel was found in all the organs, and in the urine, blood and bones in amounts varying from 0.001 to 0.008 gram; the largest amount in the liver and nervous tissue. In the course of the experiments the faeces and urine were frequently examined, and nickel was always detected. It is apparently eliminated through these channels.

In conjunction with Laborde,⁵ M. Riche has further

³ Schmidt's Jahrbücher, 217, 1, p. 24.

² Schmidt's Jahrbücher, 217, 1, p. 26.

⁴ Journal de Pharmacie et de Chimie, 1888, No. 1, p. 6.

⁵ Ibid., 1888, No. 2, p. 69, and No. 3, p. 97.

investigated the action of large doses of the salts of nickel injected into the veins, and administered by way of the stomach. They find that, when introduced into the stomachs of dogs and rabbits, they cause in doses of 0.5-3 grams vomiting and diarrhea, followed by lowering of temperature, general weakness, and stupor, but never death.

The action of the salts of nickel is, according to the authors, similar to that of the salts of copper, so far as relates to the essential symptoms, but it is much weaker. The quantity necessary to produce death is larger than could possibly be introduced into food by contact of the latter with the metal.

In acute, as in chronic poisoning, the metal is found especially in the liver and nervous tissue.

BARIUM.

G. Linossier⁶ has made a series of experiments relative to the localization of barium after chronic poisoning with a barium salt. The salt employed was the carbonate, and the poisoning was prolonged for a period of thirty days. He finds on analysis that all organs contain some barium, but that it is present in very variable proportions. The lungs, muscles, and particularly the heart, yield only traces, the liver rather more, kidneys, brain, and spinal cord still more, and lastly, the bones, a considerable quantity, as much as 0.56 in 1,000 parts of bone ash.

PTOMAINES AS SOURCES OF ERROR IN TOXICOLOGICAL INVESTIGATIONS.

Brouardel, Ogier, and Minovici⁷ have sought to determine if reactions exist by which ptomaines can be distinguished from the vegetable alkaloids. Their experiments were made upon the livers and kidneys of bodies which had been buried for periods varying from two or three days to two years and longer. They are quite sure that certain color-reactions are characteristic of the vegetable alkaloids. Ferric chloride and alcoholic potash (after previous action of nitric acid) never gave distinct reactions with ptomaines; but it must be admitted that decisive tests for distinguishing alkaloids and ptomaines are not yet given, and that the presence of ptomaines may mask the distinctness of the reactions for alkaloids.

COLCHICINE.

Dr. N. Obolouski⁸ has made a series of experiments for the purpose of determining: (1) The minimum quantity of colchicine which can be detected in mixtures with various organic substances, or in the organs of animals poisoned with the alkaloid. (2) The length of time colchicine resists decomposition under such conditions. (3) What change, if any, it undergoes during the process of extraction. (4) Its most characteristic reactions.

Thirty experiments were made: (1) with aqueous solutions of colchicine; (2) with mixtures of colchicine with various tissues; (3) with the organs of rabbits and dogs killed with colchicine, and examined after periods varying from three and a half hours to four and a half months.

The original paper is referred to for the details of the method of analysis, which is described in full. The alkaloid was finally extracted by means of chloro-

form. According to the author, the alkaloid undergoes no change under the influence of chloroform, even if in contact with it for two days. In this statement he contradicts Vulpian and Schützenberger, who state that colchicine, when extracted with chloroform, undergoes a change, after which it is not colored violet with nitric acid.

In experiments with urine, distinct reactions were obtained from mixtures containing 0.05 to 0.005 gram colchicine to 300 cc. urine, even after standing twenty-four hours. When 0.005 gram colchicine was mixed with 500 grams of tissue, positive results were obtained only in cases in which the analysis was made early. If the tissues were allowed to stand for a month at 20° C., the results with such minute amounts were doubtful; that is, they were hardly sufficient in a case involving a charge for murder to establish the fact of poisoning; still they were sufficiently pronounced, in the author's opinion, to show that in spite of the small quantity of alkaloid used, and the high grade of putrefaction of the organs with which it was mixed, the alkaloid was in great part still undecomposed.

Animals poisoned with colchicine died in 10-15 hours after the administration, and the organs were examined either immediately after death, or after periods ranging from twenty-four hours to four and a half months. The amounts of the alkaloid employed were 0.5, 0.1, 0.02, and 0.01 gram. In all cases the intestinal discharges were bloody. In the case of the dogs, vomiting was a constant symptom. Death was preceded by great prostration, and in a majority of cases by violent convulsions. The presence of the colchicine was always demonstrated in all the organs.

The author therefore concludes that quantities of colchicine as small as 0.005 gram can be detected with certainty; that colchicine is a very stable alkaloid, decomposed only with difficulty, and only when the organic matter with which it is mixed is in an advanced stage of putrefaction. In medico-legal cases the most distinct reactions are obtained from the kidneys and urine. The author further concludes, as a result of a number of experiments, that it is doubtful if there is any danger of mistaking ptomaines for colchicine. The best reagent for the detection of colchicine is nitric acid, either alone or with the subsequent addition of potassic hydrate. Erdmann's reagent (nitric and sulphuric acids) is not always satisfactory, but may be depended upon if supplemented by the addition of an alkali. Mandelin's reagent (ammonium vanadate, dissolved in sulphuric acid) is less satisfactory. The preliminary green color passes over into the brown so quickly that it may easily escape notice.

POISONING BY MUSSELS.

M. Dutertre⁹ concludes that poisoning by these shell-fish is due to the presence of numerous bases analogous to the alkaloids, among which *mytilotoxine*, which acts in a manner similar to curare, and produces the paralytic form of poisoning, has been separated. The principles causing urticaria, salivation and gastro-enteritis have not yet been determined. These toxic principles have their seat solely in the liver, but do not appear to belong there normally, but to be the result of some lesion or functional trouble in this organ. In certain persons, however, comestible mus-

⁶ Journal of the Chemical Society, London, February, 1888, p. 163, Abstract.

⁷ Schmidt's Jahrbücher, 217, 1, p. 3.

⁸ Vierteljahrsschrift für gerichtliche Medizin, 1888, H. 1, p. 510.

⁹ Journal de Pharmacie et de Chimie, 1887, No. 8, p. 358.

sels, which are not poisonous, may cause symptoms of poisoning, usually not severe, simply as a result of digestive disturbances.

VOLATILE BASES IN EXPIRED AIR.

MM. Brown-Séquard and d'Arsouval¹⁰ have demonstrated that the lungs of man, the dog and the rabbit produce normally an extremely active poison, which is eliminated continually with the expired air. Their investigations comprised the study of the effects produced upon rabbits by injecting into an artery or a vein water containing the poisonous principle produced by the pulmonary mucous membrane. The solution of the poisonous principle was obtained (1) by injecting into the lungs of a rabbit or a dog a quantity of perfectly pure water, and afterwards withdrawing the unabsorbed portion; (2) by condensing the vapors contained in the air expired by man or dogs. The symptoms produced by solutions obtained in different ways were always the same. Presumably, therefore, the same poison was injected in each case. The poisonous principle is apparently an alkaloid, for the reaction of the fluid containing the poison was always alkaline. The poison was not destroyed by boiling, and the symptoms produced are always the same, by whatever channel the fluid is injected. The authors consider it very probable that it is this principle which renders confined air so dangerous. The paper of Brown-Séquard and d'Arsouval has called forth a preliminary communication from M. Robert Wurtz,¹¹ who has succeeded in isolating bases, both fixed and volatile, which exist normally in the blood. He is now engaged in investigating the method of elimination. Although his studies are not yet completed, they have already lead him to the conclusion that certain bases are eliminated by the lungs. Among these ammonia seems to predominate, but there is, in addition, an organic base whose reactions are described in M. Wurtz's communication. The author has not, however, obtained a sufficient quantity of this material to enable him to determine its composition or to study its physiological effects.

ETHEREAL SULPHATES IN MORBID URINES.

G. Hoppe-Seyler¹² publishes a series of tables showing the amounts of sulphuric acid in the form of sulphates, and that in the form of ethereal sulphates, and the ratio of the former to the latter, in the urine of patients suffering from various diseases. The results obtained are thus summarized: Deficient or increased absorption of the normal products of digestion, as in ileus, peritonitis, tubercular diseases of the intestines, etc., leads to an increase of ethereal sulphates in the urine, as a result of absorption from the intestine of the substances formed by the putrefaction of the normal products of digestion. In typhoid fever there is no such increase. Simple constipation also causes no increase. Diseases of the stomach, even those in which the food lies in the stomach a long time, and then undergoes fermentation changes, never lead to increase of the ethereal sulphates. Putrefactive changes outside the alimentary canal result in an increase; and the result is proportioned to the severity of the putrefaction. The amount of ethereal sulphates may, however, be unchanged, if, at the same time,

other products of putrefaction are increased. This relation exists between indoxyl and scatoyl. In peritonitis indoxyl predominates over scatoyl, the reverse being the case in normal human urine.

The author gives in this paper a resumé of the literature relating to the ethereal sulphates.

PETTENKOFER'S REACTION FOR BILIARY ACIDS.

According to Mylius¹³ the coloration produced in Pettenkofer's test, for the bile acids depends upon the furfural, which is formed by the action of sulphuric acid upon the sugar. Mylius mentions a number of other substances which possess, with cholic acid, the property of producing a red color in the presence of furfural and sulphuric acid.

NYLANDER'S TEST FOR SUGAR.

C. Le Nobel¹⁴ finds this test convenient and certain, if employed warm. He agrees with Nylander that normal urine, if boiled with the reagent, never gives an immediate black precipitate. Such a precipitate occurs only when the mixture is allowed to stand twenty-four hours after boiling. In the absence of sugar a black precipitate is observed in the presence of albumen and peptone, also after the administration of kairin, tincture of eucalyptus, oil of turpentine, and large doses of quinine.

AN UNUSUAL URINARY SEDIMENT.

Thormählen¹⁵ observed the following peculiar urinary sediment in a case of albuminuria. The urine had the appearance of a thick, grayish-yellow mortar-like pap, containing also isolated large clumps, which adhered to the sides of the vessel. The filtered pap, suspended in cold water, was completely dissolved on the addition of a few drops of potassic hydrate and heating. The solution did not become cloudy on cooling, but gave with acids, in the cold as well as upon heating, a thick precipitate. The precipitate produced by nitric acid was not dissolved by heat, but was colored yellow, and, upon addition of an alkali, orange red. The solution was precipitated in the cold by sodic chloride, potassic ferrocyanide and acetic acid; and upon boiling, by sodic sulphate and acetic acid; and responded to the ordinary reactions for albumen. Thormählen considers the sediment a peculiar albuminous body, separated spontaneously from a strongly acid urine containing much salicylic acid, not coagulable by heat, but easily precipitated from both hot and cold solutions by acids.

The following papers are referred to by title: "Relation of Tyrosine to Hippuric Acid,"¹⁶ "Urinary Pigments,"¹⁷ "Scatoyl Sulphuric Acid and the Scatole Pigment."¹⁸

— Mr. Thomas Bryant retires May 1st, by "efflux of time," from his position as surgeon to Guy's Hospital. He has been connected with the teaching staff of the Hospital for thirty-one years: fourteen years as assistant-surgeon, seventeen years as surgeon, of which, the last seven years, he has been senior surgeon. He has held the lectureship in surgery for thirteen years.

¹⁰ Journal de Pharmacie et de Chimie, 1888, No. 4, p. 188.

¹¹ Zeitschrift für Analytische Chemie, 1888, 1, p. 121.

¹² Zeitschrift für Analytische Chemie, 1888, 1, p. 124.

¹³ Zeitschrift für Physiologische Chemie, 11, p. 355.

¹⁴ Ibid, 11, p. 637, and 12, p. 33.

¹⁵ Ibid, 12, p. 130.

¹⁶ Comptes Rendus Hebdomadaires, 1888, p. 106 and 165.

¹⁷ Ibid, 1888, p. 213.

¹⁸ Zeitschrift Physiol. Chemie, 12, p. 1.

Clinical Memorandum.

CYSTOCELE OBSTRUCTING LABOR; DELIVERY BY VERSION.

BY J. N. HALL, M.D. (HARY), STERLING, COLORADO.

THE interest in this case lies chiefly in the fact that the woman was allowed to become exhausted before help was called for, and hence the child was delivered artfully.

Mrs. I., thirty-eight years of age, eleventh pregnancy, labor pains since waters broke, about forty-eight hours ago. Ten hours before seen she called a midwife. The latter, finding something which prevented progress, summoned aid. When seen by me, 10 A. M., October 23d, pains were severe, but accomplishing nothing; head presenting, O. R. A.; marked caput succedaneum; bladder prolapsed in front of the head; pelvis the largest I had ever seen.

An elastic catheter was passed with difficulty, and three ounces of urine removed. From the swollen condition of the parts and the exhaustion, it was thought that delivery would not occur without assistance. Under ether, the head was held well down from the abdomen, but was still so movable that the forceps were abandoned, chiefly from fear of bruising the swollen soft parts. Hence the child was delivered by version with great ease. Weight, about nine pounds. The caput succedaneum extended from one parietal eminence to the other, and was two inches antero-posteriorly.

The convalescence was uninterrupted.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR OBSTETRICS.

GEORGE HAVEN, M.D., SECRETARY.

REGULAR meeting, Wednesday, December 28, 1887, at 19 Boylston Place.

Meeting called to order by the Secretary, at 8 o'clock. DR. JOHN W. FARLOW was elected Chairman for the following year.

The first business in order was a discussion on THE TREATMENT OF OCCIPITO-POSTERIOR POSITIONS.

The discussion was opened by DR. C. M. GREEN, who said: In speaking of the treatment of posterior positions, I shall allude to the etiology only in so far as may be necessary to explain the treatment that seems to me best in the different phases of the condition; and I shall consider the subject in two divisions, the first embracing those cases where the head is at or above the superior strait, and the second, those where the head has already entered the cavity of the pelvis, as the treatment would differ decidedly under those two conditions.

First, in regard to those cases where the head is at the superior strait or above it. I would say by way of preface that throughout what I shall say I shall regard the pelvis as a normal one. Regarding the fetal head I shall speak as I go along, as the cases would differ somewhat with the size of the head. With the head at the superior strait, and in a posterior

position, difficulty is very apt to arise from the head not perfectly engaging. And that is a very interesting point, as to why it does not engage properly. With the head lying in a posterior position the biparietal diameter has got to pass through the chord which subtends what might be called the sacro-iliac arch on that side of the pelvis towards which the occiput is directed; that is to say, a line running from the promontory of the sacrum to the middle of the ilio-pectineal line on that side. This chord does not equal in its measurement that of either of the oblique diameters. It will be remembered that where the head is attempting to pass the pelvis in an anterior position, the biparietal diameter is going to pass through one of the oblique diameters. For instance, in the O. L. A. position, the biparietal diameter is going to pass through the left oblique diameter of the pelvis and in the O. R. A. position the biparietal diameter is to pass through the right oblique diameter, and that it can do readily under normal circumstances. But when the head is attempting to pass in a posterior position, this same biparietal diameter has got to pass through the chord which subtends the sacro-iliac arch on one side, and that does not measure so much. In the great majority of cases the head is not so large but that this diameter of the head can pass through the arch. Still, in a great many cases where the child is well developed, this diameter is just enough too large to prevent its passing easily.

Well, then, the moment there is any resistance whatever to the easy passage of this diameter, the most natural thing to occur is that the head should become slightly extended, or rather, we might perhaps put it in this way, that good flexion does not take place, since a greater resistance is brought to bear on the occipital arm of the cephalic lever. Then when we are called to the case, the head being, as I have said, above the superior strait, we find the occipito-frontal diameter occupying the brim instead of the suboccipito-bregmatic. Now, of course it is impossible for that diameter to pass, and the clinical history in this case is that the woman's labor goes on, the pains are good, bad, or indifferent, the os dilates in part, but does not go on to complete dilatation because the head does not press far enough down, the woman becomes exhausted, and the condition found is, as I have said, no progress, because an improper diameter is trying to pass through the strait.

In that condition of affairs the treatment is obvious, and the ready reply would be to overcome the difficulties in the case, to promote the flexion which has not taken place, to correct the slight extension which has taken place, and let everything go on. The difficulty is that probably the head was in a fair degree of flexion originally, and yet it did not pass. If even we succeed in flexing the head, the woman may have become by that time so tired out that no longer are the pains sufficient to force the head into the pelvis; so that in reference to the advisability of flexing the head and seeing what will happen when that is done, although I do not say that it is of no use whatever to do it, still I have never seen it do much good, owing to the fact that before that is done usually the labor has been so long in progress that the force of the uterine contractions is no longer powerful enough to do the work it would have done if the head had entered properly in the beginning.

The picture is not one which I will attempt to draw

clinically; but I will speak of the best treatment under the circumstances. That sort of a case is not infrequently seen; and there are degrees in which this condition of affairs may occur, from the slight extension, or non-flexion, of the first part of labor, which any obstetrician should detect, to cases that have gone on even longer, where, instead of slight loss of flexion, there becomes a decided extension, so that the brow of the child dips down lower and lower, and the attendant perhaps flatters himself that the case is progressing, when really extension has gone on more and more, a larger and larger caput succedaneum is formed, and progress has been made to the bad instead of in the right direction.

My own belief is that in that sort of a case the treatment should be something like this: If the case is seen early, if it is found out, as it should have been, that the patient has an occipito-posterior position, it is desirable that the child should be made to rotate so as to occupy an anterior position before the labor has advanced so far that the woman has become exhausted and more serious operative interference must be entertained. I think that may often be brought about by postural treatment. For instance, in the case that we are considering the head is above the strait, and the brow may have entered the strait. The occiput is above the strait, and is riding on the edge of the ilio-pectineal line. If it is in a right posterior position, and the woman is made to lie upon her right side, or in the right latero-prone position, in a great many cases, if the pains are fairly good, as they naturally would be if this process is undertaken early in labor, the head will slide around, and come into the position of right anterior instead of posterior. I have seen that illustrated very prettily quite a number of times, and it is the best course to pursue if the case is seen early and the head is not very decidedly extended or the brow well down in the pelvis. The head having thus rotated into the anterior position, the labor will probably progress normally, or if not, forceps may be readily applied to the anterior head, and delivery accomplished with considerable ease.

It should be said, too, that this rotation of the head forward when it is above the superior strait, can be materially aided by external assistance through the abdominal wall. The body of the child can be grasped, or the hands can be pressed down behind it and the trunk thus assisted to rotate forward, as the head travels around the ilio-pectineal line on the right side. I am not sure about the advantage of having the patient get up and walk about, for I have never tried it. There is no objection to her doing so, for the os would not be dilated at this stage, and of course with the woman erect gravity would help this condition of affairs. I have no doubt that it might succeed when the woman keeping the latero-prone position might not suffice.

Now suppose for any reason this is not to be accomplished, manipulation through the abdominal wall does not succeed, and the head remains in its position. I am not one who believes in using forceps in that sort of a case. I believe that more fetal life is lost with the forceps treatment in that position than we realize. I think, therefore, that if this change of position cannot be accomplished, it is better in the interest of the child to do podalic version and deliver the after-coming head in the manner usually practised. It is surprising, I think, to see for the first time a version

done where the labor has gone on for some time and where, in place of a slight loss of flexion, there is a great extension, so that we are practically dealing with a brow, and at the same time with a head so elongated that the large diameter is above the superior strait. It would not be believed that podalic version could be done in such a case. I believe that even when the brow has almost begun to bulge the perineum a version can be done. My treatment therefore for the head with the large diameters above the superior strait would be the attempt to produce an anterior rotation by means of postural treatment and assistance through the abdominal wall, and failing in that, to employ version. I would say, however, that there are cases where forceps can be safely used, and I have used forceps myself in that condition of affairs, after flexing the head and judging that it was not a large child and that the head ought to pass. That, however, I believe to be an exceptional method of procedure. I believe that as a rule version is a safer thing for the child, and it ought to be safer for the mother when we remember how dangerous high forceps are for the mother. So much for those cases where the large diameter is not engaged in the superior strait.

Now then, passing on to the second class of cases, where the head has entered the pelvis, and where the occiput is posterior, we come to those cases which have escaped the first peril of non-engagement, or non-engagement in a suitable diameter, where the head has passed successfully through the superior strait, and entered the cavity of the pelvis. Of course many of these cases go on without difficulty, anterior rotation takes place, and the child is born. And I have no doubt that it is sometimes not appreciated that the child lay in a posterior position. It is so easy in the absence of a proper external examination not to make a diagnosis.

But unfortunately a great many of these cases do not proceed to normal delivery. The patient's pains may be pretty good, but the anterior rotation does not take place; flexion is lost, gradually the larger fontanelle comes down lower than the small fontanelle, and the attendant is surprised to find at one examination that where he had previously felt a small fontanelle he no longer feels it, but does feel a large fontanelle. Extension has taken place, and he now has a case which, unless properly treated, will not go on to normal delivery. Of course, occasionally in these cases flexion will take place, but that would be the exception.

Now there are three factors which are necessary to the anterior rotation of the head when it is in the pelvic cavity. First, the pains should be sufficiently strong, the child's head should be perfectly flexed, and the soft parts should be sufficiently firm. We must have good pains, a good, firm perineum, and good flexion. Now then, the treatment of any case would consist in promoting, as far as one can, these conditions. If the pains are not good, of course we may not be able to help it. But we ought not to have let them become poor, as is too often the case. The woman should not be allowed to go on in fruitless labor until the uterus is tired. But granting that no other reason exists, and that the pains are not strong enough from general weakness, or from any cause whatsoever, then of course as we cannot supply the *vim a tergo* (though quinine is said sometimes to do

it), we must put in force the *vim a fronte*; namely, the forceps.

Then in regard to the question of flexion. I have never seen a case that I could not flex; although of course they do occur, it has never been my fortune to meet one. It is not always easy, by any means, although it may be possible. In a great many cases flexing is easy by simply exerting counter-resistance against the forehead,—simply holding two fingers against the forehead during several pains, and if the pains are good they will, by forcing the occiput down, cause flexion. If there are no pains, then we must substitute counter-pressure for counter-resistance, and with firm pressure we may be able to restore flexion. That failing, we may go to the other end of the lever and see what we can do with the occiput. We may pass up one hand, and with that succeed in flexing the head. If that fails we have still the use of the forceps-blade or rectis, which is the same thing, and with that means pull down the occiput. Of course if it can be done with the hand it is better, on the principle that it is always better to use the fingers rather than an instrument. That failing, there still remains the method of flexing the head with the forceps reversed, which was brought to the attention of the Massachusetts Medical Society by Professor Richardson two years ago in a paper on this subject. That is a method which it is comparatively easy to employ, and which certainly works very well. It is a very pretty mechanism, and it increases also our respect for the forceps, as increasing their power. Of course it simply means this: In all cases where we use the forceps we turn the forceps-tips to what we might call the leading point. The leading point of the O. L. A. position, for instance, is the occiput, and the tips of the forceps go towards the occiput. In the occipito-posterior positions we want the occiput to be the leading point. If we have marked extension the brow is the leading point, but we don't wish to deliver by the brow; so that it might be stated in this way, that the forceps would be so introduced that the tips would point to what we wish to be the leading point. When we introduce the forceps with the curve reversed we accomplish this thing. Then usually by exerting a fairly moderate traction, the head will flex.

Then we have to go back to our three factors, and as we have seen, the powers of the uterus, if not sufficient, must be supplemented in some way. The condition of the parts is an important thing. If the floor of the pelvis is not sufficiently resistant to give that resultant which is needed to throw the occiput forward, of course that forward rotation will not take place, consequently there is no need to dwell on the fact that firm parts are necessary. They may or may not be present. In any event, if they are not present, and if the pains are not very strong, we certainly shall not get anterior rotation. In many cases there is no loss of flexion. I don't mean to imply that that is a necessary accompaniment of posterior positions. The flexion may be perfect. In one case that I remember the flexion was perfect and had been so all through. In fact the head had been in the pelvis for ten days, and as the patient was a primipara the soft parts were firm; but the *vis a tergo* was vastly inadequate, and instrumental assistance was absolutely necessary.

What we do with any occipito-posterior position where flexion either has not been lost, or if lost

has been reproduced so that we have simply our well-flexed head and no progress? That would mean in most cases insufficient pains, and to come to the aid of the uterus forceps must be applied. Now if forceps are put on in the usual way with the tips anterior they are not acting in the way that they do in all other cases. That is to say, they are not put on with the tips pointing to the leading point. With the occiput posterior, and the ordinary curved forceps, the Braun or the Simpson, the forceps-tips point toward the anterior part of the head, and if forceps are so introduced we certainly don't get rotation forward (unless, as occasionally happens, the head rotates within the blades), and we do deliver that head with the occiput posterior, and take the consequences almost invariably of a serious perineal tear; so that it is a matter to be thought of very seriously that if by any means we can produce rotation forward it is our duty to do so. And it seems to me that it can be done.

I wrote a paper not long since, and it was criticised by one who did not read it, I am sorry to say, and lest I might be misunderstood again, I will explain myself here in detail. In that paper I spoke of the fact that I had repeatedly put on curved forceps to the extended head with occiput posterior, flexed the head and then proceeded to deliver with the forceps still reversed. Now I don't recommend that procedure at all. I think it is an extremely hazardous one. I have been very fortunate that I have done no damage. It can be done, however, and the only question is, is it the best thing to do? I say decidedly not, because we have in the straight forceps a much better instrument, and one which can be used without any risk of damage in reasonably careful hands. The straight forceps are not easily bought, however, those that are found in the shops being simply handle and blade without shank, and too short for use except when the head is on the perineum. Now with straight forceps applied, at the same time that traction is made, a slight amount of force may be used to rotate the head. It is of course definitely understood that I would not under any circumstances exert any rotation force whatever except during traction. I believe that if that rotating power is applied only with traction, it can do no harm and is successful. It has been so in my hands, and I think it would be so in the hands of any obstetrician. It requires no especial skill, and is simple; and we avoid all risk whatsoever to the soft parts.

If, however, one attempts to deliver with the tips of the curved forceps reversed, then he must remember that the tips are liable to plow into the vaginal wall and do serious harm; so that if curved forceps are used the operator ought to remember where the tips are, and not simply know where the handles are. He draws solely with reference to these tips, keeping them in the mind's eye, and keeping the tips in the axis of the vagina constantly. In that way delivery can be effected without harm. I have done it seven or eight times. I only mention that so that a man without straight forceps might hesitate before he puts on curved forceps in the usual way. I have a great horror of leaving a patient with a serious tear of the perineum, and I myself don't enjoy sewing up such a tear. The doctor is tired, the patient is tired, and it is no reason why a man should follow a line of treatment with a great risk of damage because he says: "I can sew it up afterward." If he has a serious tear he

may not get a primary union. The patient may have to have several operations afterwards before her soft parts are restored. It is too serious a question with her to make any operation a light one. But it is comparatively seldom that a large head can be delivered with the occiput posterior, as it certainly would be in most cases if the curved forceps are applied in the usual way with the tips anterior, without causing such a tear; so that I would be understood to-night as favoring very much the use of straight forceps in these cases, and of only employing the curved forceps in case the straight forceps are not obtainable. And I also believe that in careful hands curved forceps may be used with the tips reversed, with less risk to the soft parts than in delivering the head with the occiput remaining posterior. I say this with some hesitation, but if it leads to a discussion which is useful, I shall not regret it. I would not teach that to students; speaking to physicians it is different. It is not a thing to teach, but I simply express my own private view when I say that I should much rather myself do that than apply the forceps in the usual way knowing that that would mean delivery with the occiput posterior.

I believe statistics prove that only four per cent. of occiput-posterior positions are delivered as such. All the other ninety-six per cent. rotate, or can be made to rotate. It would seem to me that that per cent. could be reduced. I don't believe that even four per cent. of the occiput-posterior positions need be delivered as such. I have seen but two cases delivered with the occiput-posterior. Every other case has rotated either itself or by assistance. One of the cases was a difficult forceps case and a very large child; and that will lead me to speak in a moment of the influence a large head may have on the mechanism. The other was a case where the child came out in one pain after I reached the house. It was a little child, and might have been born in any position. We may say, I think, that even so small a per cent. as four can be reduced, and that we may have practically all the occiput-posterior positions born as anterior, with a due regard to the essential conditions of anterior rotation.

One word more about the reversed application of curved forceps and the delivery with them reversed. I don't mean that the head is delivered with the forceps reversed, at that time. I mean that the blades are reversed when applied, are turned in the vagina, so that the head is born as if originally in an anterior position. To repeat once more, I don't want to be understood as recommending that procedure. It is simply a choice of evils. If I would not do version, and had not straight forceps, and could not get them, I would sooner put curved forceps on in this way and deliver, than to put them on in the ordinary way and deliver with the occiput remaining posterior.

One word more. What often makes a great difficulty is the very large head. When it is very large it seems as if the mere size of the head made it impossible to rotate. Of course there is a limit to nature's capabilities, as we all know, and with the very large head I suppose that with the increased powers necessary to do the rotating that the rotating does not take place; but I have seen only one case where that rotation was not accomplished, or could not be accomplished. That case was delivered as a posterior variety.

I presume there are points which I have forgotten,

as I neglected to make any notes, and if I have done so I have no doubt that Dr. Reynolds will think of them and bring them up.

DR. EDWARD REYNOLDS said: I think Dr. Green has covered almost everything, but there are a few points which I have noted down. First, in the matter of treatment of these cases it seems to me that we must emphasize the importance of early diagnosis. We cannot treat the position without knowing what the position is, and we all know that there are very many of these cases in which early diagnosis by vaginal examination is a very difficult matter. It is in just these cases that we can appreciate most fully the value of abdominal palpation. If a man is in the habit of palpating every case, and making his provisional diagnosis before vaginal examination, I think he relies almost as much upon the former as upon the latter, and that gives him a means of knowing at the very beginning, in the greater number of cases, that he has an occipito-posterior position. Now he is prepared to watch the labor, and if the ordinary vaginal examination is inclusive he will not hesitate to make it more thorough, under either, if necessary.

I think if this course was pursued in every case we should have a much smaller proportion of cases in which a posterior position has gone on to extension, emptying of the liquor amnii, and all the difficulties that follow. I think it is almost impossible to deal with the treatment of these positions intelligently without considering the possibility of the occurrence of contracted pelvis. We know that in the flattened pelvis the head very frequently enters transversely, a position which is easily mistaken for the posterior occiput; and that in a contracted pelvis there is normally some little extension as it comes through the brim. I should, therefore, on being called to a case where I found the head resting upon the brim with a slight extension, feel obliged to measure the pelvis carefully before operating.

If the pelvis is found flattened, with the occiput posterior or transverse, of course, taking all things together, there would be little to think of except version, forceps to the flattened pelvis being much less efficient. If, on the other hand, the pelvis is found to be lessened in the transverse diameter, version becomes a much more serious matter. And if the pelvis is decidedly justo minor, I should myself feel inclined to attempt flexion and manual rotation to the front, followed by the application of forceps, in spite of the fact that any disturbance of the relation of the fœtus to the mother may complicate version, if done afterward.

Dr. Green will recall a case which we saw together a year or more ago, in which a firmly contracted ring around the neck of the child forced us to abandon version, and in which we did flex the head manually, and rotated to the front with ease, and finally, after a great deal of difficulty, delivered with forceps. We were both struck by the fact that one arm of the child had been swept round behind the back in such a position that, had we afterwards done version, we should probably have had an arm jammed under the occiput, and lost the child in consequence. I think it is well worth remembering that it is a dangerous thing to rotate a child that you may wish to turn afterward.

As to what Dr. Green has said about the extreme lowness of the brow in which version is still possible, I have been struck with that in one or two cases. I

think that this is true, not only in presentations of the brow, but also in certain cases in which labor has been going on for a long time, with the head arrested at the superior strait, and in which the first thing felt is the head, low down. I think if you have a patient under ether it is very easy to detect these cases by passing the finger up behind the head, and I have found in cases in which I supposed that it was in the inferior strait, that the parietal boss was really above the promontory. I think it is worth remembering that especially in brow cases you ought to get a finger way round behind and feel for the promontory before deciding that the head is low, the molding may be so excessive.

In speaking of cases in which the head has entered the pelvis, I think we should divide them into two classes, which, of course, merge into each other, but which would make a great difference with me as to what the treatment might be. There are a good many cases where a small head has extended for want of resistance from the soft parts, and is jammed by the occipito-mental diameter across the inferior strait. These cases can be handled in almost any way. The forehead can be pushed up, or the occiput can be pulled down with the fingers or with the vectis, and I have seen one case in which rotation could be effected with the hand. This with a little ether. In a case a little more difficult than that it is extremely easy, after flexing the head with the fingers, to apply the forceps, not exactly to the side of the head, but so that the posterior blade impinges lightly upon the side of the occiput, and the anterior blade upon the diagonally opposite side of the forehead, and the mere pressure of the forceps in locking them would start rotation, and traction, with a little rotary force, would complete it. In such cases I think there is no difficulty whatsoever in rotating with curved forceps.

If, however, you are dealing with a case in which to the difficulty of extension is added the difficulty of tight adaptation between the head and pelvis, it seems to me that we must be more cautious as to what we do with any instruments. The fingers will probably fail to produce flexion, and the vectis will not only fail, but may do harm from the greatly curved blade getting into the sub-occipital tissues, or from the leverage which the single blade has upon the soft parts of the mother, and we should probably have recourse to reversed forceps. With, however, tight adaptation, and the consequent necessity of making powerful tractions in order to deliver, it seems to me that in rotating with curved forceps we are running great risks of doing harm to the vagina, simply from the fact that the attempt to put on powerful traction makes it difficult to guide the points of the forceps, and remember just where they are. That, of course, is a case where the possession of the straight forceps is a great advantage.

As regards the possibility of rotating in all or nearly all cases, though my experience has been small, I have certainly seen two cases in which, after every attempt at rotation, the occiput persistently swung back into the hollow of the sacrum. It seemed to me directly posterior. One in particular started as an O. D. P., and as soon as flexion was effected, which was done by means of pressure upon the forehead, the occiput, instead of rotating forward, passed directly back. There it stayed, in spite of any attempt to rotate it forward. It seems to me that such cases must

be delivered face to pubes. What the cause was, I was unable to determine. There was nothing abnormal about the pelvis, so far as I could see.

There is, I think, another class of cases in which extension is very likely to occur, that in which the fetal head is somewhat abnormal in shape. I remember one case which I have delivered twice, in which each child's occiput seemed to be very long. Both were anterior positions, and yet both showed all through labor a marked tendency to extension, no doubt from the over-long occiput, and it seems to me that when such cases do take the posterior position, they are certainly the cases in which traction upon the occiput is likely to be most efficient; exactly the cases where, with the fingers or vectis over the occiput, we are likely to succeed without further efforts.

DR. JOHN P. REYNOLDS said: I would say briefly that the remarks made by Dr. Green on high forceps express my own judgment. I think that the personal equation counts for something; that with the same case one man will prefer version, and do it with great ease, while his neighbor, with more facility in the use of the forceps, is tempted to try that instrument. I think the general conclusion is what Dr. Green has stated: "I always like to recur to that elementary fact in regard to diagnosis, that the presence of two fontanelles fairly within reach should settle the probability that the unaided natural forces will bring the posterior fontanelle forward without difficulty, provided always that we are dealing with a pelvis and a cranium of average relative proportion, and I think it is quite important, in discussing the matter generally, to lay stress upon that fact.

I don't like the term "posterior position." The posterior variety of the left or right position seems to be a better use of terms, and this way of speaking carries with it the fact that it is the position on the left or the right side of the pelvis which varies the mechanism, not the condition that the occiput looks toward the posterior quarter, or the anterior.

If any gentleman has had the curiosity to read what has been said by the advocates of the vectis, I should be very glad to know whether my own understanding with reference to the advocacy of the vectis in medical writings is correct. I have not had access to the original works, which are mainly those of Belgian authors, but my impression has always been that the use of one blade of the forceps in the manner described to-night is not what the friends of the vectis would consider its proper use. I suppose that the vectis is always meant to be used from the front of the pelvis, either on the parietal bone or the mastoid process, the pressure being made from above downward; while the other hand of the accoucher, bearing upon the handle, protects the mother's soft parts. I think that when a man passes up his hand in front and pushes one blade of a forceps behind, he is not performing an operation proper to the vectis. It is, I suspect, such an employment of the vectis that its partisans intend, when they picture the instantaneous and perfect relief that they give after long, violent, and useless efforts with the forceps. In one word, they flex the head, or they fully extend the head. I may be entirely wrong. The vectis was, however, mentioned, and I venture to make this criticism.

I question whether there may not be some gentleman here, who, from having no special interest in the subject, fails quite to grasp what Dr. Green so perti-

nently said in regard to the guiding end of the cranium. In reading a book as familiar as Cazeaux, among general rules for applying forceps, one, for instance, that the man attempting it should be sure that there is nothing in between his blades except the child; and another, that he should never use force, etc., it will be found formally laid down that this, the concave edge of the blade, should always be turned toward that end of the cranium that we wish to bring round to the pubes. That covers all that has been said to-night about the posterior application of the forceps. Let the given cranium be transverse in the pelvis, and low enough down not to come into the category of strictly high forceps cases. Of course, one blade will here go in over the posterior ear, and the other lie behind the pubes. We wish to have the occiput come round; therefore, according to the rule just mentioned, we should put the concave side of the blades toward the occipital end of the cranium: the purpose being only to flex the head, not at all first to rotate. This whole matter of "posterior application" may be found stated at length in Cazeaux. Any operator of fair experience in the use of the forceps may without extreme risk afterward rotate without removing the instrument. That point has been treated very clearly to-night, but I like to connect this reversed application of the forceps with the author, whom I have named.

Just one other matter of nomenclature: the speaking of anterior rotation and posterior rotation. From the shape of the pelvic cavity, all rotation is rotation forward, and we cannot too well bear in mind the excellent description of Uvedak West, that there are two ways in which the cranium comes down: One, the good, in which the back end of the cranium is lower, descends, and rotates to the front; the other, perverse, in which the front end of the cranium gets lower, and rotates to the front. There is no such thing as posterior rotation. We must fix our attention, as Dr. Green urges, upon the leading part, the part that is on the way to the front of the pelvis. If the undesirable front part of the head rotate forward, the desirable posterior part has no chance but to remain behind. It can no longer "rotate" anywhere.

Dr. O. W. DOE said: There is only one point in the remarks of Dr. Green that I will touch upon, and that is the point of assisting rotation before the head becomes engaged in the largest diameter. He spoke about taking the lateral position. It occurred to me whether that might not be supplemented by the patient's taking either the knee-elbow position or by lying on her back, with the hips elevated during the interval between the pains. I think that in this way, with pressure by the fingers in the vagina, you might make the head rotate more easily in the superior strait. Another point, about the descent in cases where it is impossible to rotate the head: I should think that the per cent. of cases that do not rotate would be less than four. In my own practice, I have met with but one case of occiput posterior where I was unable to rotate the head, and I have certainly had more than twenty-five cases which rectified themselves. There was just this one case that I could not rectify.

Dr. FARLOW: How was that case delivered?

Dr. DOE: By forceps, with the occiput posterior, and without rupture.

Dr. E. W. CUSHING: I would like to ask of those gentlemen who have tried it whether, in putting on

the forceps with the tips reversed, it is handier to get at it with the woman on the side or with her on the back, as I should imagine it would be necessary to keep the handles pretty well back in delivering in that way. I have never had occasion to try it. It seems to me, in regard to rectifying the position in the beginning, that a distinction must be made between those cases that call in the attendant after the labor has been going on, and those where he is called in the beginning, as in private practice. If there by palpation of the abdomen, he could discover that it was a posterior position; it seems to me that it ought not to be very difficult to get the child turned over. I think many of us will remember the way, in the courses in Vienna, in which they turned the child over and then back in the abdomen, to demonstrate it to the students.

I don't think Dr. Green mentioned what he would do in those severe cases where the position becomes still worse, and the face is low down in the pelvis: whether in these cases, under ether, the head can be pushed back.

There is a method which, I think, may be recommended in the beginning of these conditions, where Dr. Green advises version. If you go so far and get the hand into the pelvis, and find the head in this position, and the brow down, the question arises whether, instead of going up and getting a foot, it would not be possible to grasp that head and turn it above the pelvis, aided by such postural change or manipulation of the abdomen as would turn the child within. I do not think that that has been referred to.

Dr. J. P. REYNOLDS: In reply to the question asked by Dr. Cushing, the nates should, of course, be brought well up to the edge of the bed; such a posterior application of the forceps can only be well made when the head is tolerably low in the pelvis. This method is not advisable in the high position. I venture to make one other remark that occurred to me as Dr. Green was speaking about the attempt to rectify the variety before the head was fixed. I think it will be found, as a matter of obstetric literature, that authors vary as to what side they would turn the child for that purpose.

In the case supposed, I should have turned the woman to the right rather than to the left, not agreeing with the speaker. At any rate it is curious what a divergence of opinion there is. The child holds a certain definite relation to the central axis of the body, the head will not shoot itself fairly, so to speak, into the barrel of the pelvis, and by making the weight of the body fall over towards the mother's right, some accoucheurs expect better chance of having the good end of the cranium drop into the inlet.

Dr. GREEN: I would like to say, while it is fresh in my mind, that I did place that woman on the right side, and not on the left. This matter of postural treatment is one of great interest, and in reference to what Dr. Doe said, I didn't mention the knee-chest position, but it would seem that the man's ingenuity at the time would adopt the position to bring about the desired result. Of course, with the patient in the knee-chest position, or standing up, or supposing the patient should walk around for a time, if the os was not in such a state that there was risk of rupture of the membranes, I think when we remember the inclination of the pelvis it would seem very likely that the person's sitting up or walking about would bring about the change.

As to the matter of grasping the head with the hand, as Dr. Cushing has said, there is only the one objection, that we run a risk of so disarranging the parts that we may get into trouble, as in the case that Dr. Edward Reynolds referred to. So with such a position of the head we try all the different ways, the idea being to get, if possible, the child back to the front. In some of these ways I believe the head can be swung round in a great many cases. If the labor has gone on for some time the brow may be so deep that postural treatment may be entirely useless, and we may have to turn with the hand after we have disengaged the head.

The importance which Dr. Edward Reynolds put upon the early diagnosis is a matter which cannot be insisted on too much. It is of course important in every branch of medicine. If this is bad, we need not get the bad results which follow the occiput-posterior position, because with the head high it is not a bad position, and I think can generally be easily rotated without any operative interference, so that too much importance cannot be laid upon this matter of early diagnosis. The diagnosis by external palpation is also very important. The importance of it has been so dwelt upon that students are now taught to make their diagnosis first by palpation, and they are taught, in making the report of a case to say: Provisional diagnosis, so and so; and then to proceed to give the results of the vaginal examination, and state whether the diagnosis is confirmed or not. At any rate the importance of abdominal palpation is much better appreciated now than formerly. If this is practised in a great many cases the diagnosis would be sure. If that is not conclusive, if one has a shadow of a doubt of the provisional diagnosis, and he does not confirm it easily, I think it is a matter of great importance to make the diagnosis early in labor with the patient etherized. It is best to etherize the patient to do it, and then it is a simple matter. It has seemed to me that men sometimes make mistakes because they do not push their diagnostic powers far enough. I say that knowing that I have made that mistake myself. We are too apt to put up one finger or two fingers and not finding anything, to say: "Well, I guess it is so." We ought to be ready to swear to it. Why not use the half-hand, or the whole hand, if necessary. If there is such a caput succedaneum that the sutures and fontanelles are obscured, so that we cannot feel sure, etherize the patient, and put in the hand under careful antiseptic precautions. Feel the whole head; at any rate be absolutely sure. What Dr. Edward Reynolds said was very much to the point.

Dr. CUSHING: I would like to know if examinations during the last weeks of pregnancy are not important.

Dr. GREEN: They are important, but one must remember that positions change, although of course they may not. If one can make an examination, and find that the head is in the pelvis, he knows that the pelvis is not contracted; and he knows that if the head is in the pelvis, the position is not going to change.

I was also glad to hear Professor Reynolds make the point that there was no such thing as posterior rotation. That is a point for us all to remember. The thing to think of is that the leading point of that particular case is going to rotate to the front and of course the other end must rotate backward. If it is a face where the chin comes forward, then it is the

back of the head that must go backward. What takes place when the occiput goes backward is that the brow rotates forward and becomes the leading point. It is not the occiput that rotates backward forcing the brow to the front; it is the opposite.

Dr. CUSHING spoke of further extending the head in brow presentations and converting them into face cases. I thought that was outside our discussion to-night. It is a point always to be remembered, however, if we have the occiput posterior, and cannot get the anterior rotation, and cannot overcome in any way the tendency to anterior rotation of the brow, it is better to make that a face than to deliver it as a brow with forceps put on in the usual way. With the occiput right posterior, the child's head when extended would become chin left anterior, and that would be a very favorable position for delivery. And if that extension has taken place, the forceps delivery in the usual way would be a simple thing comparatively. The only thing would be the risk to the child, whether as much as from other operative procedures, I will not say.

One thing more in regard to the posture of the patient in applying the forceps. I have always done it with the woman on the back. When the forceps are applied reversed, as I have said, one is all the time thinking of the tips. His mental eye is fixed upon the tips of the forceps, which are to be kept in the lumen of the vagina. If one goes on pulling, keeping his eyes on the handles, he will make sad havoc with the vaginal wall. With the straight forceps that danger disappears. Then a man sees what way he is pulling, from the handles. Thus straight forceps are the safest instrument, and should be used if obtainable.

THE NEW YORK ACADEMY OF MEDICINE.

STATED MEETING March 15, 1888.

Dr. FREDERICK R. STURGIS read a paper on

SOME QUESTIONS IN CONNECTION WITH SYPHILIS
HEREDITARIA TARDA.

The subject, he said, was one of much interest to the general practitioner, as well as to the syphilographer, on account of its relations to the etiology of many cases met with. In certain instances the agency of syphilis was suspected, without the physician's being able to prove the actual presence of this disease. It was only very recently that the manifestations of late hereditary syphilis had been at all appreciated by the profession. During the last twenty years much had been accomplished in clearing the matter up; but notwithstanding all the advances that had been made in this direction, many points still remain unelucidated. The question was still asked, Can hereditary syphilis remain latent for years? Until recently, this was supposed to be a fact in certain exceptional cases of acquired syphilis; but the weight of evidence now showed beyond question that such a thing never occurred in the latter. It was the generally accepted opinion at the present day in cases apparently of this kind that other and minor manifestations of syphilis invariably preceded the so-called tertiary symptoms. There was always an initial lesion, although no trace of it might afterwards be found.

It was at one time supposed that in all cases of hereditary syphilis the disease showed itself at birth,

but the fact was now recognized that many cases occurred in which the children were apparently perfectly healthy when born. Statistics showed, however, that in a large proportion of cases syphilitic lesions made their appearance before the end of the third month. Of 249 cases collected by Diday and other authorities, the disease showed itself in 118 by the end of the first month, in 117 between this time and the end of the third month, and in 14 later than the third month. Of Diday's own cases, in two the lesions did not appear until after the first year. In instances in which the disease just showed itself at a very late period the question of acquired syphilis always had to be taken into consideration.

The usual history of inherited syphilis, exclusive of those cases in which the child was born syphilitic, was, that after a few weeks or months the earlier manifestations of the disease made their appearance, such as a macular eruption, or mucous patches of the mouth and tongue. At this early stage there was usually no eye or ear disease, or affections of the bones or joints. These lesions soon passed away, and there might be no further syphilitic trouble for years, or until the age of puberty was reached, when there might develop keratitis, otitis, disease of the bones or joints, or deep ulcerations in the buccal or nasal cavities. Unless the early history of the patient could be accurately learned, it might be supposed that these late manifestations constituted the first appearance of the disease. Thus, Fournier related a case in which a man of thirty, who strongly denied having ever had syphilis, became affected with gummous ulcerations of the penis. By communicating with the patient's family physician, however, he ascertained the fact that his mother when *enroute* with him had acquired syphilis from her husband, that at the age of two years he had had syphilitic disease of the knee-joint and peripheric ulcerations, and that when an infant he had infected the nurse who suckled him with syphilis; while at the age of fourteen he had keratitis. The missing links in the history were thus furnished by the family physician.

Dr. Sturgis said, in conclusion, that even the diagnostic sign of Hutchinson's teeth was often absent in these cases, but he believed that in every instance of hereditary syphilis, if the history could be fully ascertained, it would be proved that these later lesions had always been preceded by earlier and lighter manifestations of the disease.

DISCUSSION.

DR. EDWARD L. KEYES said that he could state with positiveness that it had not been his experience to see any instances of what could be called late hereditary syphilis. He had met with alleged cases of this character, but in all of them he was able to detect some scar or deformity which convinced him that the late lesions present were not the first manifestations of syphilis in the patient. He had followed up a number of individuals who were known to have had hereditary syphilis, and found that after various periods of latency the disease sometimes broke out again before the age of twenty-one. Before they reached the age of twenty-five, however, when crystallization of the system had taken place, the trouble had been pretty well gotten through with; and he did not recall a single instance in which a new symptom of hereditary syphilis had appeared after this latter age.

Still it was quite possible for us to believe almost anything in regard to syphilis, because it was such an irregular and erratic affection.

The character of the disease in any particular case was also largely a matter of soil; so that he did not believe in a virulent or a benign type of syphilis *per se*. The seriousness of the symptoms would depend to a great extent on the constitutional characteristics of the subject, and in this connection he referred to three brothers, all of whom had syphilis at different times, and in all of whom it produced grave lesions of the central nervous system, which in one of them proved fatal. Yet the third of the brothers gave the disease to a young woman, who had it in an extremely light form. The younger the subject, as a rule, the more serious the disease was apt to be, whether it was hereditary or acquired, on account of the more active changes taking place in the system during early life. Hence, the older the subject the less serious its effects; and in the aged these were comparatively trifling.

He then related the case of an infant born under his observation, in whom the disease was so markedly developed that he despaired of its life. It shed its nails, and had pemphigus of the soles and palms, bad snuffles, and enlarged epiphyseal extremities. He commenced treating it, however, with one-fiftieth of a grain of bichloride of mercury every two hours, night and day, and it soon began improving. At the age of six months it was not only alive, but thriving vigorously, and it still continued to take the same dose of the bichloride every four hours. In future years, if this child should have syphilitic lesions, this early history might be lost sight of, and it might perhaps be considered an instance of late hereditary syphilis. It was easy to see how, in many instances, the early manifestations of the disease might entirely escape observation or be lost sight of. The method of treatment adopted in this case was one which, he said, he had worked out some years ago at the New York Foundling Asylum, and he had always found it very satisfactory. It was his usual practice to give the one-hundredth of a grain of the bichloride every hour, if this was practicable, and he had found that this never produced mercurialization or diarrhoea. In fact, at the Foundling Asylum it had often seemed to have a salutary effect upon the diarrhoea from which the infants were so apt to suffer.

DR. P. A. MORROW said that the subject under discussion had been comparatively neglected, and that it was only within the last few years that we had begun to appreciate how wide might be the impress of syphilis upon the organism. In many cases it was impossible to get at the history of the individual from birth, and he said he should be very much inclined to doubt whether any patient whatever who manifested the later lesions of syphilis had entirely escaped the earlier symptoms of the disease. Only to-day, however, he had examined a girl of eighteen, whose reputation was above suspicion, who was undoubtedly suffering from hereditary syphilis; yet it was impossible in this instance to get any history of syphilis in infancy. She was the subject of many cicatrices, while the soft palate and palatine structures, as well as other portions of the vocal apparatus, had been swept away, and she was completely aphonic.

He went on to say that he could see no reason why hereditary syphilis should not continue throughout a

lifetime, just as the acquired disease was often known to do. It was essentially the same affection. So far as his experience went, there was absolutely no history of the early manifestations of the disease in many cases; but this was, of course, merely negative evidence, and it was contrary to his general knowledge of the course of syphilis to suppose that in any instance the patient had really escaped these earlier manifestations. In conclusion, he referred to an infant affected in much the same way as that mentioned by Dr. Keyes. It was apparently moribund, and it was a wonder that it lived at all. It did live, however, and several weeks later developed into a healthy child; yet in this instance no medication whatever was employed. He did not wish to depreciate the value of mercury in such cases, but here the mother only was treated.

Dr. ROBERT W. TAYLOR said that it was his firm conviction that there were always some manifestations in early infancy, though these might be so ephemeral and unaccompanied by destructive action, that they left no permanent trace. We might expect the later lesions to appear at almost any time up to about the twenty-first year. In the chapter on inherited syphilis in Bumstead and Taylor's work, he said that he had placed the usual limit at twelve years (although, as was well known, manifestations of hereditary syphilis occasionally showed themselves at a considerably later period), for the reason that he feared that other affections might be confounded with inherited syphilis, which was so comparatively rare at these later ages. Dr. Taylor said that in his work published in 1876, he was the first American to call attention to the bone lesions of syphilis, and to bring them out of the slough of so-called scrofula. All the way up to the age of puberty we might expect the later manifestations, but when we got beyond the twenty-first year it was pretty hard to say whether you were dealing with hereditary syphilis or not. As a rule, the activity of the lesions occurred before the tenth or twelfth year. He could not agree with Dr. Keyes in regard to the comparative lightness of syphilis in old people, for in his experience he had found it exceedingly severe and troublesome in such subjects.

Dr. L. BOLTON BANGS said that he was in accord with the other speakers in regard to the question at issue. His own observation had been that almost invariably, by careful inquiry and investigation, he was able to find some history of previous symptoms; and he mentioned a case of late tubercular syphilide of the face in a patient twenty years of age, in which he found that there had been unmistakable signs of syphilis in early childhood.

Dr. CHAPIN mentioned the case of a child of four years, in which syphilitic periostitis affecting both tibiae appeared, apparently without any previous manifestations of the disease, as the patient had been carefully watched from birth by its parents. He agreed with Dr. Keyes as to the importance of the kind of soil into which the syphilitic infection was introduced, and said that he had known of many syphilitic infants with snuffles and mucous patches who were fat and robust, and really seemed to thrive on the disease. As to the later lesions occurring in individuals beyond the age of ten or twelve years, he thought they might as well be called scrofula as syphilis. If there were no typical lesions of syphilis present, it was his practice to put the patient on cod-liver oil and other tonic

treatment, as he was unable to tell whether the trouble was really syphilitic or not.

Dr. ALEXANDER S. HUNTER related the case of a young woman of eighteen who suffered from extensive destruction of the nasal bones and soft palate, which he believed to be due to hereditary syphilis. He had had the opportunity, however, of interrogating those who had been with the patient from infancy, and they stated positively that there had been no manifestations of the disease until she was fifteen. Still it was, of course, entirely possible that they might be mistaken on this point.

Dr. L. EMMETT HOLT related cases in his experience, and said that he thought it was the easiest thing in the world for the earlier manifestations of hereditary syphilis to be overlooked. He then called attention to the importance, as a diagnostic sign of the disease, of enlargement of the epitrochlear glands. Although this condition might be due to other causes, in his experience very few cases of syphilis occurred without the enlargement of these glands.

The President, Dr. A. JACOBI, said that when syphilis occurred at birth it was not always easy to recognize positively. There was sometimes great difficulty in distinguishing between a syphilitic and a rachitic bone, or rather cartilage, and particularly when the ribs were affected. If the difficulty, then, was great at this early period, it was still greater later on. It was a fact that where a number of children were born in a syphilitic family the manifestations were apt to become less and less marked in each successive child, and the disease might at last be undistinguishable from the symptoms of so-called rachitis or so-called scrofula. In regard to the age at which hereditary syphilis first made its appearance, it was a peculiar fact that the cases first occurring in adolescents or adults were all reported by the older writers of twenty-five, thirty, or forty years ago. It did not appear that any of the later writers mentioned any such cases. Thus, Burke said that he never saw one, and Diday, who said the same thing thirty years ago, was still of the opinion that such cases did not occur. Having referred to other authorities, Dr. Jacobi said that probably one reason why the earlier manifestations were apt to be overlooked in former years, was on account of the universal use of calomel, which was an anti-syphilitic remedy, in all the diseases of children. Personally, he said, he had seen a few cases of late hereditary syphilis. The oldest of these patients was over thirteen when the late lesions presented themselves; but in this instance it was easy to trace the disease back to infancy.

Dr. STURGIS said that he had for the most part reserved an expression of his own opinion until the close of the discussion. What he meant by the late lesions of hereditary syphilis was those occurring after the age of five years, and he believed that such late manifestations did not occur without previous symptoms. He mentioned the case of a patient of seventeen, who was sent to him for diagnosis, with a cold inflammation of the knee-joint, which had resisted all forms of treatment. On careful examination he was able to detect traces of an old keratitis and otitis. The children in whom these late lesions were found were apt to be born apparently healthy, and when the earlier manifestations did occur they might escape notice and remain untreated. It was in the untreated cases that

the late lesions were most liable to make their appearance. At the age of five or six years we were likely to have punctate interstitial keratitis, and disease of the ears, joints, etc., and nothing would be found to do any good until the iodide of potassium was resorted to. Under this treatment the child would probably get well rapidly. At ten there was apt to be another outbreak of the disease, and about the age of puberty the most serious explosion usually occurred. After the age of twenty-five the disease would generally be found to be acquired. If a patient over this age presented himself with the earlier symptoms of syphilis we could almost invariably suspect that the disease was acquired, since the early manifestations of the inherited disease were most likely to show themselves within three months from birth, and always did so within twelve months.

Recent Literature.

A Manual of Physiology: A Text-Book for Students of Medicine. By GERALD F. YEO, M.D., Dublin, F.R.C.S. Third American from the second English edition. Philadelphia: P. Blakiston, Son & Co. 1888. pp. 758, and 319 illustrations and a glossary.

This is a new edition of a book already favorably mentioned in this JOURNAL. The most noticeable improvement will be found in the chapter on the functions of the brain. The illustrations have become slightly more numerous, and are much better printed in the copy before us. The glossary has also grown in extent and quality. On the whole, it is still a good book of medium size, whose teaching is generally sound and conservative. The present condition of our knowledge of deglutition is, however, not given, and the relation of urea to the liver is not presented with that exactness which various trustworthy experiments would seem to warrant. The description of the "chyme" on page 159 is at variance with that of the glossary.

Miner's New Index Rerum for Students and Professional Men for Saving Knowledge. Pocket size. Also arranged for An Account Book for Petty Accounts for Physicians and Others. JOEL A. MINER, Ann Arbor, Michigan.

Of these indexes, several sizes are published, one or other of which will be found useful by physicians, lawyers, and other students. Topics beginning with A are placed together in the first section of the book; those with B in the second section, and so on. Each section is shown to the eye after the manner of an index, so that the book can be opened at each section instantly. There are two possible ways of subdividing the topics that come under each letter: One is the strict dictionary arrangement of topics, which subdivides the pages under each alphabetical section by the letter that first follows the initial letter. The second method groups the topics under each letter into six groups, according to the first following vowel (a, e, i, o, u, y). This second method is followed in these indexes.

— Governor Hill sent to the Senate, last week, the name of Dr. E. C. W. O'Brien, of Buffalo, to be Health Officer of the port of New York.

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CEREBRAL LOCALIZATION.¹

In spite of the attacks made upon it by Brown-Séquard and Goltz, the doctrine of the localization of function in the cerebrum since the day when Broca showed that the left third frontal convolution contained a centre for speech, has steadily gained ground, notwithstanding the seeming contradictions of experimentation and of clinical and post-mortem observations, and notwithstanding the contentions of its adherents on questions of detail.

In the first place the doctrine of localization finds a certain amount of support in the results of anatomical investigation. It is not entirely without significance that in the so-called motor regions of the cortex, there are ganglion cells of a different shape from those in other parts of the brain. The great amount of work that has been done in the study of secondary degeneration, von Gudden's researches into the degeneration of the optic tract, and Flechsig's investigations into the development of various systems of fibres, all tend to the belief that there are definite tracts in the brain, whose function it is to conduct special forms of nerve force.

Physiological experiment, added to the hints afforded by anatomy, certainly lends confirmation to this belief. Of course there are abundant sources of error. It is not easy to say whether the symptoms that follow the removal of a part of the brain are symptoms of arrest or symptoms of deficit, and, when the only final test in regard to this point is applied — that of time — another source of error arises. In all animals, it is possible that there may be a certain amount of substitution in the brain; when one centre is destroyed its functions may be performed wholly or in part by some other centre. The lower down in the animal scale we go the more pronounced this substitution is, and experiment has shown that permanent loss of function is far less common from the destruction of given centres in the guinea-pig or rabbit than in the dog. Even in man, however, this substitution does occur in childhood; as in the cases where, after destruction of the

¹ Continued from page 382.

left third frontal and upper temporal convolutions in infancy, the child has learned to talk, and, when it reached adult life, it has become aphasic from lesion in the same region in the right hemisphere. Nevertheless, experiments on animals have shown, and continue to show, that after removal of certain portions of the cortex, there are permanent symptoms of deficit. Take, for instance, the experiments made to determine the visual centre, which Brown-Séquard thinks does not exist. Goltz, rejecting the theories of cluster-localization, showed two dogs at Baden-Baden in 1886, from which he had removed both occipital lobes, yet the animals could see. Such an experiment, therefore, would seem to disprove the theory of Munk that the occipital lobes contain the centres for vision, and that removal of both lobes will produce blindness. Goltz's methods, however, are not accurate. He has himself abandoned his earlier method of washing away the brain-tissue by a stream of water, as it has been proven that this method cannot be depended upon to remove definite portions of brain-tissue. Moreover, it was shown by Fritsch, at the Congress of Internal Medicine at Berlin, in 1884, that Goltz, even with his present methods, is not accurate in his "symmetrical" extirpations of portions of the cortex, and that his attempts at extirpation had not removed the regions which he claimed had been extirpated, for instance, that the entire region of both posterior extremities and part of the centre for one anterior extremity were intact when he claimed he had removed them. The difficulty of removing both occipital lobes, is, in fact, so great, that Munk, who attempted to remove them in eighty-five dogs, succeeded in doing it completely and satisfactorily, and in keeping the animals alive in only four. The arguments against Munk's theories in regard to the centres of vision, therefore, cannot be accepted until Munk's experiments have been repeated, and until it has been shown that removal of the centres in the occipital lobes has been complete and that the animals have still been able to see, which has not yet been done.

The symptoms seen after the removal of portions of the brain are in many cases permanent, and are symptoms of deficit, rather than of arrest. Even if we assumed that the lesion caused symptoms of arrest solely, it is hard to see why a lesion in one place would cause arrest of one function, and in another place arrest of another function, unless there is some localization of function in those regions, if a lesion anywhere can cause inhibition of any function, still accurate observations are wanting to show, that lesion of the occipital lobes can cause monoplegia, or lesion of the ascending convolutions can cause blindness.

The weight of clinical evidence also seems to confirm the results of physiological experimentation. Many cases that have been reported are, of course, defective. The observation and the analysis of symptoms has not always been complete, and the observers have not always been competent. Post-mortem investigations, too, have been misleading from the defective knowl-

edge of the anatomy of the brain. Nevertheless, the clinical evidence in favor of localization is too great to be set aside. Wilbrand's and Seguin's researches into the question of hemianopsia, for instance, have confirmed Munk's discoveries; and now that it is known that there are centres in different parts of the brain for each of the different functions of speech and not one common centre, the case, where there has been a lesion in one of these recognized centres and no speech-disturbance have become much fewer and the majority of them are too inaccurate to establish a theory.

The theory of exactly limited centres, the sharply-defined circles depicted by Ferrier, is probably not correct, nor is it certain that the psycho-motor centres are purely motor; in fact, it is more probable that the psycho-motor centres are, as Munk thinks, rather sensori-motor than purely motor. These centres, as Luciani and Seppilli think, and as Horsley's observations seem to prove, probably overlap one another, and shade into one another, but that there are more or less distinctly localized centres for various functions in the cortex seems fairly well proven at the present day, and Brown-Séquard's views, instead of being novel, are, in spite of the weight of his name, merely a repetition of the theories of twenty years ago, theories which are now abandoned by most physiologists.

MASTOID INFLAMMATION.

THE public and the profession have heard so much of this subject of late, in connection with the finally fatal attack from which a widely known public man has been suffering, in New York, and for which the usual operation was performed—an attack said to have originated from exposure during the late blizzard—that a short review of the salient points in connection with mastoid inflammation, may prove of interest to our readers.

The history of the recognition and treatment of diseases of the mastoid process is a curious and interesting one. It shows the gradual evolution of what are now well-known pathological processes and generally acknowledged surgical procedures from the age of total ignorance, though temporary, because misunderstood, success, through obliquely equally temporary from misunderstood failure, till finally modern pathology has placed the diseases of this region and their treatment on a firm and scientific basis.

In the older writers, occasional mention is made of the possibility of operations in this region for the relief of certain aural symptoms. Riolanus, in the latter part of the fifteenth century, proposed opening the mastoid cells; and in Sir Thomas Brown's letters to his son, dated about 1650, he seriously discusses, but advises against "opening of the mastoides to afford exit to the tumultuous noises and winds therein confined." Petit is generally considered to have been the first to perform the operation of opening the cells for the removal of secretion, about 1750, but Jasser

was the first to do it for caries of the bone in 1776. Occasional operations, generally futile, followed for the relief of subjective noises and other aural symptoms, till Bergen, a Danish surgeon, had it performed on himself to relieve an obstinate deafness, with violent tinnitus, the result of which was his death from meningitis. From this time the operation fell into disrepute, and can only be said to have been fully re-established within the last twenty-seven years (since Troeltsch's case in 1861), when modern pathological research has shown the different conditions which exist within the bone, together with the complications resulting from this disease of the bone, and modern surgery has demonstrated the methods of dealing with these conditions and complications.

The mastoid cells form part of the tympanum, their diseases are secondary to diseases of that cavity, and are essentially various forms of otitis and periostitis. Imagine a bone like other bones, with its periosteum, minute vessels penetrating its substance, and the other characteristics of osseous structure, but, unlike other bones, hollow and lined internally with a mucous membrane, which forms an internal periosteum. Put such a bone within the skull, next the brain, let the dura mater act as periosteum on two of its surfaces, connect the venous circulation of its mucous membrane directly with the sinuses of the dura mater, and we have the chief peculiarities of the mastoid process, except that it should be remembered that its cortex is very thin.

Pathology shows that in almost all cases of tympanic suppuration, the mucous membrane of the mastoid is also more or less inflamed, in fact, that there is a periostitis within the bone. We have here a simple explanation of almost the whole pathology of mastoid disease. As the result of this internal periostitis we may get suppuration confined within the bone, a round-celled infiltration of the substance of the bone, a breaking-down of this cellular infiltration with resulting caries or an organization of this infiltration with resulting hyperostosis, an extension of the suppuration along some of the minute foramina to the external surface of the bone, setting up external periostitis, which, if it occurs within the cranium, means inflammation of the dura mater, or finally we may get an extension of the inflammation along the bloodvessels to the brain sinuses, giving phlebitis, thrombosis, and embolism.

The infrequency of severe mastoid disease compared to the frequency of slight inflammation of this part (as has been said, almost every case of tympanic suppuration showing some involvement of the mastoid), we can refer only to the *vis medicatrix nature* which resolves the inflammation before it has proceeded much beyond the stage of congestion. In severe cases of the disease we may get any or several of the results of otitis, limited to a small portion of the bone or involving the entire mastoid and petrous or even the whole temporal bone, and, with an extension of the disease inwards, the complications of meningitis,

phlebitis of the brain-sinuses and brain-abscess. The frequency of tympanic suppuration can be appreciated when it is remembered that probably nine-tenths of the suppurations of the ear (otorrhœas) are due to inflammations within the tympanum and the so-called "gathering in the ear," is now known to be a disease not only liable to injure or destroy the hearing, but subject to very dangerous complications both in the brain and in the deep tissues of the neck.

PRODROMIC SIGNS OF LOCOMOTOR ATAXIA.

At a recent meeting of the Société de Biologie, Paris, Galezowski, in speaking of the precursory signs of locomotor ataxia, mentioned two to which his attention had been particularly attracted of late years: paralysis of the muscle of accommodation, and anæsthesia of the peri-orbital region. These, he thinks, are often the first symptoms of the disease in question. The paralysis of accommodation is not accompanied by mydriasis or paralysis of any other of the muscles innervated by the third pair; as this paralysis is always limited to one eye, it gives rise to no trouble of vision when the patient uses both eyes.

The paralysis of accommodation which succeeds diphtheria is always binocular, while that which results from certain contusions of the eye is not accompanied with anæsthesia of the orbital region. The same is the case with the paralysis which follows syphilis.

In hysteria, according to M. Galezowski, the paralysis of the ciliary muscle is always accompanied with mydriasis, and in general paralysis of the insane, besides paralysis of the accommodation, there is hemianopsia.

TREATMENT OF EPITHELIOMA BY MILD CAUSTICS.

In the *Journal of Cutaneous and Genito-Urinary Diseases* for January, 1888, Dr. Daniel Lewis has an article on the treatment of epithelioma by mild caustics, which he condemns as stimulating, rather than repressing these growths. One patient was treated for epithelioma of the lip by nitrate of silver; as a result, the cancer spread until it involved the left side of the face and the inferior maxillary region, and the patient died.

Another case was that of an old lady who had an epithelioma of the ala nasi on the right side, which was removed by curetting, and on the left cheek a smaller one, to which pyrogallie acid ointment (one part to two) was applied. The disease on the right side got well, but that on the left continued, and after months of trial surgical interference was resorted to, and a prompt cure effected.

He thinks that pyrogallol may be successfully used in semi-malignant ulcers of the skin which have no indurated borders, but that it is very injurious in epitheliomata.

Upon a healthy skin, cauterants merely destroy the surface epithelium, while stimulating the deeper tissues into greater activity, and, if there is a diseased area, this must also be excited. "This brings us," he says, "to the laying down of this proposition, justified by experience, as well as philosophy: *No mild caustic application should ever be made to any cancerous surface under any circumstances.* Only such caustics are admissible as completely destroy the diseased tissue; such remedies destroy the vessels and lymphatics adjoining, and so prevent dissemination of cancer elements."

TWO NEW TEREBINTHINATES.

PROSSER JAMES, in the *Lancet*, March 10, 1888, calls attention to two new products allied to the terebinthines: the essential oil of mountain pine and hydrate of terpin.

The former is obtained from the *Pinus pumilio* (mountain pine) by distillation with water. A crude preparation of the mountain pine is used much at the German spas to impregnate the water of baths in the treatment of rheumatism and gout, and also by inhalation in bronchial affections. The purest preparation is known as "pumiline." It has the odor of fir balsam, is thought to be disinfectant, and is less irritating than other fir oils. The oil may be inhaled in a steam atomizer, ten to twenty drops at a time being mixed with the boiling water, or it may be diffused through water by means of magnesia or talc in the following proportions: forty to sixty minims of the oil, a scruple of magnesia, and one fluid ounce of water. It can be taken internally like terebine, and its effect on the organs is much the same.

Terpin hydrate affords a curious contrast to the other preparation. It has little taste, no odor, is solid and crystallizable, and insoluble in cold water. It is given in pills of two grains each every three or four hours, or in wafer paper, or the hydrate may be dissolved in glycerine and given in the dose of two or three grains to the teaspoonful as a beginning dose. As a tasteless, odorless substitute for the terebinthines, whose general properties it possesses, it is principally employed.

MEDICAL NOTES.

—Of the two latest deaths from rabies among patients who had submitted to Pasteur's treatment in Paris, one was a boy, aged four, who was bitten by a mad dog on December 6th last, and was under treatment at Pasteur's Institute from the 12th of December, 1887, until the 7th of January, this year. He died of hydrophobia on January 22d. The second case was that of a woman, aged fifty-two. She was bitten on January 23d of the present year, and was placed under Pasteur's treatment on January 29th. She died on February 17th, of hydrophobia.

—Dr. Morell McKenzie has received a decoration from the Emperor Frederick.

—The danger of too violent exertion for elderly persons especially those with cardiac weakness are familiar enough in general to medical men, but they are not sufficiently appreciated by the laity. According to the press reports Mr. Matthew Arnold's lamented death seems to have been caused by such imprudence. He arrived in Liverpool last Saturday to meet his daughter who was on her way to England from New York. During the evening he was in exuberant spirits. He took a long walk and tried to clear a railing near the house by a jump. He failed but again made the attempt, taking a running jump, and succeeded. No ill results appeared at the moment. Mr. Arnold knew he suffered from a disease of the heart, and Dr. Sir Andrew Clark had warned him against any sudden exertion. The next day after this exertion he went to church, apparently well, and after luncheon went out to walk with Mrs. Arnold. He was still in high spirits. Soon after leaving the house he suddenly fell forward and never afterwards spoke. Immediately after Mr. Arnold fell he was carried into the house of a doctor near by. He was still breathing, but was unconscious. The physician poured spirits down his throat, but he never rallied and died within four minutes after being taken indoors.

—Sir Andrew Clark has been elected president of the Royal College of Physicians after quite a sharp contest, his principal rival for the honor being Dr. Richard Quain.

—We are indebted to an esteemed daily contemporary for the following curious account of the surgical interference in Mr. Conkling's case: Dr. Sands made an incision back of the right ear, on what is called "the squamous portion of the temporal bone." After the incision a chisel was inserted, and the back of the skull was raised by the use of a mallet. This is known as the "mastoid" process, as distinguished from trepanning. The aperture thus made permitted about an ounce of pus to ooze out, the pus not being extracted, but simply permitted to flow.

—In introducing the Budget to the British parliament the Chancellor of the Exchequer announces a tax of £1 on "pleasure horses." Our English medical brethren evidently fear that this is to be construed to apply to doctors' horses, though it is difficult to see why it should. If the English doctor has to pay a tax on both his horse and carriage he will, in many cases, have to go afoot. The plan to tax "all horses which could be broadly described as belonging to the well-to-do" would certainly often exempt the doctors, while the difficulty on the more tenable basis of taxation in discriminating between horses owned for pleasure and use is well-nigh insuperable.

—The fashionable obstetric nurse is telling her lady patrons that her dates are all full up to a year in advance. The ladies desirous to stand next in her list will have to be endowed with an unusual amount of prescience.

— A book agent presented himself at the New York Polyclinic, when he was found to be affected with small-pox. He confessed that during the ten days that he had been ill he had continued to ply his craft.

— A correspondent of the *Lancet* describes the case of a patient aged about forty, who had been suffering for a week from constipation, with extreme pain and great tenderness and swelling in the region of the cæcum, also vomiting and flatulent distension, which was considered a case of obstruction with accompanying typhilitis. The physician prescribed belladonna, calomel, and opium, and gave copious soap-and-water injection, ordering hot applications to the part, but without much benefit. He afterwards injected warm olive oil, followed by more soap-and-water, with the result, in a few hours, of dislodging a quantity of hardened feces, containing a great number of live white maggots. He asks the question, Were the maggots the result of fecal decomposition? Or were they antecedent to it, and really the cause of obstruction by setting up inflammation?

BOSTON.

— The Massachusetts General Hospital has recently been given \$50,000 by Miss Helen C. Bradlee, of Boston, as a memorial of her brother, the late L. Putnam Bradlee.

— The Executive Committee of the Instructive District Nursing Association writes to inform us that since April 9, 1888, there may be found at No. 6 Carver Street an agent, who, on personal application of the physician, or in response to a note signed by the physician, will provide a nurse for the care of the sick poor, and for the instruction of those in charge. The nurse will be sent to any part of the South End, North End, or West End, or the city proper. The agent will be at the office to receive applications from 9 to 11 o'clock, A. M., every day of the week, Sunday excepted. If the physician wishes to see the nurse, he will find her at the office from 2 to 2.30, P. M. If he be unable to meet the nurse at the office, he is requested invariably to leave *written* orders for her, with address of the patient, with the agent. Every application will receive the immediate reply of the agent by the mail of the same day. Nurses will not attend the patient on Sunday nor in the night.

NEW YORK.

— A special committee of the State Charities Aid Association, appointed in January, 1887, has made a report advising the separation of the administration of charities from that of correction in New York City, the suggestions contained in which are to be embodied in a bill soon to be presented to the Legislature. It is recommended by the Committee that the present Department of Charities and Correction be divided into three parts, each part to be under a separate Commissioner, who shall be responsible to the Mayor. These Commissioners would be as follows: (1) A Commissioner for the sick and infirm, controlling the hospitals and almshouses, containing at present about

3,200 persons. (2) A Commissioner for correction, controlling the city prisons, the penitentiary, and the work-houses, containing now about 4,600 persons. (3) A Commissioner for dependent children, controlling the children's and infants' hospitals and the idiot asylum, containing about 800 persons. The Committee also suggests that the system proposed would be incomplete unless the Commissioner of the third department had some power of supervision and transfer over the 15,000 or 20,000 children now supported by the city in private institutions.

— At the last meeting of the Section on Public Hygiene and State Medicine of the Academy of Medicine, Dr. Henry D. Chapin read a paper on "The Survival of the Unfittest," in which he maintained that the methods of our modern civilization tended to perpetuate unfitness and defective types, such as were represented by criminals, lunatics, and paupers.

— The corner-stone of the Montefiore Home for Chronic Invalids, a Hebrew hospital which is to cost \$175,000, and will be situated on 138th Street, was laid with appropriate ceremonies on the 5th of April.

— The annual dinner of the New York Post-Graduate Medical School and Hospital was held at the Hotel Brunswick on the 10th of April. Dr. D. B. St. John Roosa presided, and in his report the Secretary, Dr. Rice, stated that during the present session there were 265 students in attendance.

Miscellany.

UNPLEASANT LUNG SYMPTOMS FOLLOWING THE USE OF ANTIPYRINE.

OUR readers have already had their attention called to unfortunate results following the use of antipyrine. The following note, communicated to the *British Medical Journal* by Walter Sturge, M.D., presents further ground for caution in the use of the drug by persons who have never taken it before. The writer says:

"A member of my family liable to migraine was attacked in the ordinary way a few days ago, and I administered for the first time a dose of five grains of antipyrine in powder, with the following curious result: Five minutes after taking it, the 'deadly sickness' which was previously present seemed to give way, and an 'expanding sensation' was felt, rising from the stomach upwards. Almost immediately she sneezed violently for about twenty times running without pause. The face and eyes became deeply suffused; tears began to flow; quantities of mucus flowed from the nose; the breathing became hard and labored, accompanied by a feeling of suffocation; there was complete inability to lie down. A violent cough shortly came on, and large quantities of mucus were expectorated; at the same time, there was very profuse sweating.

"After these phenomena had lasted about half an hour, intense itching was felt on the insides of both thighs, and, on examination, there was found a thick outcrop of urticaria, which soon extended on to the

abdomen. There was also a strong coppery taste in the mouth — not continuing, but coming on in violent bouts — and an equally strong smell of the same metallic nature, also intermittent. There was a loud singing in the ears, which felt intensely congested. The pulse was quick and very full.

"After the symptoms had lasted about three-quarters of an hour from the commencement, they gradually disappeared, some tightness of the chest and running at the nose remaining for four or five hours longer. The sickness accompanying the migraine completely disappeared as soon as the drug had begun to work; the headache also disappeared for a time, but came back slightly about four hours afterwards."

MR. KNOWSLEY THORNTON ON APOSTOLI'S TREATMENT OF UTERINE FIBROIDS BY ELECTROLYSIS.

MR. THORNTON thus states his views of the electrolytic treatment of fibroids, in the *British Medical Journal*, March 24th.

(1) I think the whole discussion premature, because we know that fibro-myomata are most uncertain in their habits of growth and retrogression when left entirely to themselves, the most surprising alterations taking place in periods of three, six, or twelve months. Such alterations are still more common if the patients are carefully handled as to diet, alcohol, rest at the periods, and special medicines.

(2) Nothing which has yet been published by Apostoli or his followers is inconsistent with these natural, or slightly aided changes, and the results obtained are probably as much due to the rest and care while under treatment, powerfully aided by the effect on the nervous system of confident hope of cure, as to the specific action of electricity.

(3) No results can have any scientific value till the cure is proved by a sufficient interval of health for at least twelve months after the treatment has ceased.

(4) We do not yet fully appreciate the dangers of the method. I know of one case in which rapidly fatal pyæmia followed a very few applications in the hands of one experienced in the use of the method. The journals tell us of narrow escapes, and even such careful manipulators as the Keiths record a serious case of cellulitis, of which the gravity is not lessened by attributing it to the carelessness of the patient.

(5) I would ask the profession not to be carried away by the enthusiasm of any one in a *revival* of this kind, but to wait patiently for definite results, confirmed by sufficiently long intervals.

Let those who believe in the new "panacea" work for a year or two, and then show us their cured patients; that is, if they then have any to show.

A SANATORIUM IN BRAZIL.

A SANATORIUM has been established by English enterprise in the highlands of Brazil, at San Paulo, thirteen hours by rail from Rio de Janeiro, and three hours from Santos. The latter port is twenty-three days' voyage from Southampton, Eng., and twenty-eight days from New York. Great claims are made for the climatic advantages of the town for pulmonary invalids. The atmosphere is dry and exhilarating, and the barometric range so remarkably limited

that it does not exceed three-quarters of an inch throughout the year. The average maximum temperature in the hottest month, January, is 80° in the shade; in the coldest month, July, 72°. The average minimum night temperature in January is 64°; in July, 49°. The number of days on which there is a brilliant sunshine for the whole or the greater part of the day averages 235 per annum, and such days are pretty equally distributed throughout the year. Unlike the Mediterranean winter resorts, San Paulo has no unhealthy season of the year. Invalids are recommended to spend both seasons there, and it is a disputed point which is the more beneficial; but those who like sea-bathing and want a change, can go to Santos for sea-bathing in June or July. Two miles from the city, a sanatorium has recently been built by an English gentleman, on a hill commanding a splendid view. It is well drained, and supplied with excellent water. It has reception rooms, billiard and bath rooms, and every modern convenience; while the town, at present containing a population of 40,000 to 50,000, has the comforts desired by invalids, and is surrounded by a country abounding in pleasant walks and good hunting.

MORE ALLEGED MILK INFECTION THROUGH SCARLATINA.

OUR readers are already familiar with the Hendon and other cases in which scarlatina is claimed to have been caused through a milk-supply. The *Lancet* gives the facts concerning the last of these alleged cases as follows:

Mr. Henry Armstrong has prepared a very careful report on an outbreak of scarlatina, in the Jesmond district of Newcastle-on-Tyne, which is apparently associated with the use of milk from a certain dairy. The outbreak was sudden and limited in duration, 19 cases in 16 households occurring between January 27th and February 6th: and of these 19 attacks 17 occurred in persons having their milk from the same dairy. The milk came from Gosforth; but amongst fifty families in that district taking the same supply no cases were heard of; there were also 169 households in Newcastle who had their milk from the same dairy, and who remained unaffected. Suspicion, therefore, seems at first sight to free the dairy itself, and this notwithstanding the fact that some scarlatina appears to have existed in the house of one of the dairy workers some few months before the outbreak. The cows are also declared to have been healthy, one only having had chapped teats; but on this point we can hardly, in the present state of our knowledge, accept any definite assurances. Coming next to the distribution of the milk, there was an incidental purchase of additional supplies in both the Newcastle milk-walks, and although inquiry as to these incidental sources of supply led to no results incriminating them, the very occurrence complicates the story materially. However the milk became infected, the infection must have been a limited one both in point of time and in amount. Both milk-walks were attacked, one to the extent of $\frac{3}{4}$ and the other to 9 per cent. of households supplied. But whilst the actual source of infection remains undiscovered, the report forms, by reason of its careful preparation and argumentation, a valuable addition to the subject of disease-distribution through the agency of milk services.

Correspondence.

SIX LIVING GENERATIONS.

GEORGETOWN, MASS., April 11, 1888.

MR. EDITOR. — I think the following family history, which came under my professional notice by my being called to attend the mother of the *sixth living generation*, is without a parallel in the country.

Last May I attended Mrs. Newall Rogers, of Byfield, aged sixteen years, with her first child. I was then informed, and I have since taken pains to verify the statements then made, that this baby is the *sixth living generation*, with ages as follows:

Great Great Great Grandmother . . .	95 years
Great Great Grandmother . . .	74 "
Great Grandfather . . .	59 " 8 months
Grandfather . . .	39 " 4 "
Mother . . .	16 " 2 "
Child . . .	11 "

All the above are still living to this date.

Can any of your readers instance even five living generations?

Yours truly, R. B. Root, M.D.

JOHNSON'S EDUCATORS AS A DIABETIC FOOD.

40 BOYLSTON ST., BOSTON, April 2, 1888.

MR. EDITOR. — In the *Journal* of March 23d, in an article entitled "The Value of So-Called Diabetic Foods," occurs the following statement, (see section 7): "Dr. Johnson's Educators. These biscuit are recommended very strongly by the seller, who assured me that they were absolutely free from starch." For light on this point let your readers consult my Educator and other circulars.

Also the following with regard to diabetic foods, which is *all I have published* on this subject, and corresponds with every statement made by us with reference to them:

"To those who are unable to use starch in their food I would call attention to our gluten flour and special diabetic food in the form of bread and crackers both plain and shortened. Not excelled by anything of the kind on the market."

These latter foods, mentioned in sections 8 and 9, page 287, of the *Journal*, by Dr. Harrington's own analysis and estimates contain but 23 per cent. and 30 per cent. respectively of starch, or the equivalent of 25.55 per cent. and 33.33 per cent. of sugar-forming substance, less than any other on the list, by his own showing.

Notwithstanding this I am accused (in section 11, paragraph 4), with dishonesty and fraud, and he commends a Graham wafer of another's make, with its 51.15 per cent. of starch as a superior diabetic food to mine. The above presumes that diabetic foods, and not the educators, were analyzed. The fact that absolute gluten has never been produced except in the laboratory, is quite significant in this connection.

I desire the co-operation of the profession in the work in which I am engaged, and doubt not I shall obtain it when honesty and integrity shall be found united with the requisite ability.

Yours in the interest of true living,
WM. L. JOHNSON.

LETTER FROM BERMUDA.

HAMILTON, BERMUDA, April 5, 1888.

MR. EDITOR. — The copies of the Boston papers which reach us show how fondly winter still lingers with you. We scarcely realize what it means when we read of the thermometer marking 8° (F.) as morning after morning we step on to the veranda to find the mercury at 68° or 70° (F.) Bermuda is a small group of islands scarcely covering nineteen square miles, but this contracted area is crowded with natural beauties. They are situated 677

miles south-east of New York, in latitude 32° 15', about on a line with Charleston, S. C. They are separated from the American coast by the Gulf Stream, on the eastern and southern border of which these islands lie. Bermuda is of coral formation, and is perched on the top of a submerged mountain, associated by some with the lost continent Atlantis. Its vegetation is a strange mixture of the cedar and the palm, but almost any of the tropical plants grow here under cultivation.

The climate is a peculiar combination of semi-tropical heat, tempered by the cool and moist breezes from the sea. It is essentially a marine climate. The thermometer shows a daily average in the past ten years of 71° (F.) with the dew point at 64° (F.). During the period of ten years the records of which I had access to (through the courtesy of Mr. Frith, the librarian of the islands), the highest record found was 90° (F.) and the lowest was 47° (F.). This latter occurring only the 18th of last month (March, 1888) during the blizzard which swept the eastern shore of America. January, February and March are called the winter months, but there is no distinct division of the year into seasons. During these months it rains somewhat more frequently, especially in the day-time, but the rain-fall shows only 1.46 in. more in these than in any other season of months. These daily showers last only ten or fifteen minutes, and are not a hindrance to out-of-door life. Visitors soon accommodate themselves to the English way of always carrying an umbrella.

The average record by months of the temperature, barometer and rainfall is as follows, for the period of ten years. The observations were made at 10 A. M., 12 M., and 3 P. M.

Month.	Thermometer.	Barometer.	Rainfall.
December . . .	67.2	30.055	5.69 in.
January . . .	68.5	30.182	6.46 in.
February . . .	68.3	30.272	6.30 in.
March . . .	68.2	30.053	4.78 in.
April . . .	68.2	30.056	3.37 in.
May . . .	70.0	30.041	5.02 in.

After the middle of March the weather becomes more settled. Days of almost constant sunshine occur for two and three successive weeks, the showers, if any, usually occurring during the night when the mercury has fallen from 6° to 8° (F.).

The prevailing winds are from the tropics, though during the months of January to May the north-west winds come over the sea from New England, and make us remember that winter is still holding on.

Fires are occasionally needed, but chiefly to counteract the excessive dampness. Heavy flannel will be needed by a person coming as early as April 1st. After that date the season grows warmer.

As a resort for invalids Bermuda has enjoyed considerable reputation. It has very many advantages, and few disadvantages, but at the outset of the trip we encounter its only serious disadvantage. The voyage is sixty hours' sail from New York, but it is said to rival the celebrated English channel for severity. Of one hundred and six passengers on the Orinoco when we came, only twelve were free from the "mal-de-mer."

Once safely landed in Bermuda we find a beauty of air and scene which immediately revives and interests the visitor. For one who simply wishes a place to pass the season and escape the rigors of our northern winter, no place can be pleasanter than Bermuda. Nassau and Cuba fall far short of the attractiveness of these coral islands. Malaria is positively unknown here. All surface water is quickly absorbed by the porous coral formation.

Careful inquiry among intelligent physicians shows that there is no disease to which the islanders or their winter guests are exposed. Cardiac diseases do very well here. The gastric pain and dyspepsia, is relieved, the circulation is improved by the increased work of the sweat-glands, and the tropical sun brings out a good complexion. I have

seen three cases of valvular disease greatly improved by a visit this spring to these islands. Chronic bronchitis and asthma in the same way improve.

Patients with phthisis will probably not improve, unless they are in the very earliest stage, and need the change and rest desirable at such times. There is a large proportion of consumption among the native Bermudians, and many deaths among the visitors who come here hoping to stay their disease. There have been two cases of hæmoptysis under my observation during my six weeks' stay. The symptoms do not ameliorate, and the patients return none the better for the trip. It seems to me a grave mistake to send consumptives to Bermuda.

The climate of Bermuda seems to be well adapted for persons of advanced life. The native Bermudians are noted for their longevity, the record showing that deaths at eighty, and even ninety, are very common. Old people recuperate rapidly, and receive much benefit.

But the greatest class to whom Bermuda offers her healing balm is the worn out and jaded business man; the nervous and debilitated woman, whose unknown diseases have the range of our medical vocabulary from "nervous prostration" to "a complication of diseases." These people find here plenty to do. The driving is the special attraction. Hard, smooth roads, and an attractive point to drive to, make this very popular. The walks are by paths which lead through beautifully laid out grounds, while to him who enjoys the sea there is splendid yachting and excellent fishing.

Bermuda has one more advantage—it is 677 miles away, and has no communication with the world except a weekly mail steamer. No other spot on the face of the footstool is so isolated, unless it be St. Helena. Once here the patient must stay long enough to gain the benefit of time.

To the over-worked and weary who need the three r's, rest, recreation and refreshment, with quiet amusement to keep their minds occupied, who can enjoy the blueness of a coral sea, who can interest themselves in the coral animals and the geology of coral reefs, and so enjoy a change of air and scene without becoming the idlers of a summer's isle, unless they prefer it, to such as these I would say that Bermuda offers splendid chances, and if any one chooses to take them I think he will be repaid.

Very truly, JOHN B. BRAINERD, M.D.

The meteorological record for the week ending April 7, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather.			Rainfall.
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	
Saturday, April 7, 1888.																	
Sunday, ... 1	30.61	49.0	49.0	32.6	63.0	23.0	87.0	58.0	W.	W.	W.	12	14	14	C.	F.	C.
Monday, ... 2	29.64	38.0	40.0	33.0	100.0	83.0	76.0	76.0	E.	N.W.	W.	14	12	15	F.	O.	R.
Tuesday, ... 3	30.14	38.0	47.0	34.0	69.0	38.0	37.0	48.0	W.	N.W.	N.W.	9	16	8	C.	F.	C.
Wednesday, ... 4	30.37	40.0	51.0	30.0	51.0	39.0	68.0	50.0	W.	W.	W.	6	19	14	F.	C.	C.
Thursday, ... 5	30.20	42.0	52.0	34.0	60.0	96.0	96.0	86.0	N.	S.	E.	4	6	4	C.	R.	R.
Friday, ... 6	29.88	47.0	60.0	37.0	96.0	25.0	42.0	54.0	N.	W.	S.W.	12	24	16	C.	C.	O.
Saturday, ... 7	30.07	39.0	50.0	31.0	60.0	33.0	64.0	62.0	S.W.	W.	N.	13	30	16	C.	C.	O.
Mean, Week.	30.05		50.0	33.0				62.0									

O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 7, 1888, TO APRIL 13, 1888.

BUSHNELL, GEO. E., captain and assistant surgeon. From Fort Preble, Mo., to Camp Pilot Butte, Wyo.

STEPHENSON, WM., first lieutenant and assistant surgeon. From Camp Pilot Butte, Wyo., to Fort Verdi, Ariz.

MEARNS, E. A., first lieutenant and assistant surgeon. From Fort Verdi, Ariz., to Fort Snelling, Minn.

KNUDLER, WM. L., first lieutenant and assistant surgeon. From Fort Snelling, Minn., to West Point, N. Y.

BORDEN, W. C., first lieutenant and assistant surgeon. From Fort Douglas, U. T., to San Antonio, Tex.

EDIE, G. L., first lieutenant and assistant surgeon. From San Antonio, Tex., to Fort Douglas, U. T.

S. O. 79, A. G. O., April 6, 1888

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING APRIL 14, 1888.

PERCY, HENRY T., passed assistant surgeon. From Naval Academy, and to Hospital, Washington, D. C.

CRAWFORD, M. H., passed assistant surgeon. From Hospital, Washington, D. C., and wait orders

PLINT, J. M., surgeon. From Fish Commission duty and to special duty at Smithsonian Institution.

PERSONS, R. C., surgeon. To duty in charge of Army and Navy Hospital, Hot Springs, Ark.

STONE, E. P., assistant surgeon. From further treatment, and to duty at Hospital, New York.

KINDLEBERGER, DAVID, medical director. From Hospital, Washington, D. C., and wait orders.

HOCHLING, A. A., medical inspector. To Naval Hospital, Washington, D. C.

HARMON, G. E. H., passed assistant surgeon. To duty at Naval Academy, Annapolis, Md.

STATE SANITARY CONVENTION OF PENNSYLVANIA.

A State Sanitary Convention will be held at Lewisburg, Union County, Pa., under the auspices of the State Board of Health, Thursday and Friday, May 17 and 18, 1888.

BOOKS AND PAMPHLETS RECEIVED.

Excerpt from the Biennial Report of the Board of Health to the General Assembly of the State of Louisiana. 1886-1887. Joseph Holt, M.D., President.

Pneumonia. Its Mortality and Treatment. A Statistical and Rational Inquiry. By Henry Hartshorne, M.D. Reprint. Philadelphia: 1888.

A Practical Treatise on Diseases of the Skin, for the Use of Students and Practitioners. Second edition. Thoroughly revised and enlarged. By Jas. Nevins Hyde, A.M., M.D., Professor of Skin and Venereal Diseases, Rush Medical College, Chicago. Philadelphia: Lea Brothers & Co. 1888.

The Pathology of Hay Fever. By S. S. Bishop, M.D., of Chicago, Surgeon to the Illinois Charitable Eye and Ear Infirmary, etc. Reprint. 1888.

Twenty-Seventh Annual Report of the Cincinnati Hospital to the Mayor of Cincinnati, for the Fiscal Year ending December 31, 1887.

Fifth Annual Report of the Superintendent of Health of the City of Providence, for the Year ending December 31, 1887.

The Physiology of the Rogue. By Austin Abbott, LL.D. Reprint. 1888.

Lecture.

CARTWRIGHT LECTURES.¹
THE GENERAL PATHOLOGY OF FEVER.BY WILLIAM H. WELCH, M.D.,
Professor of Pathology, Johns Hopkins University, Baltimore.

LECTURE III.

THE ETIOLOGY OF FEVER.

We considered in the last lecture the experimental evidence concerning the effects of increased bodily temperature. An advantage of the experimental over the clinical method of investigating this subject is that it enables us to study the effects of heat upon the whole body and its various functions without the intervention of disturbing factors, such as infection, which complicate the clinical analysis of febrile phenomena with reference to this question.

We found that animals may be kept at high febrile temperatures for at least three weeks without manifesting any serious symptoms. The only functional disturbances which could be attributed directly to the influence of the elevated temperature were increased frequency of respiration and quickened pulse. The rapid respiration was found to be due partly to stimulation of the skin by external heat and by the warmed blood, and partly to the action of the warmed blood on the respiratory centres. The quickened pulse could be positively referred to the effect of the warmer blood upon the heart itself. No definite relation could be established between the variations of arterial tension which occur in fever and the height of the temperature.

Although the experiments narrated showed that prolonged high temperature is an element in the causation of fatty degeneration of the heart, they also indicated that other factors, such as infection, are concerned in the production of this lesion. Moreover, experimental evidence was found in support of clinical facts showing that this alteration may exist without serious interference with the functions of the heart, so that the conclusion seems justified that failure of the heart's power in fever is less an effect of high temperature than of other concomitant conditions.

Of the other disturbances in fever we learned that the increased consumption of tissues can be explained only in relatively small part by the elevation of temperature. The lessened perspiration, the renal disorders, and the digestive disturbances (with the possible exception of constipation) are referable also chiefly to other causes than the increased temperature. Both experimental and clinical observations strongly support the view now widely accepted, that the disturbances of the sensorium which constitute so prominent a part of the group of so-called typhoid symptoms are dependent in far higher degree upon infection or intoxication, than upon the heightened temperature.

Although no attempt was made to analyze in detail the clinical evidence relating to the effects of high temperature attention was called to the fact that the absence of all serious symptoms in many cases of relapsing fever, and in the so-called aseptic fevers, in spite of prolonged high temperatures strongly support the conclusions derived from the experimental study of the effects of heat upon men and animals.

Even in fevers, such as typhoid fever and pneumonia, where the height of the temperature is undoubtedly a most important index of the severity of the disease, there exists no such parallelism between the temperature and the nature and the severity of the other symptoms as we should expect if these symptoms were caused by the increased heat of the body.

It was emphasized that the results of experimental investigations should not be permitted to control the treatment of fevers, more particularly the use of so-called antipyretic agents. These agents, whether hydrotherapeutic or medicinal, influence, as is well known, many functions besides reducing the temperature. I need only refer to the powerful influence, of cold baths upon the circulation and the nervous system, and to the action of antipyretic and other antithermic drugs upon the nervous system.

Reasons were given for assigning to hyperpyrexia and insolation a position separate from other febrile conditions in the discussion as to the effects of elevated temperature.

Before leaving this subject of the effects of increased temperature I wish to call attention to one consideration, which should, perhaps, influence our opinion on this much disputed question. Is it a matter of indifference so far as the effects of febrile temperatures are concerned in what manner the increase of temperature is brought about? We have seen that heat-regulation, heat-production and heat-loss are disturbed in fever, but, as experience shows, not always in the same manner or to the same degree. In one case the incoordination of the regulating mechanism may be most apparent, the temperature fluctuating strangely up and down; in another case the heat-producing processes are excited to the utmost, and in another the circulatory changes in the skin, the vaso-motor disturbances, are the most prominent phenomena. Now this varying interplay of the factors which cause febrile rise of temperature doubtless corresponds to varying conditions of innervation, of structure and of function of certain tissues of the body. May we not reasonably suppose that these varying conditions of the tissues directly associated with the rise of temperature, may influence their tolerance of increased body heat? We have not the experimental or the clinical data which would enable us to give a definite answer to the question here propounded, and it would lead me too far from the theme of the present lecture to attempt to sift the equivocal evidence which might be gathered. I suggest this question, however, as one worthy of more attention than it has hitherto received.

I wish now to invite your attention to some considerations concerning the etiology of fever. In this era when etiological studies occupy the foremost rank in medical science, it will naturally be expected that a discussion of the general pathology of fever, even though it does not aim at completeness, will not leave wholly untouched the etiological aspect of the subject.

The general etiology of fever relates mainly to a consideration of the agents producing fever, the so-called pyrogenic substances. It is, moreover, only certain general characters of these agents which can be properly considered here. Most of the questions which at present engage so prominently the attention of physicians concerning the specific causes of individual fevers belong, of course, to the special etiology of fevers, and therefore, do not lie within the limits of

¹ Delivered at the College of Physicians and Surgeons, New York, April 12, 1888.

our subject. But even with these limitations we can not, in treating of the general etiology of fever, consider the febrile process so much in the abstract as we have done hitherto. We must come into closer contact with the individual forms of fever.

At the start it should be said that probably in no instance are we acquainted with the actual substance or substances upon which the febrile disorder of animal heat immediately and directly depends. We deal here, as elsewhere in medicine, not with direct, but with remote causes. But in no department of etiology have we advanced nearer the proximate causes than in many of the infectious fevers. To be convinced of the immense progress which has been brought about by the etiological study of fevers, let one pick up some of the older books on fevers, such as Percy's or Selle's,² with their endless divisions into sympathetic genera and species and their barren speculations. Percy, for instance, describes no less than one hundred and fifteen different kinds of fevers.

In all ages it has been customary to divide fevers into two great groups; namely, those which are secondary to some local cause, usually an inflammation, and those which cannot be explained by the presence of any local lesion. The explanation of the symptomatic seemed so much clearer than that of the essential fevers, that attempts have repeatedly been made to place all fevers in the symptomatic group. It is a curious fact that the two methods which have been of the greatest service in the study of fever, each, when first introduced, led to an entire misconception of the nature of fever. Boerhaave, who was the first to make any extensive use of the thermometer at the bedside, supposed that this instrument indicated a reduction of the bodily temperature during the febrile chill. He, therefore, taught that increasing frequency of the pulse, and not the elevation of temperature, is the constant and essential symptom of fever. If we accept De Haen's correction, which never became widely known, it was not until the middle of the present century that Boerhaave's error was overthrown. A no less serious misconception sprang from the study of the pathological anatomy of fevers in France during the early part of the present century. The exaggerated ideas of the immediate followers of Bichat as to what can be accomplished by pathological anatomy led them to the belief, for a long time widely accepted, that there is no such thing as an essential fever, and that all fevers are symptomatic of some local disease. This error of Broussais, one of the most influential and eloquent medical teachers of this century, is plainly traceable, partly to the fact that his autopsies were chiefly of typhoid fever, and partly to the belief that the lesions found at the autopsy suffice to explain all of the manifestations of the disease during life. But we need not stop to trace the fate of the various attempts to overthrow the doctrine of essential fevers. I have mentioned one attempt chiefly on account of the suggestive lessons it conveys, rather than from a desire to enter into historical details, which I have hitherto purposely avoided.

The division of fevers into symptomatic and essential fevers is one of undoubted practical utility, and is not likely to be abandoned. But it cannot truthfully be said that this popular classification has been of

much assistance in advancing our knowledge. Close inspection shows that the boundary lines between the two groups of fevers are vague and shadowy. Probably no one any longer believes that traumatic fever, the principal type of the symptomatic group, is due to increased production of heat in the seat of inflammation, which, acting like a furnace, was once thought to warm the whole organism, or to the irritation of nerves connected with the inflamed region. The opinion of Billroth and of Weber is now generally adopted, that traumatic fevers are caused by the absorption of pyrogenic substances from the inflamed district. Symptomatic fevers, as well as essential fevers, therefore, are dependent upon the presence within the blood of fever-producing agents. Many essential fevers, moreover, resemble the symptomatic ones in the existence of inflammation or necrosis at the portal, where there is reason to believe that the pyrogenic agents gain access to the general circulation. A distinction in these cases cannot be based on the ground that in symptomatic fevers only chemical substances, although possibly the products of bacteria, enter the circulation, and in essential fevers microorganisms invade the blood, for such a distinction would place cholera, and possibly tetanus and typhoid fever, among the symptomatic fevers. These considerations show how vague and unsatisfactory are the distinctions between symptomatic and essential fevers. Still, similar criticisms can be made of many of our artificial classifications, which nature is under no compact to observe, and we should undoubtedly be put to great inconvenience if we attempted to dispense with the epithets symptomatic and essential, as applicable to different forms of fever. There are, however, other points of view which seem to me more fruitful in the study of the etiology of fever than those embodied in these distinctions. I refer to the differences in the nature of fever-producing agents, concerning which our knowledge, although still very imperfect, has been materially increased within recent years. And here, again, we are greatly indebted to the results of experiments upon animals.

Much light has been shed upon the causes of a certain class of fevers by a series of experiments, which received their impulse from the important studies of Alexander Schmidt and his pupils upon the physiology of the blood. A particular direction was given to these experiments by the often-repeated observation that fever and other injurious effects may follow the transfusion of blood, especially when the blood of one species of animal is transfused into an animal of another species. In order to test the supposition that these bad symptoms are due to an excess of fibrin ferment, Köhler³ injected into the vessels of animals blood made rich in fibrin ferment and fibrino-plastic substance, and found that this blood, when injected in large amount into the jugular vein, causes sudden death by rapid coagulation of the blood in the right heart and pulmonary arteries, but when injected in smaller amount or in a different manner, produces a typical febrile attack bearing a close resemblance to that following the injection of putrid fluids. Angerer⁴ then found that a similar fever, although less intense and more gradual in its development, may be produced by the injection of blood into the peritoneal

² Percy. *Die Gesammte Fieberlehre*. Pesth., 1820. The original is in French.

³ Selle. *Rudimenta Pyretologie Methodica*, Berolini, 1773.

⁴ Köhler. *Ueber Thrombose und Transfusion*, u. s. v. Jnaug. Diss., Dorpat, 1877.

⁵ Angerer. *Klin. u. Exp. Untersuch. ueb. d. Resorption v. Blutextravastaten*. Diss. Dorpat, 1879.

cavity or the subcutaneous tissue, or even by an extravasation of blood. Although in these experiments it was believed that fibrin ferment is the pyrogenic agent, Edelberg⁶ was the first to produce fever and other symptoms of intoxication by the injection of this ferment, isolated according to Schmidt's method.

In the light of these experiments, it was to be expected that other ferments would be examined with reference to their pyrogenic power. Schmiedeberg⁶ discovered that injections of histozyme into the blood of dogs produce high fever, associated with general illness, and particularly with diarrhoea. The ferment to which Schmiedeberg has given the name histozyme he believes to be present normally in small amount in the body, and to be concerned in the disassociation of the nitrogenous constituents of the tissues. He concludes from his experiments that an excessive accumulation in the body of this normal ferment gives rise to fever, with increased metamorphosis of nitrogenous material. Schmiedeberg thinks it probable that the fibrin-ferment solutions employed by Edelberg in his experiments contained also histozyme, and that the pyrexia was due to the latter substance.

Following these observations concerning the pyrogenic power of fibrin ferment and histozyme comes the discovery by von Bergmann and Angerer⁷ that injections of pepsin and of trypsin into the blood of dogs causes a well-marked fever with characters like those of the other ferment intoxications described. A valuable calorimetric study of pepsin and trypsin fevers has been made by Wood, Reichert and Hare.⁸ These authors as well as Ott,⁹ have demonstrated that it is not the pepsin and the trypsin ferments themselves which constitute the pyrogenic agents but some contaminating substance which seems to be a peptone. That peptones artificially prepared contain poisonous principles has been known for some time and Brieger¹⁰ has succeeded in isolating a crystallizable poisonous ptomaine, called pepto-toxin, from commercial peptone and from that formed by the artificial digestion of fibrin. This ptomaine, however, is not identical with the pyrogenic agent found by Ott, and by Wood and his colleagues in commercial pepsin. To this list of pyrogenic substances obtained from impure ferments may be added leucin, and according to Ott, papayotin and neurin which produce marked fever when injected into the blood in small quantity. The substance sold under the name of papoid possesses marked pyrogenic power when its filtered aqueous solution is injected into the blood. This substance contains principles belonging to the peptone or albumose group. Dr. Mall, Fellow in Pathology at the Johns Hopkins University, has isolated from commercial papoid a bacillus which in pure culture exerts a powerful peptonizing action on fibrin and on connective and elastic tissues. The bacillus itself is not pathogenic, but an albumose or some similar substance produced by its activity has pyrogenic power when injected into the blood.

It does not appear that any one has actually isolated the pyroxial agent from the various ferments employed in these experiments. Certainly no such agent has been obtained in a crystalline form, which

is the test of its purity, if we except Brieger's pepto-toxin, the pyrogenic capacity of which has not been established. It has been alleged that the fever-producing agent is the same in all of these ferment intoxications, but this has not been proven, nor does it seem probable.

On better grounds, it has been urged by von Bergmann and Angerer that all of the substances in the group of pyrexial agents now under consideration, cause fever by producing the same change in the blood. These authors claim that this change in the formation in the circulating blood of an excessive amount of fibrin ferment which leads either to coagulation or to stasis in the capillaries, particularly those of the lungs and of the intestines. One of the main arguments for this view is the fall of blood-pressure which von Bergmann and Angerer observed after injections of pepsin and of pancreatin, but this fall can be explained in other ways than by supposing that the pulmonary capillaries are occluded and, moreover, Wood, Reichert and Hare find that the blood-pressure often rises in the course of pepsin fever. It does not seem to me that we are any more able to explain in exactly what manner the pyrogenic substances act in this class of fevers than in other fevers. The idea, however, that the liberation of the fibrin ferment in abnormal quantity is capable of causing fever, finds support not only in experiments which have been mentioned, but also in the fact that injections of hæmoglobin solutions and of large quantities of water into the blood produce fever.

But you perhaps by this time have asked yourselves what bearing all of these experiments with various pyrogenic substances have upon the etiology of human fevers. They have in my judgment an important bearing on this subject. However obscure may be the explanation of the mode of action of these substances, however doubtful may be their exact chemical composition, they have certain common characteristics which are calculated to shed light upon the causation of some obscure febrile disorders of human beings. In the first place the members of this group of pyrogenic substances, if not identical with certain physiological ferments, are readily produced by them, quite independently of the action of bacteria or other microorganisms. In the second place some of these substances are present normally in small amount in the body and if their elimination is impeded or their formation is excessive, there is reason to believe that they become efficient causes of fever. In the third place these pyrogenic substances may be produced, again without the action of bacteria, in extravasated blood or by the abnormal disintegration of tissues, and if they are absorbed from these sources in such a condition or in so large an amount that nature cannot render them harmless, they are capable of producing fever. It is customary to call the morbid condition produced by the absorption of these substances ferment intoxication in analogy with the term putrid intoxication, applied to the diseases caused by the absorption of the products of putrefactive bacteria. The term ferment intoxication seems to me to imply more than our knowledge warrants, but it is not of much use to contend against names which have gained currency. It is probable that some of the pyrogenic agents in this group belong to the class of leucomaines, but our present information regarding these bodies does not justify any positive statements on this point.

⁶ Edelberg, Arch. f. Exp. Path. u. Pharm., Bd. XII.

⁷ Schmiedeberg, *Ibid.*, Bd. XIV.

⁸ Von Bergmann u. Angerer, D. Verh. d. Ferment-intoxication, *Beischrift*, Würzburger Universität, 1882, 1, 135.

⁹ Wood, Reichert and Hare, *Therapeutic Gazette*, 1888.

¹⁰ Ott, *Journal of Physiology*, Vol. viii.

¹¹ Brieger, *Ueber Ptomaine*, Berlin, 1886.

Although the etiology of individual fevers does not belong to our subject I cannot forbear calling your attention to certain febrile conditions which seem to be produced by the accumulation of substances that are either normal constituents of the body or are the result of chemical processes differing but little from physiological ones.

To this category probably belongs the so-called aseptic fever first described by Genzmer and Volkmaun.¹¹ These surgeons have established the fact that there are traumatic fevers not caused by the absorption of septic material and that severe injuries and wounds which pursue an entirely aseptic course are not infrequently associated with considerable elevation of temperature. This aseptic fever is usually to be observed with extensive wounds or injuries in which there is much lacerated tissue or extravasated blood to be disintegrated and absorbed. It occurs not only with wounds correctly treated by antiseptic methods, but also with subcutaneous injuries, particularly fractures of the large bones, where there can be no suspicion of the action of bacteria. Aseptic traumatic fever differs by such marked characteristics from septic fever, that there can be no doubt that the two types of fever are etiologically distinct. Aseptic fever has no prognostic significance; its only symptoms are the elevation of the temperature, which may mount to 104° (40° C.), or even 105.8° (41° C.), and the increased frequency of the pulse. The entire absence of all of the intoxication symptoms of septic and infectious fevers, such as the numbness sensorium, the dry tongue and skin, the lessened secretion of urine, I have already referred to in confirmation of the belief that these symptoms are not dependent upon the rise of temperature. Genzmer and Volkmaun assign as the cause of aseptic traumatic fever the absorption of substances resulting from the disintegration of the wounded tissues and of the extravasated blood and state that these substances probably do not differ markedly from those produced by physiological tissue metamorphoses. This explanation certainly has received decided support by the experiments which I have described in this lecture, a large part of which have been performed since the publication of Genzmer and Volkmaun's article. It has been suggested that aseptic traumatic fever is a reflex neurosis and this suggestion cannot be absolutely rejected as a possible explanation, but for various reasons which cannot here receive further consideration, the usually accepted explanation is the more probable one.

An instructive case of ferment intoxication has been reported by Cramer.¹² There existed in a young woman a cyst the size of a goose's egg between the fibres of the semitendinosus muscle. The cyst was developed from a cavernous angioma and was filled with dark fluid blood. The patient had had fever for almost two years up to the day of the operation. The cause of the fever could not be discovered. Immediately after the removal of the cyst the fever stopped and did not return. In this case the cavernous structure of the cyst-wall accounts for the case with which we must suppose a considerable quantity of the pyrogenic substance was continuously absorbed from the bloody contents of the cyst. The results of

Angerer's experiments already mentioned, enable us to explain the source of the fever in this case.

Another instance may be cited in which fever is probably to be explained by the accumulation within the body of products of normal metabolism. More or less fever appears to be a constant accompaniment of the agonizing method of treatment known as the Schroth cure. In this treatment the patient is kept for a number of successive days on dry food with scarcely any fluids. Both Bartels and Jürgensen,¹³ who have investigated the nutritive changes of individuals under this treatment, believe that the body becomes so poor in water that some of the products of regressive metamorphosis cannot be carried out of the system. This certainly seems very probable and if true it affords in the light of recent experiments an explanation of the accompanying fever.

I believe that good reasons can be adduced in support of the opinion that the febrile conditions sometimes associated with leucoæthæmia, profound anæmias, and chlorosis belong to the group of fevers we are now considering. It is possible that some of the obscure ephemeral fevers are also to be included here. But to consider these febrile disorders in detail would lead us into the domain of special etiology upon which we have already, perhaps, encroached too far. My purpose has been to bring before your attention only a few clinical examples in illustration of the experimental results.

I think that you will agree with me in the conclusion that experimental and clinical evidence justify us in recognizing as a distinct group of pyrogenic agents substances which have no necessary connection with microorganisms and which are either not foreign to the healthy organism, or are readily formed by unorganized ferments from normal or abnormal constituents of the body. These substances may be described as homologous in distinction from the heterologous agents concerned in the production of septic and infectious fevers.

A class of pyrogenic agents of far greater clinical importance than those previously considered is formed by the products of microorganisms which in themselves are not pathogenic. A considerable number of bacteria which when inoculated in pure culture into the body are not capable of further invasion or of multiplication, produce in culture fluids and in dead animal or vegetable material poisonous substances often of great virulence. Exception may be taken to the description of these organisms as non-pathogenic, inasmuch as the products of their activity are poisonous, but the epithet pathogenic is usually assigned by bacteriologists only to such microorganisms as are capable of multiplication within the body. If we called all of the microorganisms pathogenic which produce poisonous ptomaines, we should have to include in this category a far larger number of the known species of bacteria than has hitherto been customary.

The best known and most important of the fevers produced by chemical products of saprophytic bacteria are those grouped under the name putrid intoxication. Until the introduction of the latest era in bacteriology by Koch, nearly all of the experimental work on the etiology of fevers related to the causation of the septic and putrid fevers. It is instructive with our present knowledge to follow the experiments on this subject from the period of Gaspard, Magendie and

¹¹ Genzmer u. Volkmaun. Volkmann's Sammlung, No. 121.

¹² Cramer. Verhandl. d. Deutschen Gesellschaft f. Chirurgie. 13tes Congress, 1884.

¹³ Jürgensen. Deutsches Arch. f. klin. Med., Bd. I.

Sedillot up to recent times. What light has been shed upon the mass of contradictory and perplexing results of experiments with putrid fluids by the recent chemical and biological studies of putrefactive processes! Some of the putrid substances experimented with undoubtedly contained parasitic microorganisms, and others contained only obligatory saprophytes, some were rich in poisonous ptomaines and others were nearly devoid of them. The whole doctrine of the parasitic nature of infectious fevers seems to have hinged in the minds of some upon the determination of the question whether septic and putrid fevers are produced by the absorption of chemical substances or by the invasion of pathogenic bacteria. The ideas concerning putrid intoxication dominated at one time the whole field of fever etiology and were applied not only to septicaemia but to typhoid fever, typhus fever, yellow fever, in fact, to nearly all infectious fevers. Nor have the echoes of this period even now entirely died out.

Panum was the first to isolate from putrid materials some chemical substance or substances in tolerable purity, certainly free from bacteria. This substance, when injected into animals, produce symptoms of putrid intoxication. Subsequently, von Bergmann and Schmiedeberg isolated from putrefying yeast a poisonous crystalline substance, their celebrated sepsin. For a time the opinion prevailed that this sepsin was the source of all putrid intoxications. Thanks to the investigations of Nencki and others, and particularly of Brieger, we now know that many alkaloidal substances can be separated from putrefying materials. Some of these so-called cadaveric alkaloids or ptomaines are poisonous, fever-producing, others are harmless. There is no reason to suppose that the list of the ptomaines of putrefaction has been exhausted, nor is it necessary to believe that all of the poisonous constituents of putrefying materials are of an alkaloidal nature.

Most of the bacteria concerned in ordinary putrefactive processes are purely saprophytic. They are incapable of multiplication in the living animal tissues. In a mixture of putrefactive bacteria it is not, however, uncommon to find genuine pathogenic or parasitic bacteria. It was from such sources that the bacilli of mouse septicaemia and of rabbit septicaemia (Koch) were obtained. The bacillus of malignant oedema is also often found in the early stages of post-mortem decomposition.

There is, of course, no doubt that the absorption of the chemical products of putrefaction may produce fever with septic symptoms quite independently of the penetration and multiplication within living tissues of bacteria.

Here belong certain cases usually described as septic, in which fever and other bad symptoms subside upon the thorough cleansing and disinfection of a foul wound or of a puerperal uterus. The majority of cases of septicaemia are not to be included here, for they depend upon the invasion of pathogenic bacteria. But excluding the cases of genuine septicaemia there remain the putrid intoxications which result from the absorption of poisonous substances produced in necrotic or disintegrating tissues, or exudations, or extravasated blood by the action of purely saprophytic bacteria. The ideas which I have expressed on this subject are now so generally admitted that they require no further elucidation.

It is probable that fever with symptoms of intoxication, although generally of a much milder nature than in the class of cases just considered, may be produced by abnormal fermentations and putrefactions caused by saprophytic bacteria in the alimentary canal. But here the essential morbid conditions seem to be abnormalities in the gastric and intestinal contents, due partly to the character of the ingesta but chiefly to alterations of the digestive juices.

Fermentative and putrefactive bacteria are normally present in the intestinal canal and have abundant opportunities to gain access to this situation. The number, however, which can multiply and thrive there is quite limited, for under normal conditions, according to Escherich, only such bacteria can multiply to any extent in the intestinal canal as are capable of growing with little or no oxygen and of deriving their nourishment from the anaerobic fermentation of the food supplied to them in this situation.

Of a far more serious nature are the putrid or ptomaine intoxications which result from the ingestion of substances which have undergone outside of the body putrefaction or changes which lead to the formation of poisonous ptomaines. To this group of cases belong at least many of the instances of poisoning which have been caused by eating certain kinds of meats, sausages, fish, cheese, etc. In some of these instances poisonous ptomaines have been isolated from the suspected substances, but we know scarcely anything of the microorganisms which are concerned in their production.

It is important to bear in mind that it is not stinking putrefaction alone which gives rise to poisonous products. Brieger has found that such products may be absent in very advanced decomposition, and that in general the most virulent products are formed in the early stages of putrefaction. We know, furthermore, that putrefaction and fermentations differ in the character of their products. There are differences according to the kind of bacteria present, according to the substances decomposed and according to various other conditions such as the presence of oxygen, the temperature, etc. This is not the proper occasion to discuss these details.

Enough has been said to prove that we are justified in recognizing as a second class of pyrogenic agents substances which are the products of bacteria, in themselves not pathogenic. These pyrogenic agents may be formed on or within the body or they may be produced outside of the body. I would not, by any means, have you infer that it has been proven in all of the special examples which I have mentioned that the bacteria involved are not pathogenic or capable of multiplication within the living tissues. We have not sufficient knowledge to assert or to deny this in every instance, but I do not think that it is likely exception will be taken to the classification which I have adopted for most of these cases. As has repeatedly been mentioned, our purpose here is not an analysis of individual cases of fever, but an attempt to classify systematically the various pyrogenic substances.

We come now to the third and most important group of fever-producing agents, the pathogenic microorganisms. So overshadowing is their importance that it has been claimed that they are the sole causes of fever. In contrast with former times it is no longer the symptomatic fevers whose etiology is clearest. We have much more definite ideas as to the

mode of production of some of the essential fevers which were once the most obscure, than we have of symptomatic fevers. It does not seem to me worth while to go over the chain of evidence which establishes the doctrine that the infectious fevers are caused by microorganisms. There is probably no one who has thoroughly investigated the subject and is competent to form an opinion on it who does not to-day admit that a number of infectious diseases have been proven to depend upon specific microorganisms, and that it is a logical inference that all infectious diseases are caused by parasitic organisms.

It is not germane to our subject to enter into a nomenclological or biological description of the different species of pathogenic organisms which are causes of febrile diseases. The only question which concerns us in this consideration of the general etiology of fever is how the microorganisms produce fever. Are they themselves the pyrogenic agents, or do they produce chemical substances which are pyrogenic? A number of other possibilities might be mentioned. These and similar questions have suggested themselves to investigators since the beginning of any knowledge of parasitic microorganisms. Our information is far from sufficient to enable us to answer these questions in a positive manner, and still we are not left wholly to vague surmises in attempting to form some sort of an opinion.

That bacteria can produce mechanical effects by plugging up capillaries, and in other ways, is certain; but the wide differences presented by the various infectious diseases cannot be reconciled with the idea that pathogenic bacteria act chiefly by mere mechanical interference with the fluid and the solid constituents of the body. Notwithstanding the fact that Stricker and Albert succeeded in producing fever by the injection of starch granules into the blood, probably no one will be inclined to attribute the pyrogenic activity of bacteria in any considerable extent to occlusion of bloodvessels.

In a certain number of infectious diseases, particularly of animals, bacteria are present in such enormous number in the blood and tissues that some are inclined to refer the disastrous effects of the organisms to the withdrawal of oxygen and other nutritive pabulum from the cells of the body. So far as the appropriation of oxygen is concerned, this idea is not supported by the results of most of the examinations of the blood in cases of anthrax. This explanation was more popular in the early days of bacteriology than it is at present, and at the best its value is limited, for it cannot be applied to a large number of infectious diseases, such as cholera or typhoid fever, where the circulating blood is not largely invaded by the parasites. Furthermore, it is not clear how the appropriation by bacteria of nutriment intended for the tissues would help us to explain the production of fever.

It has been suggested that the increased temperature in infectious fevers may be explained by the heat produced by oxidation or other chemical changes in the microorganisms themselves. But this is not at all a satisfactory explanation. Not only is the quantity of heat which can come from this source in all probability very small compared with that constantly produced in the body, but such an explanation of febrile rise of temperature is not in harmony with what we know concerning the mode of production of fever (see Lecture I).

The failure to explain the pathogenic power of bacteria in these and similar ways led to the supposition that the morbid activity of pathogenic bacteria is exerted chiefly by means of injurious chemical products. The demonstration of such products leaves no room for doubt as to the correctness of this supposition for some infectious diseases. This explanation is probable for most such diseases, but experience has shown that it is particularly dangerous to indulge in hasty generalizations in this department of medical science.

Sterilized and filtered cultures, particularly old cultures, of various pathogenic bacteria, are capable of producing fever and other symptoms when injected into the blood or tissues. This, of course, makes it evident the bacteria in question give rise to poisonous substances. It is necessary to distinguish between the intoxication produced by the injurious products of bacteria and the infection caused by the multiplication of the microorganisms within the body. That this distinction may be readily overlooked is shown by the recent experiments with the inoculation into animals of pure cultures of the typhoid bacillus. Small quantities of these cultures may be inoculated without any apparent effect. If, however, larger quantities are injected into the veins or the peritoneal cavity of a rabbit, the animal dies in a short time, and the characteristic bacilli are found in the blood, spleen and elsewhere. It was supposed Fraenkel and Simmonds,¹⁴ to whom we owe this latter observation, that actual infection took place, but it has been demonstrated by Strotin and by Beumer and Peiper,¹⁵ that under these circumstances no multiplication of the injected bacilli occurs, and that the same results may be obtained by the injection of sterilized typhoid cultures.

The isolation in a chemically pure state of the poisonous products of pathogenic bacteria encounters great difficulties, and we owe to Brieger¹⁶ nearly all that has been accomplished in this direction. Two substances which he has obtained from cultures of pathogenic bacteria are of great interest. Brieger isolated from pure cultures of the typhoid bacillus a very poisonous ptomaine, or toxine, as he prefers to call this group of substances. He has given to it the name typho-toxine. It may be somewhat significant that he failed to find typho-toxine in a culture which had stood for twenty-four hours at a temperature of 102.2° (39° C.). The injection of typho-toxine into guinea-pigs produced great muscular weakness, diarrhea, increased frequency of pulse and of respiration, and death. Nothing is said as to the effect upon the temperature of the animal.

A toxine has been isolated by Brieger in a crystalline form from an impure culture of the tetanus bacillus. This substance, called tetanin, produces when injected into animals the characteristic symptoms of tetanus.

It is evident that these important discoveries render far more definite than was formerly possible the belief that bacteria produce fever by means of their chemical products.

A dangerous influence exerted by poisonous ptomaines is that under their agency the power of the body of resisting the invasion of various microorganisms may be impaired or overcome. Thus Wyssokowitsch

¹⁴ Fraenkel and Simmonds. Die Aetiologische Bedeutung des Typhus-bacillus. Hamburg und Leipzig, 1886.

¹⁵ Strotin. Zeitschrift f. Hygiene, Bd. 1, p. 465. Beumer u. Peiper. Ibid, 490.

¹⁶ Brieger. Untersuchungen über Ptomaine. Berlin, 1886.

has shown that the immunity of some animals against certain species of bacteria may be destroyed by ptomaine poisoning.

In order to observe the effects upon the temperature I have injected into rabbits sterilized cultures of the typhoid bacillus. Injections of very small quantities of these cultures produce no effects; somewhat larger amounts cause a rise of temperature, without other marked symptoms; still larger quantities produce increased temperature, diarrhoea, weakness, and other manifest symptoms of severe illness, but the animal may recover; relatively large amounts are followed by fall of temperature, grave illness and death. I have also obtained results similar to those of Sirotiuin, who inoculated two rabbits with the same amount of a typhoid culture. In one rabbit fever developed and the animal recovered; in the other the temperature fell after the injection, and the animal died. This certainly does not indicate that the rise of temperature in itself is an unwelcome attendant of intoxication with the poisonous products of bacteria. My experience certainly showed that the animals were more likely to die after injection of typhoid cultures when the temperature fell than when it rose, independently of the quantity of material injected. One is reminded here of the very malignant cases of typhoid fever reported by Fraentzel and others, in which the temperature throughout a great part of the disease was sub-febrile, or even at times sub-normal.

In no disease is the dependence of the febrile paroxysm upon the presence of bacteria so apparent as in relapsing fever, where, according to the statements of most, although not of all, observers, the spirilla appear in the blood at the beginning of a paroxysm and disappear at the end. Whether or not here and in malaria the pyrogenic agent is a chemical product of the microorganisms causing the disease we do not know.

I must content myself with having brought before you evidence showing that at least in some of the infectious fevers the specific bacteria produce pyrogenic substances. We have no right to say that this is the only way in which pathogenic bacteria can cause fever.

We have considered now three groups of agents concerned in the production of fever: namely, first, unorganized ferments and other relatively homologous substances; second, ptomaines and other chemical products of saprophytic microorganisms; third, pathogenic microorganisms and their chemical products.

It is not to be understood that these groups correspond to sharply defined classes of fever-producing agents. The same substance may be produced by the action of unorganized ferments as well as by saprophytic bacteria or by parasitic bacteria; hence we may find the same fever-producing agent in each of the three groups. As has already been mentioned, our knowledge does not justify us in regarding these various substances as the immediate and direct pyrogenic agents. The epithet pyrogenic is applied to them only by a certain latitude or signification. It is possible that these various substances which we are in the habit of describing as pyrogenic, may produce in the body some common change which gives rise to the real fever-producing agent. This is the view of von Bergmann and Angerer, who believe that this common change is a liberation of fibrin ferment by destruction of leucocytes. While we cannot consider this view as more than an hypothesis, it is neverthe-

less well to remember that apparently heterogenous substances which are usually designated as pyrogenic may produce similar changes which are to be regarded as the real source of the febrile disorder or animal heat. But notwithstanding these limitations and these elements of uncertainty it seems to me that some such classification as that suggested of the agents producing fever is more useful than that usually employed in the discussions of the etiology of symptomatic and of essential fevers.

There is one point which must be impressed upon every one who makes many experiments with pyrexial agents. This is, that once in a while a substance of undoubted pyrogenic power causes a fall instead of a rise of temperature. This occurs frequently when the substance is injected in large quantity, and under these circumstances there is usually produced a condition of collapse. But in exceptional cases the same dose which will cause in one animal a rise of temperature, may give rise in another animal of the same species to a distinct reduction of temperature. In these latter cases there must be some idiosyncrasy on the part of the animal. Aronsolin¹⁷ refers this unusual phenomenon to some peculiarity of the heat-centres of the brain and he draws an interesting parallel between this contrary effect of pyrogenic substances and the exceptional cases in which antipyretic drugs give rise to elevation instead of lowering of temperature.

The causes of fever which we have thus far discussed, have been substances which exert a pyrogenic effect when introduced into the circulation. We suppose that these substances act in some way upon the nervous system, but whether or not this action is a primary one it is impossible to say. Even if we assume, as it often done, that these substances incite directly in the blood and tissues chemical changes which lead to increased production of heat, we must still have recourse to some action upon the nervous system as has already been sufficiently set forth in the previous lecture.

It cannot be doubted that fever may be caused by other agencies than pyrogenic substances present in the blood or tissues. The effects of exposure to external heat have already been considered. We found experimental evidence in support of this view ably advocated by H. C. Wood, that in typical cases of thermic fever or sunstroke, the strain placed upon the heat-regulating centres by exposure to excessive heat, results in paralysis of these centres with rapid elevation of the external temperature.

The cause of the elevation of temperature in tetanus is not altogether clear. In this disease the temperature may vary but little from the normal, but it is not uncommon to find excessive elevation of temperature toward the termination. Temperature of 113° (45° C.), or more have been recorded. The idea would naturally suggest itself that the rise of temperature is due to the tetanic muscular spasms, which we know to be accompanied by production of heat. Leyden was led to adopt this explanation by the results of experiments made upon animals. He succeeded by producing violent tetanic contractions of the muscles of a dog in raising the internal temperature in the course of one hour and a half from 103.3° (39.6° C.), to 112.6° (44.8° C.). Clinical observations, however, do not support the supposition that the hyperpyretic

¹⁷ Aronsolin. Deutsche Med. Wochenschrift, 1888.

temperature of tetanus are dependent upon the muscular contractions. In spite of violent and prolonged tetanic spasms the internal temperature may remain normal or be but slightly elevated. There is a decided similarity between the hyperpyrexia of tetanus and that which occurs in rheumatism and some other diseases, particularly in affections of the central nervous system, and it certainly seems probable that in all of these cases there is a profound disturbance of the heat-regulating centres. As the elimination of urea in tetanus is not excessive, we find additional reason to separate tetanic hyperpyrexia from ordinary febrile conditions. Recent investigations of the etiology of tetanus have rendered it certain that at least some forms of this disease are caused by infection with a special microorganism. This has been demonstrated not only in the tetanus of animals but also in that of human beings. The tetanus bacillus has been found widespread in the ground in Germany, and I find it abundant also in the ground in Baltimore and its neighborhood. In experimental tetanus the specific bacillus, which has not yet been obtained in perfectly pure culture, develops chiefly in the tissues near the seat of inoculation and does not invade other parts of the body and the blood to any great extent. This indicates that the symptoms are referable chiefly to poisoning by some chemical products of the specific microorganism. As has already been mentioned, this view is sustained by Brieger's discovery in cultures containing the tetanus bacillus of a peculiar ptomaine which he has called tetanin, and which produces tonic spasms of the muscles. It is therefore reasonable to believe that the hyperpyrexia of tetanus is caused by the action of poisonous products of the tetanus bacillus on the nervous centres concerned in temperature-regulation. Our present knowledge, however, does not warrant us in asserting that all forms of tetanus in human beings are of an infectious nature.

In the first lecture of this course, evidence was presented to show that pyrexia may be caused by affections of the nervous system without the agency of any pyrogenic substance. It may jar upon the sensibilities of some to call this form of pyrexia, fever; but this hesitation can be due only to the idea that symptoms which are referable to infection or intoxication are essential to the conception of fever. In my judgment, we shall be led into confusion if we attempt to incorporate into our definition of fever more than properly belongs to the febrile disorder of animal heat, and from this point of view there can be no impropriety in designating as fever the pyrexia dependent directly upon affections of the nervous system.

It is not necessary to repeat here the conclusive experimental evidence for the existence in the nervous system of centres or regions which control the dissipation of heat, and the chemical processes concerned in the production of heat. Those who are not much impressed by experiments upon animals can hardly fail to be convinced by the clinical evidence which demonstrates that lesions of the nervous system may cause elevation of temperature which cannot be referred to the action of any pyrogenic substance. Such evidence must, of course, be collected from cases where the fever cannot be explained by inflammation, bed-sores, or other lesions which can give rise to absorption fever. W. Hale White,¹⁴ in the interesting

article already referred to, has collected a number of cases of tumor, hæmorrhage, softening, sclerosis, injury, and functional disturbance of the spinal cord and brain, in which the pyrexia or hyperpyrexia is to be explained only by the lesion of the nervous system. The number of such cases might be considerably increased. These cases show that lesions of the cervical part of the cord, of the pons, of the corpus striatum, and of the neighboring white matter are most likely to be associated with high temperature, but the cases hitherto reported hardly justify positive statements as to the exact situation in man of thermically active nerves or regions in the brain and spinal cord. As might be expected, not only focal lesions, but also diffuse diseases, such as occur in general paralysis of the insane, locomotor ataxia, multiple sclerosis, may give rise to pyrexia, which sometimes assumes the form of temperature crises. It is in harmony with what we know of other disorders of the nervous system to find that not only demonstrable anatomical lesions, but also functional disturbances, may produce nervous pyrexia. Such functional disturbance furnishes the most probable explanation of the singular and erratic elevations of temperature which have been occasionally observed in hysteria.

A question which merits more consideration than it is possible to give to it on the present occasion relates to the possibility of the occurrence of fever as a reflex neurosis. The advance in our knowledge of the etiology of traumatic and inflammatory fevers has pushed aside almost wholly the old doctrine of irritative fever. There are, however, cases of fever where still the simplest and apparently most rational explanation of the causation is peripheral nerve-irritation. As examples, may be mentioned the fever resulting from teething in children, that sometimes accompanying the passage of gall-stones or urinary calculi, and that occasionally following the insertion of a catheter into the urethra. It must be admitted that the evidence on this point is not conclusive. Especially is there lack of satisfactory experimental evidence. Electrical irritation of the exposed sciatic nerve is, under ordinary circumstances, followed by a moderate fall of temperature, although Ott¹⁵ finds that in atropinized cats such irritation is followed by a decided rise of temperature. But these experiments cannot be held to weigh for or against the doctrine of irritative fever. Observations on human beings indicate that peripheral nerve-irritation, if ever a cause of fever, is so only in certain situations, and under certain forms of stimulation and in certain individuals. In infants temperature-regulation is more labile than in adults, so that it may be that nerve-irritation can more readily disturb the temperature in the former than in the latter. The chief controversy as to the question now before us has been as to the explanation of certain forms of urethral or catheter fever. It cannot be doubted that a large number, probably most, of the cases of so-called urethral fever are instances of genuine absorption fever. Even if we exclude all cases with diseased kidneys, or with cystitis or other inflammatory disease of the urinary passages, there remains a certain number of cases in which the gentle insertion of a disinfected catheter is followed by distinct febrile reaction. It seems unwarrantable to assume that in all of these cases the catheter has caused a laceration of the urethra, through which pyrogenic substances

¹⁴ W. Hale White. The Theory of a Heat-Centre from a Clinical Point of View. *Guy's Hospital Reports*, Vol. 42, 1884.

¹⁵ Ott. *Therapeutic Gazette*, August, 1887.

are absorbed. What is the nature, and whence the source of these substances? In the cases now under consideration they can be sought only in the normal urine, and of their existence there no proof has been afforded. In these cases, it is certainly very difficult to understand how the fever can be interpreted as due to the absorption of some pyrogenic agent, and, failing this explanation, the idea that the fever is dependent upon nerve-irritation is most plausible.

I have now presented to you an imperfect survey of the general etiology of fever. The attempt has been made to classify the leading causes of fever, but it can not be claimed that every variety of fever can be assigned to one of these groups of causes. Our knowledge of the etiology of special fevers is still too imperfect to warrant any such generalization. This is an attractive field for much patient investigation. I need only remind you of the uncertainty which still pertains to the causation of many of the fevers of warm countries. There is reason to believe that there remain yet to be differentiated etiologically specific types of fever which occur among us, and particularly in our Southern States. It may be that increasing knowledge will necessitate the recognition of varieties of pyrogenic agents entirely distinct from any with which we are now familiar. It is certain that future investigations will add clearness and precision to our ideas of the nature and mode of action of causes of fever which at the best we can now understand only imperfectly.

I cannot conclude this course of lectures without saying a word on a subject which must engage the attention of every one who gives much thought to the nature of fever. What is the significance of fever is a question which thrusts itself upon us no less than it has upon physicians in all ages. Unfortunately, we cannot to-day any more than could our predecessors give other than a speculative answer to this question. There have been in all ages enlightened physicians who have held the opinion that fever is a process which aids in the elimination or destruction of injurious substances which gain access to the body. Under the influence of ideas which sought in increased temperature the origin of the grave symptoms of fever, we have in recent times in great part lost sight of the doctrine once prevalent, that there may be in fever a conservative element. There is much which speaks in favor of this doctrine. The real enemy in most fevers is the noxious substance which invades the body, and there is nothing to prevent us from believing that fever is a weapon employed by nature to combat the assaults of this enemy. The doctrine of evolution indicates that a process which characterizes the reaction of all warm-blooded animals against the invasion of a host of harmful substances has not been developed to such an extent, and is not retained with such pertinacity without subserving some useful purpose. This is a point of view from which many pathological processes can be regarded with advantage. Even suppuration, which one does not generally look upon as a beneficent provision, is a most important instrument of nature in forming a barrier against general infection of the body with certain microorganisms. It is impossible, with our present knowledge, to say in exactly what way fever accomplishes a useful purpose. There are facts which suggest that in some cases of fever the increased temperature as such may impair the vitality or check the virulence of pathogenic micro-

organisms, but there are many circumstances which make it difficult to suppose that this is the agency by which fever usually exerts a favorable action. The supposition seems to me more probable that the increased oxidation of fever aids in the destruction of injurious substances. According to this view the fever-producing agents light the fire which consumes them. It is not incompatible with this conception of fever to suppose that the fire may prove injurious also to the patient, and may require the controlling hand of the physician. Time will not permit me to elaborate further the ideas here suggested. In the course of these lectures some facts have been presented, and others might be drawn from clinical and experimental observations, which favor the hypothesis that fever is in a certain sense a conservative process. Unproven and intangible as the hypothesis may seem to some, no apology is needed for bringing to your attention a conception of fever in favor of which much can be adduced, and which, if true, is of fundamental importance, both theoretically and practically.

Original Articles.

FIFTY CASES OF SCARLET FEVER.¹

BY HENRY JACKSON, M.D.

I wish to present to the Section a short account of these cases, as an epidemic of this size always gives one an opportunity of making some interesting observations.

These cases occurred in the North End of Boston during the months April to October.

April	4	
May	3	Very mild.
June	3	
July	3	More severe.
August	10	Much more severe, with throat trouble.
September	24	Severe type with diphtheria.
March	2	
Total,	50	

Of these cases thirty may be characterized as of a mild type. Prodromal period short, usually twelve to twenty-four hours; vomiting almost always present; headache and malaise; usually more or less complaint of sore throat. In cases where an examination at the early stage was possible, I did not find the appearance of the throat sufficiently characteristic to warrant a diagnosis of scarlet fever merely from this symptom. In no case were convulsions seen. The period of efflorescence lasted from twenty-four hours to four days, rarely longer. Temperature not high. Many of the children wished to be about the house, and were with difficulty kept in bed, even during the height of the eruption. Vomiting ceased in most cases on the appearance of the eruption; occasionally it continued until convalescence was established.

As the other cases presented some points of particular interest, I will give you them more in detail. In two cases there was no eruption and yet the diagnosis of scarlet fever seems to be fairly well justified.

Katharine McCoy, fifteen years. Slept in a bed with two children who had well-marked eruption. She had a moderate fever, headache, malaise, pharyn-

¹ Read before the Suffolk District Medical Society, Section for Clinical Medicine, Pathology and Hygiene, February 8, 1888.

gitis and tonsillitis (not follicular). Well on the fifth day. No sequelae.

Annie McLaughlin, eleven years. Lived in the same flat that three children lived in who had scarlet fever. No eruption, slight pharyngitis, mild febricula of a few days' duration. Of course scarlet fever would not have been considered except for the other well-marked cases. Under the circumstances it seems to me highly probable that her symptoms may have been due to scarlet fever.

Raphael Bornstein, four years. Acute lobar pneumonia on seventh day. Course of the scarlet fever mild and of no special interest.

In four cases convalescence was delayed by supuration of the parotid gland. One case was complicated with measles.

Mary McCalligan, two years. Well-marked eruption of scarlet fever; severe catarrhal pharyngitis. On the fifth morning the eruption had faded, and the temperature was normal: that night temperature 102°, and body covered with a very fine punctate rash. Next day an abundant and well-marked eruption of measles. Catarrhal inflammation of eyes, nose and bronchi. Child very sick for a week. Pulse 160, temperature 103° to 104°, respiration 45. Lobular pneumonia in right front. In the latter part of the attack of measles, the skin presented a very curious appearance, as the bright red papules of the measles were covered by the dried scales left by the scarlet fever. Urine showed a small trace of albumen and a few casts. Complete recovery.

One case only had very high fever.

Nettie McCullough, six years. Eruption well-marked; temperature 104° to 105° for several days; pulse 140; stimulants ordered. Disease was followed by leucorrhoea of several weeks' duration; and one month after the attack of scarlet fever she had articular rheumatism.

One case had oedema during convalescence without any apparent renal disease.

Nellie Connors, six years. Mild fever; no vomiting, slight pharyngitis; during convalescence very marked anæmia, slight oedema of face, hands and feet. Careful and repeated examination of the urine gave a negative result as to the existence of renal disease. I attributed the oedema to the anæmia, but found that Strümpell spoke of oedema as occurring after scarlet fever, dependent upon molecular change in the walls of the bloodvessels.²

Two cases of acute Bright's disease. In the second and third weeks respectively, after the onset of the scarlet fever, urine smoky in color, contained one-fourth per cent. of albumen, large numbers of casts of various kinds. In each case headache, vomiting and general oedema. Complete recovery in each case.

The following case is one of great interest; and I fortunately have complete notes of the case, as the child was under the care of a trained hospital nurse.

R. P., nine years. November 4th. Eruption appeared, very light; pharyngitis marked. For three days pulse and temperature very high. On tenth day temperature normal, and pulse 100. During convalescence pulse very slow and irregular, frequently intermittent; no murmur detected. Under small but frequent doses of tincture of digitalis and brandy pulse became rapid, regular and of good strength.

November 20th. Sudden rise of temperature, with

swelling of the glands of the neck. Examination of the urine negative.

November 23d. (Three weeks after the onset of the fever.) Passed very little urine; vomited several times; slight oedema. Rise of temperature. Urine smoky; one-quarter per cent. of albumen sediment, that of acute parenchymatous nephritis. Gradual improvement in general symptoms and in the character of the urine until December 1st.

After having passed a remarkably good day, the child woke on the night of December 1st, and complained of severe frontal headache. Vomited several times during the night. These symptoms continued through the forenoon of December 2d. Small dose of morphine, one-sixteenth, given on account of headache.

In the afternoon became somnolent, and soon completely unconscious. At 4 p. m., respiration 20, pulse 130; pupils not noted by the nurse. Diagnosis of opium-poisoning was made by a physician, and treatment ordered accordingly.

I saw the child at 5.30. Found respiration 18, irregular in rhythm; pupils normal. He was inclined to sleep, but when aroused, answered questions intelligently. An hour later, roused with difficulty; when addressed, did not answer the question, but counted twenty-six, twenty-seven, twenty-eight, twenty-nine, thirty. He never counted more than thirty, always began with twenty-six, and sometimes repeated the number twenty-six several times without counting further.

At 8 p. m., perfectly unconscious; respiration ster-torous, irregular, two to four respirations being followed by a long pause, etc.; pulse 120; pupils regular and of normal size; convulsive twitching of the right side of the face and right arm, which lasted for about three-quarters of an hour; no paralysis.

Next morning perfectly conscious; showed no symptoms, and had no remembrance of the events of the previous day.

For several days the urine was very scanty, contained a large amount of blood and albumen, and many casts. From this time on gradual improvement, until convalescence was completed. The distinctly localized convulsive twitching seemed to point to some lesion of the cortex; but I think that the rapid recovery makes it more probable that all the cerebral symptoms were dependent upon uræmia. There was at this time a slight systolic soufflé at the apex, but no enlargement of the heart.

January 25th. Boy stout and well; no murmur.

Eight cases had severe diphtheritic inflammation of the throat; that is to say, there was extensive ulceration, with membranous exudation on the tonsils and uvula, or pillars of the fauces. Cases in which several small gray patches were seen on the tonsils are not included in this list.

Flint, Henoeh and Strümpell say decidedly that, though the disease is anatomically identical with the condition usually found in diphtheria, the disease is etiologically distinct. Eichhorst considers it at least possible that the condition is due to true diphtheria implanted upon the already existing scarlet fever.

The chief arguments that the disease is not diphtheria are clinical in nature; namely, (1) Invasion of the larynx is rare; (2) paralysis rarely follows; (3) the disease is not so fatal as true diphtheria.

So far as any conclusions can be drawn from so

² Third Edition. Vol. I, p. 63.

small a number of cases, all of these arguments are refuted by the cases which came under my observation.

In only one case did the diphtheritic inflammation appear early in the course of the scarlet fever; in the others the membrane was observed on the third or fourth day, or during the stage of desquamation.

One case died from invasion of the larynx by the diphtheritic membrane. In a second case there was probably membranous laryngitis, as evidenced by hoarseness and embarrassed respiration. The child died apparently from asthenia. I doubt if tracheotomy would have been of any avail, even if the parents had assented to the performance of the operation.

Two cases died of paralysis of the heart; one when convalescence was perfectly established, and one when the child was apparently improving rapidly.

The mortality was large, as four out of eight (50 %) died.

Cases of especial interest are the following:

Millie Hackett, three years. When first seen there were remains of a rash of scarlet fever; on both tonsils and uvula a dirty gray membrane, which spread in a day or so to the pillars of the fauces. Parts bled if touched. Another physician was called, as my prognosis was grave. On the eleventh day I saw the child playing in the street. No ulceration in the pharynx. On twelfth day, sudden death from paralysis of the heart, according to the account given by the family.

Johanna Molineux, two and a half years. Brother of the patient had had a mild attack of scarlet fever eleven days previously. Patient had a mild attack without marked pharyngitis. Fifth day, tonsils much swollen. In the course of a few days both tonsils and uvula were covered with membrane; lips and edges of nostrils ulcerated and bleeding. Thirteenth day, voice hoarse and almost inaudible; respiration somewhat embarrassed. Fifteenth day, death, without any preceding dyspnoea. Trace of albumen and a few casts in the urine.

Daniel Shields, five years. When first seen desquamation was going on; emaciation extreme; voice whining; ulceration of the edges of lips and nostrils; membrane on both tonsils and uvula; abscess below right ear that contained thin, bloody, foul-smelling pus. Treatment: locally, iodoform; internally, corrosive sublimate (gr. $\frac{1}{10}$ every hour), whiskey and eggs. Perfect recovery.

Three cases occurred in one family by the name of O'Brien. Hygienic surroundings good.

September 14th. Louisa, eleven years. Malaise; slight pharyngitis; rash, which lasted twenty-four hours. Second day, perfectly well. No sequelae. No desquamation.

September 14th. Mary, nine years. Eruption very full and bright. Third day, membrane on uvula and pillars of the fauces; mucous membrane of lips ulcerated and bleeding. In the course of a few days, foul ulcer on right elbow, ulcer of genitals and perineum. Sixth day, right knee red, swollen and tender. Next day same symptoms in left knee and left wrist. The disappearance of the latter symptoms in two days, under the use of salicylic of sodium made the diagnosis of rheumatism probable. Sudden death on tenth day.

James, three years, and Anne, four years. Both taken sick September 17th. In both cases eruption

intense; face much swollen, so that the eyes were partially closed; oedema of hands; urine contained a trace of albumen and a few casts. On third and fourth days respectively a membrane appeared on the tonsils and uvula. Both recovered completely.

The oedema in these cases was apparently due to the intensity of the eruption, as in neither case did the examination of the urine warrant the diagnosis of Bright's disease. Two other children that slept in the same room were not sick. It is an interesting fact that during the height of the disease the mother was confined, and convalesced without having any puerperal fever. She had no doctor or nurse.

SUMMARY.

Of these fifty cases, four died (*one in twelve*), all of diphtheria. These four cases are the only ones that died in my district, of scarlet fever; from April to January, the total number of cases being eighty-eight. This gives a mortality of *one in twenty-two*.

It has been interesting to me, and very satisfactory, to find that I have not been called to a single case of scarlet fever in a family which I had attended previously for any other disease. Of course it was impossible for me to think of changing my clothes, or even disinfecting the hands, before attending other cases.

The new cases visited each month average in my district two hundred.

The eight and only cases of diphtheria, all occurred in three weeks, and represented one-third of the total number visited in the three weeks.

Treatment. In mild cases expectant. In cases with high fever, tepid sponge baths and antipyrine. In cases with diphtheria, brandy and tinctura ferri chloridi.

TYPHOID AND MALARIAL FEVER IN BOSTON.

BY JOHN A. JEFFRIES, M.D., BOSTON.

In view of the recent article on typho-malaria in Boston, by Dr. Whittier, the following cases seem of interest. They all occurred in an area bounded by the water, Kneeland, Kingston, and Essex Streets. The first two cases are examples of quotidian and tertian malaria, and are given as the histories seem to suggest infection contracted in Boston. The rest of the cases all occurred in one family, two of whom had typhoid fever at the same time. Both the relapse of malaria and the typhoid seemed to be due to crowding in two sunless, dirty, badly drained and ventilated rooms.

CASE I. April 28, 1887. J. H., male, twenty-six years old, married; has always lived in Melrose until last winter, when he moved into his present lodgings. Always healthy; knew nothing of malaria. When first seen he complained of being seized with fever, vomiting, and pain in the abdomen, about six in the morning. Now in a profuse sweat; temperature in the axilla, 103.6°, pulse 120, respiration 20. All the viscera examined, and nothing abnormal found. Urine clear, light, profuse; no albumen. Temperature at 5 p. m., 99°, pulse 80.

April 29th. Had a fever early this morning; temperature at 11 A. M., 101°; at 5 P. M., 99°.

April 30th. Had a fever same as the last two days; temperature at 11 A. M., 102°. Still no physical signs. Quinine ordered at night.

No more chills occurred, and patient went to work in two days.

CASE II. September 12, 1887. D. C., male, twenty-four years old, married. Born and bred in Paris, went to New Orleans for a week, and then came to Boston six months ago; never had a fever or periodic disease. At the time of my visit patient seemed unstrung, and gave a history of being waked up early in the morning by a hard chill, followed by fever and sweating. No physical signs.

September 13th. Seems perfectly well.

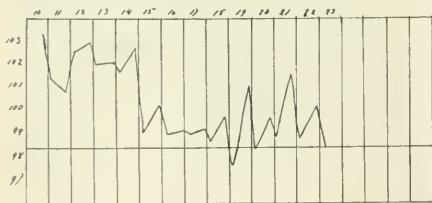
September 14th. Had a chill again this morning, with fever and sweating; still sweating at time of visit. Ordered a full dose of quinine four hours before the time of the next attack. From this time on no chills occurred, but patient was poorly for ten days, with a febrile rise of temperature on the even dates.

CASE III. August 8, 1887. G. D., male, seven years old, pale and thin; old history of tertian malaria in Springfield, two years ago. Now suffering from mild diarrhoea. Prescribed camphorated tincture of opium and bismuth.

August 9th. No diarrhoea, but child the same.

August 10th. No diarrhoea, but child has taken to his bed, and mother gives history of a chill about 9 A. M. Physical examination showed head and chest normal; the liver to be felt at the edge of the ribs on the right side, and a half-inch below the ribs on the left side; spleen out to ends of ribs, tense, tender; bowels not tender, gurgling.

From this time on the child ran a regular course of alternate poor and bad days, vomiting, numerous ochre stools, broucheitis, and prostration being the constant symptoms, and chills on alternate days. On the seventeenth prostration was great, and much stimulants had to be given. Convalescence was slow, rose-spots were not seen. The treatment was confined to quinine, milk, raw eggs, and whiskey. Below is given a temperature chart, from which it will be seen that during the collapse the malaria changed from the even to the odd dates.



CASE IV. August 10th. F. D., male, sixteen months old, brother of Case III. Caught malaria, when four months old, in Springfield. Had a distinct chill and fever, no sweat noted, on the 9th, 11th, and 13th. Treatment, quinine.

Shortly after, while the boy was still sick, the mother came down with tertian chills, and had to take much quinine. Spleen enlarged.

Lastly, on the 10th of September, the father came down with a mild attack, like Case IV, of which I was unable to secure any satisfactory records.

The first two cases are reported as examples of pure malaria, occurring for the first time in men who had for at least six months been resident in Boston. The

third case is a very fair example of typho-malaria, or, as I prefer to call it, and reported to the Board of Health, typhoid and malaria. It will be noted that the malaria was a relapse of an old trouble, apparently induced by the same lack of sanitary conditions that caused the two cases of typhoid.

All my other cases of typhoid fever ran a regular course, showing no sudden changes from day to day.

PROGRESS IN THE CARE OF THE INSANE.

BY WALTER CHANNING, M.D.

PROVISION FOR THE INSANE.

THE year 1887 has shown further and important progress in correct methods of providing hospital or asylum accommodations for the insane.

The theory that almshouses can be so managed as to properly care for and treat insane persons, has been strenuously and persistently combated, and in time such an inadequate, not to say reprehensible means of provision must be wholly done away with.

Strong arguments in favor of placing the insane entirely in the care of the State have recently been advanced by the *American Journal of Insanity*. The *Journal* quotes the following, in its January number, from a letter of the Hon. Wm. P. Letchworth, President of the New York Board of State Charities:

"I believe there is no question but that State care is better than county care; and when the cost is not estimated, but arrived at by a separate system of accounting, is cheaper. Several counties have tested this, and found to their surprise that their insane cost them much more kept at home than if sent to Willard (a large asylum for the chronic insane). . . . The reason why State care is better lies in the fact that it is administered by uncompensated, non-partisan boards, whose members are employed for long terms. Boards of supervisors are constantly changing their membership, and the great advantage arising from cumulative experience is lost. Besides, under the county system, the care of the insane becomes, to a greater or less degree, a medium for the distribution of political patronage."

Dr. P. M. Wise, superintendent of the Willard Asylum, reiterates what he has often said before, that each year's experience proves that the county care of the insane is liable to relapse into a condition far below a proper standard, and the remedy is not always within reach.¹ Dr. Wise quotes Dr. Henry M. Hurd, of Michigan, who says: "The county system, as a whole, lacks definiteness of plan, and is haphazard and capricious, depending too much upon local public sentiment and individual ideas of reform and economy."²

Taking the experience of nearly all observers of the last thirty years, it may be stated as a settled fact that State care for the insane is *safe*, county care hazardous, and generally *unsafe*, and any further steps taken in providing for the insane should be made clearly and systematically with this idea in view. Any exception, any departure from this plan, however attractive and easy at the moment, will be pretty sure to be attended by unfortunate consequences in the end.

¹ Annual Report, 1887.

² Colony System of Michigan.

The building of the last year has been done very much in accord with the above principle, for what I have called an *idea* should be more correctly called a *principle*. I have already alluded in the JOURNAL to the "Colony System of Michigan," which has been further developed at a trifling cost with complete success. New York has been very active in carrying out this principle, and if coming events cast shadows of any value before, we may soon expect to see her insane cared for in the ideal manner. To be sure the insane of the city of New York are far from being provided with adequate accommodations, and the "Williard exemption act" is still in force, but both these evils are being actively agitated, and the spirit in New York, as far as her insane is concerned, is so progressive that we cannot doubt that the proper remedy is sure to come.

The accommodations at the State Asylum at Poughkeepsie have already been considerably expanded, and it now has assumed the character of a "mixed" asylum, or one taking both the curable and incurable. The buildings for the latter class are on a different part of the farm from the buildings for the former class.

The most important undertaking in which New York is now engaged in her efforts to provide for her insane, is the contemplated erection of the new institution at Ogdensburgh. The architect of this asylum, which is called the "St. Lawrence State Asylum for the Insane," lays down the following principles as necessary to the successful administration of an institution for the insane:³ 1. Buildings not more than two stories high; the first story for day-rooms, and the second for sleeping purposes. 2. Buildings for the feeble, helpless and disturbed to be only one story high; buildings for the latter being so situated as not to disturb other members of the asylum. 3. A sufficient number and variety of buildings to admit of ample classification, without adding to the cost of maintenance. 4. The general arrangements of the buildings to be such as to secure to the patients, as far as possible, the conditions of domestic life.

There are to be five groups of buildings, and fourteen detached cottages. The central and most prominent group comprises twenty-two separate buildings. Twelve of these, which are for the actual dwellings of the patients, are connected together and to the central building. The recent cases are to be cared for in six ward-buildings, three on each side of the administration, or central building. The day and sleeping accommodations are to be separate, and there are to be four associated dining-rooms.

A second group of buildings consists of one-story pavilions, and two two-story buildings, with two associated dining-rooms, all for the filthy and demented, two hundred in fifty being the supposed number. An assistant physician with his family would reside in this building.

A third group of seven buildings is for a physically stronger class of patients, and they are two stories high. One of the buildings is for a dining-hall for the entire number of two hundred and thirty-one patients. A physician would also reside in this group.

A fourth group is composed of three cottages, buildings of two stories, and a separate one-story building for a dining-hall, seventy-five feet apart. This group

would accommodate two hundred and five patients of the intermediate class.

A fifth group is composed of detached cottage buildings, accommodating from twenty to one hundred patients each, of the quiet class.

GENERAL PARALYSIS OF THE INSANE.

It is of great importance for the medical profession to have this form of cerebral disease brought forcibly to their attention, as it represents one of the forms of physical degeneration dependent on the mode of life of the nineteenth century. First described by a French writer about sixty years ago, it was seldom seen or recognized in this country until shortly before the civil war. During the war and immediately after it rapidly increased, and since the end of the war it has gone on becoming more and more common.

The general truth of these assertions is pretty well borne out by the statistics of the State Insane Asylum at Utica, New York,⁴ which has been carefully and accurately kept since the opening of the asylum. We find that in thirty-nine years 630 general paralytics have been admitted to the asylum, of whom 407 have died, or nearly sixty-six per cent., while the general mortality of the asylum from all causes during these years, taking the whole number treated, have not been more than 9.80 per cent., and have fallen as low as 3.66 per cent. For the year ending September 30, 1887, there were 61 deaths in the asylum, and of these 15, or nearly 25 per cent., and all males, were cases of general paralysis!

The number of females in the total number of 639 was only 69, but of these thirty-nine died. Up to the year 1869 only twelve females were admitted. Since this time, with only a slight rise, say from eight to ten per cent., in the number of patients admitted, 57 females have been admitted, or nearly five times as many in the years from 1869 to 1888 as in the years from 1849 to 1869.

In the year 1887, 27 general paralytics were admitted into the asylum, while in the five years from 1849 to 1854, inclusive, with proportionately larger general admissions, but 16 were admitted, three only being females.

SYPHILIS AND GENERAL PARALYSIS.

A discussion on this subject took place at the recent International Medical Congress in Washington, in the section for Psychological Medicine, which perhaps did not elicit much that was new, but old and familiar data were put together in an interesting manner.

Dr. George H. Savage, superintendent of the Bethlem Hospital for the Insane, in London, led in the discussion, a full and careful report of which may be found in the *American Journal of Insanity* for October, 1887, and January, 1888.

Dr. Savage described several groups of cases in which syphilis is related to general paralysis. In the first group were cases of syphilis of long standing followed by general paralysis with acute symptoms. He mentioned cases in which general paralysis had supervened after the syphilis had existed from seventeen to thirty years. It occurred rather suddenly, and went on quickly to a fatal termination. He thought there was no doubt about the syphilitic origin of these cases.

In the second group were cases which ran the course

³ Report to the Board of Managers, by M. J. G. Perry, Am. Jour. Insanity, Jan., 1888.

⁴ Annual Report for 1887.

of ordinary general paralysis in the ætiology of which syphilis is an undoubted factor, but which in no way modifies the symptoms of the disease.

In the third group were cases in which, after a well-marked history of primary syphilis, symptoms due to a local syphilitic nerve-lesion, such as paralysis of the muscles supplied by the third nerve, monoplegia, hemiplegia, simple aphasia, appear. These cases which come under anti-syphilitic treatment, and in some instances are apparently cured, later become weak-minded, and develop symptoms of general paralysis.

In the fourth group were cases starting in the spinal cord. Many writers assert, Dr. Savage said, that the larger number of cases of locomotor ataxy have some syphilitic history, and a very fair proportion of cases of general paralysis begin with locomotor ataxy. There are several forms. In some the ataxy develops first; in others the ataxy and the general paralysis develop about the same time.

Dr. Savage had seen only one case of general paralysis appear to get well, and he died of some obscure nervous disease under Dr. Ferriar. Probably this was a case of syphilitic general paralysis with a prolonged remission.

Dr. Langdon Down, of London, thought that nearly all cases of locomotor ataxy were of a syphilitic character.

Dr. Yellowlees, of Glasgow, made some very sensible remarks. He thought we should be very careful in our deductions as to the effect of syphilis in the history of the disease. "They unquestionably coincide in the same individual without the cerebral paralysis being at all perceptibly modified thereby." Cases beginning with spinal symptoms are probably of syphilitic origin. In cases of general paralysis occurring in patients with a history of constitutional syphilis, we have the disease modified to a greater or less extent by local paralysis, and by a greater tendency to local paralysis than in the ordinary cases, and that is the whole of the matter. "At least I don't know that our present knowledge gives us farther light than this gives us."

Dr. Nichols agreed to a certain extent to what Dr. Yellowlees had said, and added: "I have supposed that excessive venery, excessive intellectual labor, and loss of sleep were the most efficient causes of general paralysis of the insane. These causes, it seems to me, will produce this form of mental disease independently of syphilis. It has seemed, and does seem to me, that syphilis is not an essential cause of general paralysis of the insane."

HEREDITARY SYPHILIS AS A CAUSE OF IDIOCY AND IMBECILITY.

In connection with the discussion of syphilis as a cause of insanity, a paper by Dr. Fletcher Beach, of England, on this subject was read, its purport being to show that these forms of mental defect are rarely the consequence of inherited syphilis. Dr. Langdon Down, Dr. Beach said, did not find in more than two per cent. of his cases signs of inherited syphilis. Dr. Ireland was of the opinion that hereditary syphilis was not a frequent cause.

The disease leads more often to juvenile dementia about the time of puberty, then to idiocy or imbecility. "Of course constitutional syphilis can only lead to idiocy or imbecility by causing some disease of the skull, brain membrane, or arteries, or all of these

combined, and so affecting the nutrition of the brain, and though *a priori* one would think idiocy should be a frequent result, yet practically it is not so."

THE PARETIC COMPOSITE PHOTOGRAPH.

A ghastly, though perhaps not unprofitable example of the latest photographic "fad," the composite portrait, is found in a recent number of the *Journal of Nervous and Mental Diseases*.⁵ This consists of composite photographs of general paralysis and melancholia. The first one is made up from negatives of eight patients, three females and five males.

As the writer says, the percentage of females is higher than in the natural ratio of the two sexes in the disease. The cases are all in the second stage of the disease, and their individual portraits show the marked characteristics of general paralysis. The average duration of the disease at the time of photographing was, in the women, two and one-third years, and in the men one and three-fourth years.

The composite, according to the writer, and as far as one can judge from the picture given, seems to fairly represent the physiognomy of general paralysis. The eyes have the typical inexpressive and staring look; and the facial lines of expression have been gradually obliterated and smoothed out, giving the well-known appearance of easy-going complacency.

Though this number of cases is small it is still of some value, especially in so well-marked a disease as general paralysis, where a composite of fifty cases would not give a much more characteristic picture than one of ten. In other forms of mental disease a larger number would be necessary to establish anything like a type, but such work is in the right direction, and will aid in establishing what we so much need—clinical pictures of the various kinds of insanity.

PERSISTENT AND FIXED IDEAS.

Dr. Edward Cowles has recently published a paper on this subject⁶ consisting of the analysis of a case with prefatory remarks. The study of this case is worthy of special comment because it is done in the most painstaking, thorough and continuous manner inspired by the spirit of true scientific research. As far as my knowledge goes, it is the best study of a case of mental disease that has appeared of recent years in our American literature, and should serve as a model for others.

Modern psychiatry, Dr. Cowles says, has differentiated two great general groups of idiopathic mental disorder. The first group includes those that may lead to a healthy mind in a healthy brain, and are manifested in typical and regular forms and courses of mental phenomena. The other group contains those that occur in unstable minds correlative to constitutional brain defect, hereditary or acquired, and are manifested in irregular forms, in which the phenomena are made distinctive by being modified and varied in their order and degree from those in the first group.

To the first group may be applied the term "ordinary insanity," and to the second "paranoia."

The general relation of these physical and psychological elements may thus be stated in terms of function; as the stable mind is to the unstable one, so are the dis-

⁵ January, 1888. Composite Portraits of General Paresis and of Melancholia. By Wm. Noyes, M.D.

⁶ American Journal of Psychology for February, 1888.

orders, psychoses, incident to the former, to the degenerative processes in the latter, or so is ordinary insanity to paranoia.

The science of psycho-pathology deals directly with the central object itself; the mind is the man, and the conservation of mental integrity the aim. In the minute study of the psychical elements involved, the clinical student has in his field as important a branch of the new psychology as the pathologist or psycho-physicist.

There is a multitude of cases of the minor degree which, as far as they go, have all the essential characteristics of "fixed ideas," but in which the "idea" is not as fixed as to be always dominant; it can be resisted more or less successfully at will, in the milder cases, which are in a large majority. The ideas are simply insistent, and the term "insistent ideas" is here proposed as being more generic, and as including all forms, some of which became "imperative" and "fixed."

In the case reported, Dr. Cowles does not attempt a demonstration of the proposition he advances, though he thinks there is much in the case to sustain them.

The patient was a young woman twenty-eight years of age; the youngest of ten children, and without heredity. She was of more than ordinary intelligence, and of good sense, usually amiable and pleasing in manner. She was negligent of her dress, but showed to the ordinary observer no indication of mental weakness. To two of her physicians only did she reveal her morbid mental peculiarities.

From ten to twelve she had fears of harm and doubt as to whether simple acts were right, and she had to repeat some acts. At fourteen she was exhausted by a nearly fatal attack of typhoid fever, and menstruation began. She began again to repeat simple acts, as walking, dressing or undressing, and could not help it. Here was the beginning of a common form of fixed ideas. The idea that the act is wrong, with a vague fear that some harm will follow if it is not made right, and the necessity of repeating the act to make it right, is the starting-point in this case.

Among the friends of M., the patient, was one called C., beautiful and attractive, but the intellectual inferior of M. M., though very fond of C., became jealous of her, and finally thought she hated her, and thoughts of harmful things that might happen to her came into her mind. These feelings so far were only natural. But soon M. began to ask herself if she should not do violence to C. if she had an opportunity. This idea became mixed with the repetition of her acts; there was a feeling of vague fear if she did not repeat them; then there came to be associated with the insistent idea a definite feeling of fear of harmful consequences to C. if the morbid impulse of the repetition were not obeyed; then for a time this fear was dispelled by compelling herself to repeat the special act a certain number of times, more or less on different occasions. This fear of injuring C. was harmonized with her so-called hatred of her, as it was not so much because of the pain of contemplating possible harm to C. as because of the suffering M. feared would be inflicted upon herself by her offended conscience, if any such harm as she thought of did happen to C.

The feeling that something would happen to C. became so fixed in the mind of M. that she became unable to read or hear or think of any painful thing,

fearing that it was about to happen to C. She found a way to allay her painful feelings by thinking of some person known to her other than C., whom she would mentally substitute for the latter, and whom she would set up in her mind the moment the morbid idea came, to be the recipient of the suggested harm. Then it became necessary to carry this plan further into detail; the substituted person had to be a person with many characteristics opposite to C.; for example, there had to be a difference in age, sometimes of sex, initials of name, color of eyes and hair, etc. Next it became necessary to have ready in mind a number of chosen persons, two or three or four of whom, as the case might be, must be thought of in a certain order.

It is impossible within the limits of this article to further follow the analysis of this case, which with great elaboration demonstrates the complicated yet logical connection of one set of ideas with another. Enough has been given to show the character of the mental operations which, as Dr. Cowles says, "were all more or less insistent or imperative, strictly according to the closeness of association of the ideas with the central and ruling one; and corresponding also to the degree of fixation of such methods of mentation by repetition, practice and habit. All these products of mental phenomena are explainable upon the basis of normal psychical law."

HEMORRHAGES AND FALSE MEMBRANES.

Dr. Joseph Wigglesworth has written an interesting and suggestive paper on hemorrhages and false membranes occurring in the subdural space.⁷

He comes to the following conclusions: (1) The morbid conditions described under the term *pachymeningitis interna hemorrhagica*, are not the result of inflammation at all, but are solely due to the effusion of blood beneath the dura mater, the hæmatomata thus formed becoming organized, and eventually converted into fibrinous membranes. (2) Such effusions of blood are especially liable to occur in the insane by reason of the loss of support sustained by the meningeal vessels on account of the convolitional atrophy which is so marked a concomitant of insanity, assisted as this condition so frequently is by transitory or more permanent congestions. (3) It is because these conditions are most perfectly fulfilled in general paralysis that hæmatomata are more often met with in this disease than in any other form of insanity. (4) Whilst subdural hæmorrhage is by far the most frequently found in chronic cases of insanity, it is also met with in a small minority of acute cases, chiefly, if not solely, when the symptoms have been of a melancholic character; and in these cases the hæmorrhage may introduce a complication which may eventually be the cause of the death of the patient. (5) Whilst in the great majority of cases traumatism may be confidently excluded, there seems reason for believing that, under favorable predisposing conditions a slight injury may start hæmorrhage which will prove fatal.

— Magistrate — "Have you no written document to prove that your wife is really dead?" Peasant — "I have the doctor's bill." — *Fliegende Blätter*.

— A Wisconsin paper says that a farmer in Georgia made \$100 off an acre planted in watermelons, and that a physician in the neighborhood made \$200 off the same acre.

⁷ Journal of Mental Science, January, 1888.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOL- OGY AND HYGIENE.

ALBERT S. BLODGETT, M.D., SECRETARY.

REGULAR meeting at 19 Boylston Place, Wednes-
day, February 8, 1888.

DR. ALBERT N. BLODGETT, Secretary of the Sec-
tion, said: A matter of business which I would like
to place in the hands of the Chairman is an address
from the College of Physicians of Philadelphia. This
pamphlet is addressed to the various medical societies
of the country, and I presume that most of them have
received a copy, in order that they may see what has
been already done, and begging their coöperation and
their moral support in the effort to increase the effi-
ciency of the quarantine regulations of this country.

On motion of DR. BARNES, the matter was referred
to a committee of three, consisting of Drs. H. T.
Barnes, C. F. Folsom and S. H. Durgin.

DR. HENRY JACKSON then read a paper on

FIFTY CASES OF SCARLET FEVER.¹

DR. S. H. DURGIN said: The paper has been inter-
esting to me. It shows that the rate of mortality in
scarlet fever patients the past year has been rather
large. That I find to be so in looking over the whole
number of cases for the year 1887. While the per-
cent. of mortality to the total number of cases re-
ported has usually run along about five or six or seven
this year I find that the death-rate has been a little
more than twelve per cent. The mortality for the
last quarter of the year was very much greater than
for any other part of the year 1887. I am pleased to
hear the reader speak of the superadded condition
in the throat. It sometimes bothers me to know what
record I shall make when a case comes in with a his-
tory of having had scarlet fever eight or ten days, and
diphtheria three or four days. There seems to me to
be a difference of opinion among physicians as to
whether this membrane shall be considered as a dif-
ferent disease, diphtheria, or whether it is a part of
the severe type of the scarlet fever. Personally, I
have preferred to regard it as a part of the severe
type of the scarlet fever. I don't know that I am
right; at any rate, I shall be glad to have the question
settled for the sake of the records.

In looking over the records since 1850, it is very
interesting to see the course of scarlet fever in Boston.
There had been almost a continuous endemic condi-
tion down to 1877, and at that date I think the first
efforts were made on the part of the authorities to
stay the progress of this disease; and however feeble
these attempts were at the time (and I know that they
were not as radical as they should have been, and as
I would like to see them), yet the means put forth at
that time have either had a marked influence in sup-
pressing the disease, or else there has been a most for-
tunate change in some other way. At any rate, the
number of cases and number of deaths diminished
from that time; for a few years I thought it might be
a temporary holding up, but it is now eleven years
since this break began, and there is a very satisfactory
diminution in the number of cases of scarlet fever.

At that time we decided to exclude from the schools
pupils coming from the houses infected with this con-
tagious disease, and that has been done with more or
less effect; that is to say, the greater number are
shut out from the schools. I don't think that it
is perfectly carried out, but it is to a large extent.
The fumigation of houses after the removal of the pa-
tient after death or recovery has been quite persist-
ently kept up; it seems to me that it is fair to assume
that it has had a good effect.

I have looked over the records somewhat to see
whether cases have recurred in houses where the fumi-
gation has been made, and, so far as I can draw con-
clusions from these records, I should say that the
effect is most marked. One instance came to my
notice this afternoon, where, in one of the streets in
the South Cove, for five years previous to 1881, diph-
theria and scarlet fever had been reported in this
house, with several deaths. Cases had been reported
repeatedly.

At that time it was taken in hand, and about two
hundred pounds of sulphur were burned; and since
then there has not been a case of scarlet fever or
diphtheria reported in that house, although it is occu-
pied by eight or ten families. This is only one of
quite a large number of instances that were given me
this afternoon in which it seems to me fair to conclude
that the disinfectant has had a good result.

In regard to the treatment of scarlet fever officially,
I should say that, as in the case of the other con-
tagious diseases, isolation and disinfection were the two
things that we must look to for preventing the spread
of these diseases, and especially so in the case of
scarlet fever. Isolation is very hard to obtain in this
disease. We have very little hospital accommodation,
and the trouble is, in sending these cases to the City
Hospital, that they do not take the mothers with the
children, and you might as well attempt to get a pound
of meat from a living man without a drop of blood, as
to get the babies into the Hospital without the
mothers. You can't do it. In small-pox, that was
the way we treated it. We took all that could go,
and cleaned the house out. You must do that with
scarlet fever, if you will isolate the cases. We can-
not do that now, although I should like to see it done;
and we are left with the palliative measures, disinfect-
ing where we can, and isolating to the best of our
ability, which is rather poorly done.

DR. ALBERT P. WEEKS said: We have had quite
an epidemic of scarlet fever in Chelsea. I sent to
the Board of Health this afternoon, and found that
there had been reported 209 cases; but I don't imagine
that that represents more than four-fifths of the cases
that have actually existed. I should say that we had
had, at least, 250 cases since the first of October. It
existed there in the latter part of the spring and
through the summer, but only in isolated cases; some-
times we would not see a case for four or five weeks.
Out of that number I find that there have been twenty-
five deaths. I am sorry to say that I think the ma-
jority of these were in homœopathic hands. Homœo-
pathy is not so successful as it used to be in scarlet
fever. I have had three cases outside of Chelsea. I
find that in all I have had thirty cases since the first
of October, and these have presented quite a variety
for treatment.

I have had two deaths out of thirty cases. One
died of convulsions, the first day of the disease. The

¹ See page 421 of the Journal.

little brother had the disease very mildly, and I cautioned the family to keep the other one, which was smaller, away from that one; but the father said he might as well have it, and it was one of the families that let them do what they please. He went into convulsions, had purging and vomiting, and lived about twenty-six or twenty-eight hours. The other death seemed due to the intensity of the fever. I never saw an eruption equal it. I could not take the temperature, the little thing was so restless, but it seemed to be very high indeed. It died on the fifth day. I found one anginous case, a very bad throat, discharging that yellowish fluid from the nose which accompanies diphtheria, with no thick patches on the throat, but more like follicular deposit, with no sign of eruption elsewhere. Had it not been that the little sister came down about the same time with the scarlet fever, I should have questioned whether it was not nasal diphtheria really, although I got no sign of membrane in the nares. I have had one case of acute Bright's with anasarca, one case of abscess of the glands, the submaxillary, and one of hæmo globinuria.

Most of the cases have been comparatively light. The prodromic period has been of the usual shortness, manifesting little abnormality; vomiting has not been troublesome, except in a very few cases. Diarrhœa existed in one or two cases. My treatment has been mild febrifuge treatment: sponging, anointing with sweet oil, and bromides, if there was headache. The after-treatment in most of the cases I left to nature. I found but few of them who showed any signs of albuminuria when they have been kept carefully in, and upon a careful diet. I don't give my patients a very heavy diet; I keep them rather upon milk and starchy fluids than let them have such diet as would work upon the kidneys. It seems that our mortality there has been about one in ten, taking cases as they have gone. I have lost two out of thirty.

DR. DURGIN: There came to my notice to-day, in the *London Lancet*, a statement in regard to the contagious period of scarlet fever. They regarded the period of contagiousness as running from the first appearance, to the time when all *roughness of the heel and ankle* had disappeared, and they found that time to be for the five years, 1878 to 1882, inclusive, as follows: In one year the average number of days was 54, two years it was 70, and one year it was 74 days. It seems to me that this is a very much longer contagious period than we have been accustomed to think here in Boston. It seems to me only a few years ago when four weeks was regarded as the average time in which to regard the patient as in condition to give the disease.

This is certainly a very interesting question. If we are discharging patients and letting them come into contact with others, or allowing them to leave the hospital while they are in a condition to give off the disease, it certainly seems to me wrong. I hope that some discussion of this question will arise, and I would like to get the opinion of different physicians who have observed this condition. In regard to the roughness of the heel and ankle, it is something that I have never looked for, but in a general way, when asked in regard to the contagious period, I have been in the habit of telling people that when the skin was smooth they were free from contagion.

DR. C. F. FOLSON: I was interested in what Dr. Durgin said, and I have no doubt the work of the

Board has been efficient in diminishing the amount of scarlet fever. Some little while ago, I prepared a thirty years' chart of all the prevalent diseases in Massachusetts, and though I have not referred to it for many weeks, I think I am correct in saying that the diminution which was noticeable in Boston in the last ten or twelve years has been the same throughout the State and therefore not wholly or perhaps chiefly due to sanitary measures.

There has been another curious fact, namely, that since the very great prevalence of diphtheria there has not been in the State or in any part of the State any severe epidemic of scarlet fever to the same extent that it had prevailed in several epidemics before that. It is quite a curious fact to notice that in several towns of the State the two diseases, diphtheria and scarlet fever, have had to a certain extent an alternate prevalence; that is to say, in the years that diphtheria was quite prevalent scarlet fever was much less prevalent, and *vice versa*.

If I remember, and if I am wrong perhaps Dr. Durgin can correct me, the epidemic of diphtheria, which may now be considered endemic, began in 1873, commencing in the northwestern part of the State, and my impression is that it was two or three years before it got to Boston in full force; and since that time there has been a very striking diminution in scarlet fever throughout the State. That is particularly noticeable if one looks at the chart, the diphtheria line going up and the scarlet fever down.

I am very much struck at the condition of the public intelligence in regard to the control of the contagious diseases—that it is so far behind what it is in other places. If you go to the cities of England or Scotland and tell them what is not done in the cities here, they will shrug their shoulders and say: "Is it possible?" For instance, I think I am right in saying that there is not a single city in the United States which has a fever hospital in the proper sense, with the exception of the so-called pest-houses or small-pox hospitals. The law requires, in England, that every town of any considerable size shall have a separate hospital for the isolation and control of all contagious diseases, scarlet fever, diphtheria, etc. In a great many of them the measures for control are very complete.

I think perhaps, on the whole, the city of Glasgow is more thoroughly provided with the means of controlling these diseases than any other of the cities at the present time, and it might be worth while to say what they are doing, to see how far behind we are. In the first place, Glasgow is a city with a population twenty-five per cent. greater than that of Boston—a little more than five hundred thousand. Their hospital for contagious diseases consists of thirteen entirely separate buildings, on a lot of 31½ acres—three-fourths the size of Boston Common. It is in the suburbs of the city, on the banks of the Clyde. In one portion of the thirty-one acres there is a separate enclosure for small-pox. If I remember, there are three buildings there. The other ten buildings are for typhoid, scarlet fever, etc.; that is, more than one building for the separate diseases. These are entirely separated from the other hospitals, and the contagious diseases separated from each other.

In regard to the point of isolating small children, the city has provided small buildings into which you can put an entire family, and isolate them as long as

you choose. These buildings are pleasantly situated and very convenient, and it is customary to take an entire family and keep them there at the expense of the city.

The city controls altogether the sale of second-hand clothing, which is subjected to disinfection, and linens are washed under sanitary supervision. The isolation, of course, is what one would suppose it would be. Beside that, they have a number of public laundries where women can go and wash their clothes at a cheap rate, to discourage their washing them in tenement houses.

They say that they have diminished contagious diseases enormously, but I think it would be perfectly wild, in the present state of public information, to hope to get any of these sanitary measures carried out in our American cities. It seems strange, too, for public opinion seems in general to be in advance of those cities.

DR. VICKERY: I would like to ask, Mr. Chairman, in regard to the treatment of these cases, about the skin. Is anything done to lessen contagiousness?

DR. JACKSON: I generally told them to anoint the child with oil, and then wash it with water. No disinfection, as was spoken of in the journals last summer, was undertaken.

DR. VICKERY: I asked the question to bring out the opinion of the gentlemen present as to the possibility of rendering the scales that come off innocuous.

DR. MASON: In regard to that point, I can only say that we see a good many bad cases of scarlet fever at the City Hospital, and I think it is customary usually to have the skin rubbed with some carbolized ointment. How far that is beneficial in removing the contagion, I don't know. I should like to ask the reader if he noticed in regard to the period of invasion of these cases, if it was ever prolonged beyond a few days.

DR. JACKSON: In one case it was eleven days.

DR. MASON: After the first symptoms?

DR. JACKSON: After the exposure.

DR. MASON: I mean the period of invasion, after the first symptoms are shown. I don't mean the period of incubation.

DR. JACKSON: It was always short.

DR. MASON: I ask because a year or two ago I was called to see a teething child, who had severe symptoms suggesting meningitis; vomiting, stupor, fever, which lasted a week—so long that the idea of scarlet fever was given up. On the eighth day the rash appeared on the chest, legs, and arms, and afterward desquamation followed. I think that is probably a very unusual time. I found that a few cases were recorded where the rash did not appear for a week or more, but this was rare.

DR. BARNES: Dr. Jackson speaks of his being unable to take any precautions. A member of this Society told me a few days since of a case where he was in attendance, and six days later his own child, three or four years old, was taken sick with the disease, and he considered that he brought it to the child.

DR. JACKSON: I don't, of course, pretend to say that scarlet fever is not contagious, or that it could not be carried. I had charge of this district, where I had a great number of cases to see daily. There were generally seven new cases in a day; that is, two hundred new cases per month, and it was impossible for me, in going my rounds, to change my clothes.

After seeing these patients, I changed my clothes before seeing private patients. It was a curious fact to me that I did not carry the disease. And yet, we ought to be as careful as possible.

DR. WEEKS: I meant to speak of that point myself. I have watched it in my own practice very carefully, and I never but once thought I carried the disease. That was to my own child, nine months old. That was in a case that was close to my own house, and which I visited late in the evening. I assisted in the care of the child: I think my oldest boy contracted the disease in that way. I have a little fellow five years and a half old, and since his birth I have probably attended seventy-five or a hundred cases, and I never carried the disease to him. Sometimes I have had him out riding with me and been called to new cases, and have found that I had cases of scarlet fever, and I have had to take him home with me. I don't think the contagion is so easily carried as many people imagine. Sometimes I have been suddenly called to a child after visiting them, so that but little time would elapse between the time of the visits, but I have never seen anything come of it. I take the precaution to make these visits, when I can, in such a way as to protect other children. After making a visit to them I perhaps ride out as far as I am going, and work my way back, or else leave them to the last of the forenoon if I can, and then not see any patients again until after office hours. By so doing I am very sure that I have never carried the disease at all.

DR. SHERMAN: It has usually been considered that measles may be contagious before the rash appears, but that with scarlet fever there is not so much danger. But this is not always the case. Two weeks ago a child four years old entered the Home of which I have charge. This was Thursday, January 26th. He appeared well until Sunday, when he was taken with vomiting. The matron found the temperature 104½. She promptly isolated him. The temperature the first time was taken in the rectum. That night in the axilla the temperature was found to be normal. So she thought the child was well. But the next morning she found it was 104°, and the child began to complain of sore-throat. As she could not summon me readily, and thought that it might be scarlet fever, she promptly sent the child away from the Home. There was no other cases in the Home until the next Sunday. Before the nurse sent the child away she observed that there was no rash on the body. The rash appeared the next day.

On the Sunday, a week later, a seamstress, a young girl of twenty-three, was taken sick with sore throat and fever, and developed a rash upon the second day. The seamstress had only seen the child for a period of twenty minutes when she sat in the room by the bedside and watched him while the nurse went out to get a change of air. That was the only exposure, so far as can be found out, that she had had to the case.

DR. DUGGIN: I saw in 1868 a very singular case which illustrates possibly the extreme contagious character of scarlet fever. This experience was upon Deer Island. It was in the house of a family who lived alone, a father, mother and a little boy, about six years old. There was not a case of scarlet fever on the Island, either in the Institutions or in private houses, and had not been for many months. The father of this family left the Island and went into the

town of Winthrop, a distance of one and a half or two miles, in the winter, when the wind was pretty brisk, and visited a family where there was a case of scarlet fever. He sat in the house not over twenty or thirty minutes. The journey home required at least three-quarters of an hour. His boy fell sick with scarlet fever in about a week. It seemed to me that this was an extreme case, and therefore I made careful inquiry as to letters or packages, or anything that might possibly have brought scarlet fever, but I was able to eliminate everything except this visit of the father to this family.

DR. WEEKS: The first case of scarlet fever I ever saw was in a village. There had been no cases there for several years, and there were none in the neighborhood round about. The family had no communication with the outside world that would bring it there, and it was a mystery to the physicians there where the thing came from. But from that we had an epidemic running through the village. It breaks out sometimes very mysteriously.

I have two children, one seven and a half, and one nine months. I can find no traces of anything which communicated it to them. They have not been out of the house, they have received no packages, no one has been there, but they came down at the same time. And yet at other times great exposure does not communicate the disease.

DR. FOLSON: Quite a number of cases like that reported by Dr. Durgin have been reported to the State Board of Health, but in every case the individual who was supposed to be the carrier sat in a room which was a close one, and then on going out buttoned a heavy overcoat tightly around him, and if there was anything on his clothing the wind through which he passed would be of no avail.

In regard to Dr. Weeks's case, I suppose there are very few of the profession at the present day who would explain the case by saying that it arose without contagion. I suppose we would say that it would be like a case of small-pox occurring under similar circumstances, that it was a case where we are unable to find the source of the contagion.

DR. MASON: I would like to ask Dr. Durgin how long children convalescent from scarlet fever, should be excluded from the schools?

DR. DURGIN: The State law, made about two years ago, requires that the child shall be detained from the school two weeks after recovery. Of course, this matter of recovery is something very indefinite, and what the law exactly contemplates I don't know. I know that a great many children go out who are capable of carrying scarlet fever to others. When we send about for disinfecting purposes, we find children going about and others coming in to play with them while the desquamation is still going on, and some children are certified and go back to school before they are free from danger. I really feel that there is not that substantial unanimity of opinion in the profession in regard to how long the child should be kept away from others when it has scarlet fever. I am afraid a great deal of disease is spread in that way, by allowing contact too soon.

DR. MASON: In observing cases, chiefly at the City Hospital, I have noticed that the exfoliation, which is usually finished in three or four weeks, sometimes continues three months, the skin exfoliating several times. But I have never seen any

proof that this late exfoliation was capable of transmitting the disease—that is, no positive proof—and so far as my own practice goes, I have generally dismissed children at the end of four or five or six weeks, thinking that the late desquamation is probably not capable of carrying contagion. I have never known any trouble to arise from it, nor have I ever seen cases in families where I have gone after treating scarlet fever patients.

DR. DURGIN: I think that this matter of the scales being the sole or the principal cause of contagion is something that is entirely unproved. In the case of my own children it was eleven weeks before they ceased desquamating.

DR. MASON: In the report of the Glasgow Hospital I find that the average duration of time which the scarlet fever patients spend was eight weeks. I should say that this was unusually long.

I don't believe that the patients who have freely desquamated once, are capable of transmitting the disease except in the rarest instances of extreme susceptibility on the part of the person to whom it might be carried. But this is a doubtful point, as is also the question of diphtheritic complication which Dr. Jackson has referred to. We see at the Hospital many cases of pseudo-membranous inflammation, and this is considered by some as anatomically the same inflammation as diphtheria; whether it is or not, we do not know, but so far as my observation has gone clinically it is the same disease. Patients die, and I think I have seen them die from complication of the larynx, as Dr. Jackson considered in one case. I would like to ask the reader also if he made any observation about the length of time during which contagion might remain with the individual.

DR. JACKSON: I did not; they went from my care.

DR. A. N. BLODGETT said: There is one source of infection which I would like to mention which is apparent, but which is not sufficiently appreciated, I believe; and that is the danger arising from the dissemination of books from the Public Library. I have frequently seen these books in the families to which I have been called, which were the means of entertainment for the entire family, and which were tumbled about and subjected to every possible use and abuse, and returned without any degree of disinfection to the library. I have seen them taken from the library so offensive to sight and smell that they might in my opinion be capable of communicating any sort of disease to which they might have been exposed. I believe that this is a serious danger to many people, and particularly to the poorer class of people who are not able to buy books.

I believe this subject was at one time broached, and the necessity of disinfection has certainly been urged more than once, but I have never heard of any steps being taken in that direction. I see no reason why a book may not be the means of communicating disease when abused as the public library books are. They are public property, and are not considered as the books of the family would be.

Going from hand to hand and from family to family as some of them do, they seem to have every possible facility offered them for taking up the germs of scarlet fever or any other disease, and would be perhaps a very efficient means of spreading a disease which was communicable by germs.

Recent Literature.

Cyclopædia of Obstetrics and Gynecology. Vol. V: Gynecological Diagnosis; General Gynecological Therapeutics, by R. Chrobak, Vienna; Electricity in Gynecology and Obstetrics, by E. H. Grandin, M.D., New York. Vol. VII: A Handbook of General and Operative Gynecology, by Dr. A. Hegar, Freiburg, and Dr. R. Kaltenbach, Giessen; second volume. Vol. VIII: Diseases of the Ovaries, by Dr. R. Olshausen, Halle. Vol. IX: Diseases of the Female Mammary Glands, by Th. Billroth, Vienna; New Growths of the Uterus, by A. Gussierow, Berlin. Vol. XI: Sterility; Developmental Anomalies of the Uterus, by P. Müller, Berne; The Menopause, by E. Börner, Graz. Vol. XII: Diseases of the Tubes, Ligaments, Pelvic Peritoneum, and Pelvic Cellular Tissue; Extra-Uterine Pregnancy, by L. Bandl, Prague; Diseases of the External Female Genitals; Lacerations of the Perineum, by P. Zweifel, Erlangen. Edited by E. H. GRANDIN, M.D. New York: Wm. Wood & Company. 1887.

These six volumes complete the gynecological portion of the series, Vols. VI and X of which have been noticed some months ago. As will be seen from the subjects treated, they constitute a very complete treatise on this important branch of medicine. The authors are Germans, and we get mainly German ideas, but this has its advantages. While we may, perhaps, be prone to arrogate to ourselves a preëminence in this department, we cannot claim any such superiority as would warrant our neglecting what has been done by others. The Germans, especially in operative gynecology, can teach us many things, and this series is of value in that it gives to us in a cheap and readable form a great deal that is of distinct value. The authors are men of reputation and large experience, whose opinion in gynecological matters will be read with great interest. The publishers are to be congratulated on placing within the reach of the profession so much that is of value at so reasonable a price.

Hand-Book of General Therapeutics. ZIEMSEN, Vol. VII, Therapeutics of Circulatory Derangement. By PROF. M. Y. OERTEL. Translated by Edward J. Edwards, M.D., Lond., etc. New York: William Wood & Co., 1887, pp. xii, 271.

In our Report on Progress in Thoracic Disease,¹ will be found a critical notice of the above work, written before the appearance of the English translation. To that notice we beg to refer our curious readers. Here we will only add that the scope of the book is limited, dealing in great detail and ability chiefly with one class of circulatory disease, more common in Germany than in this country, and perhaps in Munich than elsewhere in Germany. The prime causative conditions are sedentary habits and the consumption of large quantities of fluid.

Diseases of the Chest. By JAMES R. LEAMING, M.D. New York: E. B. Treat. 1887, pp. 224.

This volume is composed of papers published in Medical Journals and Society Transactions at various times during the last twenty odd years.

Dr. Leaming was the first in this country, as far as we know, to insist upon the frequency of the pleural

origin of râles. Walshe had already pointed out that "moist sounds, rœchoid in properties, are producible whenever adventitious tissue within the pleura is infiltrated with serosity, and the movements of the chest continue free."² Clinical study, post-mortem examinations, and the physiological fact of the existence of residual air, which Leeming holds must prevent air currents synchronous with inspiration and expiration in the lungs themselves as distinguished from the bronchi—these considerations have gradually led the author to believe that all the fine râles as well as most of the coarse are inter-pleural, not intra-pulmonary. Thus the crepitant râle of pneumonia, the subcrepitant râle of pulmonary œdema or capillary bronchitis, arise within the pleura and are not heard unless the pleura is involved. "The signs of bronchitis of greatest diagnostic importance are not râles, but raised temperature, quickened pulse, with harsh and sibilant respiration," etc.

We cannot but think that Dr. Leeming goes too far in this direction, at the same time that we most cordially agree with him that moist râles both large and small originate in the pleura far more commonly than is ordinarily believed by the profession.

The râles of the asthmatic paroxysm are certainly not inter-pleural, nor are those in bronchitis which, as Fraser has so well shown, disappear immediately after a dose of a nitrite.

Dr. Leeming is a believer in the sedative action of a large dose of calomel—20 to 60 grains, and having the courage of his convictions, took his own remedy when attacked by pneumonia of the left lower lobe, (p. 129).

We have read Dr. Leeming's book carefully and with much interest and profit. It would be well if all writers were so honest and so thoughtful. It is a matter for regret that more care was not exercised in some details of the writing or the proof-reading. We find in different places "bronchi," "bronche," "bronchiæ," "bronchia," "brouchii;" also "adema," "atheramatus"—but we will not multiply examples. What an "esoric" case is we are at a loss to make out.

In a foot-note, page 26, it is stated that the presence of muscular fibre in the alveolar walls has been established. We cannot help thinking that Dr. Leeming is here in error. The paper and print are in no respect models.

F. C. S.

A Manual of the Physical Diagnosis of Thoracic Diseases. By E. DARWIN HUDSON, JR., A.M., M.D., etc. New York: William Wood & Co., 1887, pp. 146.

This is in fact though not in name the second edition of the manual published by the author in 1885 and noticed somewhat critically in these columns.² It has been much enlarged, modified in some respects improved, and profusely illustrated with original and borrowed cuts. Some of the former are pretty archaic; we fail to see the utility of inserting cuts of such instruments as stethoscopes, percussion hammers, and plessimeters.

We felt more strongly even than we stated that the first edition was not worthy of the author, and the second edition is, in our opinion, far inferior to the manual of Flint and by no means the equal of that by Loomis.

¹ Journal, 1886, I, p. 265.

² Diseases of the Lungs, 3d English Edition, 1860, p. 136.

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THE MORTALITY IN NEW YORK AND LONDON
COMPARED.

By direction of the Board of Health, Dr. R. S. Tracey, Registrar of Records of Vital Statistics, has prepared an elaborate report on the principal causes of mortality in the city of New York, particularly as compared with those in London. He commences by saying: "It is often said that New York ought to be the healthiest city in the world. As a matter of fact, London is, the annual death-rate of London being about 20 in 1,000, and that of New York 26 in 1,000."

The tables presented show the result of an attempt to find out whether the excess of mortality in New York is due to any particular diseases, and, if so, what they are, and whether the mortality from such diseases has diminished since the organization of the Health Department. The first table shows an excess of deaths in New York over London in certain diseases, in 1886, as follows: Small-pox, 65; scarlatina, 380; diphtheria, 4,129; croup, 2,261; typhus fever, 27; typhoid fever, 319; cerebro-spinal meningitis, 639; puerperal diseases, 5,942; malarial fevers, 1,109; diarrhoeal diseases, 5,942; erysipelas, 150; alcoholism, 250; phthisis, 7,383; pneumonia, 5,928; tabes mesenterica, 322; meningitis, 1,058; tubercular meningitis, 943; sunstroke, 121 (none in London); cirrhosis of the liver and hepatitis, 405; Bright's nephritis, 4,955; cyanosis and atelectasis pulmonum, 594; suicide, 246; premature births, 195; drowning, 241; violence, 1,362. The diseases in which there was an excess of deaths in London over New York were as follows: Measles, 160; whooping-cough, 1,214; rheumatism and gout, 146; cancer 439; bronchitis, 6,308; disease of the heart, 236; aneurism, 6; convulsions (?) 886; apoplexy, 19; diseases of the brain and nervous system, 446. For the purpose of comparison in the tables, the number of deaths in New York was increased in the same proportion that the population of London bears to that of New York; the population of London being given as 4,149,533, and that of New York as 1,439,037.

The next table gives the figures for the same diseases in 1880, the last census year, and in reference to the two, Dr. Tracey says: "It will be noticed that in both of these tables the diseases or groups of diseases in which there is a very marked excess of mortality in New York are the following: Diphtheria and croup (taken together), diarrhoeal diseases, phthisis and Bright's disease with nephritis (acute and chronic Bright's)." . . . Later he goes on to say: "As these two years might be exceptional, a table was prepared which shows the average annual number of deaths in each city for twenty years, namely, from 1867 to 1886, inclusive. . . . By that table it will be seen that the same rule holds good, namely, that the excess of mortality in New York is mainly due to diphtheria and croup, diarrhoeal diseases, phthisis, and diseases of the kidney. In all these tables there appears, besides the great excess of deaths from the above-named diseases, a great excess from bronchitis in London, and from pneumonia in New York. They nearly balance each other, however, and the difference is probably due to the classification of broncho-pneumonia as bronchitis in London, while it is classified as pneumonia in New York."

A number of other tables having been given to test the truth of the foregoing statements, he finds that when the four causes referred to are eliminated from the mortality list of both cities, the death-rate from almost all other causes is almost the same. He then continues as follows: "These tables fairly demonstrate that the excess of mortality in New York, as compared with London, is due to diphtheria and croup, diarrhoeal diseases, phthisis, and kidney diseases, and the increase or decrease of deaths from these causes from year to year will indicate in some degree improvement or deterioration in the sanitary condition of the city." Next follows a table showing the average annual number of deaths from the diseases under consideration from 1868 to 1877, and from 1878 to 1887, inclusive, each period including a usually fatal year; namely, 1872 and 1881. "It will be noticed," Dr. Tracey says, "that the death-rate from diarrhoeal diseases and phthisis (diseases peculiarly sensitive to sanitary surroundings) has diminished appreciably, while that from diphtheria and croup and from kidney diseases has increased."

The conclusions arrived at are as follows: (1) That the excess of mortality in New York, as compared with that of London, is due chiefly to diphtheria and croup, diarrhoeal diseases, phthisis, and kidney disease. (2) That if the death-rate from these diseases were the same in New York and London, the mortality from all other causes remaining as at present in both cities, the general death-rate in the two cities would be almost precisely the same. (3) That the overcrowding in New York (16.37 persons to a dwelling in 1880, as compared with 7.8 in London) and the trying climatic conditions render it very improbable that the death-rate of the city (New York) can ever be reduced as low as that of London.

STERNBERG ON YELLOW FEVER INOCULATION.

"THE question of etiology of yellow fever still remains unsettled; the claims of Freire of Brazil and Carmona of Mexico, with regard to the discovery of the yellow fever germ are without foundation; their statements and statistics of protective inoculation for this disease have no scientific value." These are the conclusions that Dr. George M. Sternberg has reached after personal investigation of the results of protective inoculation in yellow fever. Being commissioned by the President of the United States under a special act of Congress, passed about a year ago, he proceeded to Rio de Janeiro and Vera Cruz and his results will be detailed in his report to the United States Government. As the official report may be considerably delayed, Dr. Sternberg being about to go to Havana for the purpose of completing his investigations, he consented to present on the 21st inst. to the College of Physicians, of Philadelphia, the results thus far attained.

The technique of both Freire and Carmona was found to be very defective, both microscopical and bacteriological, proper staining and cultures not having been performed, nor were proper precautions taken to protect the specimens of blood, etc., from contamination with ordinary bacterial forms. In fact, the organism that Freire considers pathogenic and specific, Sternberg declares to be an ordinary form, probably *staphylococcus albus*. The organism found by Lacerda, confirmed by Babes, was a *diplococcus* Sternberg found in the kidneys and other organs in two out of nine cases, or in just about the proportion that the former observer had reported; as this organism is not constant, and was absent in some cases exhibiting otherwise well-marked characteristics of yellow fever, its causative action cannot as yet be accepted. Dr. Sternberg found, in one instance, a peculiar short bacillus in the glomeruli of the kidney, but as he had not succeeded in meeting with it again, he hesitated before assigning to it any special rôle in causing the disease.

The statistics of yellow fever inoculation upon examination were also found not to bear criticism and in fact, were generally discredited by the other physicians, members of the Academy of Medicine in Rio.

The question of the etiology of yellow fever therefore remains where it was left after the study of Sternberg and Guiteras who were sent to Havana to investigate this interesting question by the National Board of Health in 1879.

It is hoped that the opportunities of pathological investigation which will be afforded Dr. Sternberg in Havana may enable him to shed more light upon the nature of the disease than he has yet done. By his recent investigations he has won the thanks of his fellow members of the profession, has rendered great service to his country and fully justified the selection of the President of a commissioner to investigate the extravagant claims of Carmona and Freire.

REGULATING THE PURCHASE AND SALE OF POISONS.

THE Governor of Massachusetts by his approval, upon the 10th inst., of the Act passed by the present Legislature to regulate the sale and purchase of poisons, has secured for the public an important safeguard in regard to offences against the public health. Under previous legislation, only the sale of four poisons, arsenic, strychnine, corrosive sublimate, and prussic acid, had been in any degree guarded. Now, at least, thirty more preparations have been added to the former meagre list, and the sale of all those likely to be used with either criminal intent or culpable carelessness are surrounded with proper restrictions. These are such as will impose no undue restriction upon trade, but will tend largely to prevent accidents, and, in case of wrong-doing, to greatly aid in the discovery of the criminal.

The statute, however, furnishes another curious example of the frequent imperfection of such efforts, for with all the detailed requirements of registration of the name and address of the buyer, and the labelling of the sample in red with that of the seller, with the words poison and a recognized antidote, nothing at all is said in regard to the name of the poison itself being given thereon. This, of course, is the most important item of all these, which should be given upon the label, and its omission must, of course, have been an oversight.

The State Pharmaceutical Association, it is understood, has already taken action to conform to the requirements of the new law, and has commissioned one of its most able and active members to cause printed sheets of labels to be prepared, which will, in all particulars fulfil the new requirements.

MEDICAL NOTES.

— Dr. Freund's joke at the banquet given by Professor Kussmaul on his leaving Strasburg for Heidelberg has attracted considerable attention, perhaps from the fact that it has generally had to be explained to those whose classic lore had grown a little rusty. The speaker said that the guest of the evening was evidently no other than Oribasius, the body physician to the Emperor Julian, the Apostate, in the fourth century. Kussmaul is the exact philological equivalent for Oribasius. Whether the name in either case represented any osculatory proclivities on the part of the owner is not stated.

— "A case is reported in foreign journals," says the *Pharmaceutical Era*, "of explosion of a bottle of amyl nitrite which had remained a long time undisturbed in the store. It is not the first time an accident of this character has been reported, although, as a rule, explosions have followed attempts to remove a stopper which has become fixed in its seat. The real cause of these explosions does not appear, however, to have been generally recognized. They are due, no doubt, to accumulations of oxygen gas or possibly of

nitric oxide formed by spontaneous decomposition of the nitrite, and the ordinary precaution of storing the article in a cool, dark place is not sufficient, since the decomposition seems to take place even in the dark and at low temperatures. The fluid should, therefore, be kept in small bottles, and these should be occasionally opened, to permit the escape of accumulated gas.

— We learn from a foreign contemporary that in Paris thousands of women are cutting short their careers by the use of morphine. Morphine discs are dissolved in a small bottle of water, and this is placed in a case which includes a tiny syringe. The whole apparatus is of a miniature description, and can be conveniently carried inside the smallest muff. The vice has become so fashionable that women actually fill their syringes before starting for the theatre, and thus have the means at their disposal, any moment, of injecting themselves with the drug while lounging in the fauteuils or in their boxes.

— M. M. Caul and Y. Cowley have succeeded in determining the influence exercised by the process of roasting upon the proportion of caffeine contained in different kinds of coffee. Dry coffee contains from 1.1 to 1.18% of caffeine. If the roasting is effected at a moderate heat the loss of caffeine is trifling, but if it be, on the contrary, carried to a high temperature, the quantity of caffeine does not amount to more than 0.36%.

— A citizen of Stratford, in Avon, England, has recovered \$5,000 from the corporation of the town as damages for a nuisance caused by the defendants' sewage farm which is near his dwelling. The corporation admitted that a nuisance had existed. An injunction was granted by the court, to be suspended for a year, to allow the defendant corporation to put some remedial process in operation.

— A grim jest-book might be compiled from the prescriptions filed away in the shops of druggists, many of them reposing in austere loneliness under a disguise of execrable hand-writing. The following has been rescued from an obscure pigeon-hole by a Chicago paper, and is a relic of the pioneer doctors of fifty years ago: "A Recipe for Arnilda Purdy's Lung Complaint.—Take of the bark of wild Cherry, Sasaparilla, Sycamore, yellow poplar, Dogwood and black oak, a Double handful of each; take of Sasaparilla Root and Spignard one handful of each; to which add three Gallons of water. Boil it Down to one; strain it and add one quart of Good french Brandy and one quart of Honey, of which take about one Gill three times a day. This was tried by Jonathan Douglas when he Could not Set up and has Cured Several others. N. B.—If She Canot take agreeable to Directions Take what She Can."

— Advice from Paris under date of April 6th, report that at its last sitting, the French Academy of Medicine concluded its labors on the "Public Means for Preventing the Spread of Syphilis." That body unanimously approved that portion of the report of its

Commission calling for the total abolition of disciplinary measures against the infected, the adoption of the best means of stamping out clandestine prostitution by warning young soldiers against its attendant dangers, and by combining the efforts of the civil authorities with those of the Army medical officers, with a view to the suppression of such dangers both in towns and in proximity to camps. Finally, the Academy adopted the following resolution in respect to the Navy: "Crews should be subjected to sanitary inspection prior to the ship putting into port; men found to be infected on inspection after a voyage of sufficient length, should not be allowed to land; suspected houses, and persons leading a debauched life in naval ports or ports of call, to be kept under medical surveillance; and the municipal authorities of such ports should be required to keep all persons suffering from disease in hospitals until thoroughly cured of all infectious symptoms." The discussion closed, M. Herard, President, congratulated the Academy for having initiated the agitation on this important question; agitation which is likely to result beneficially for the public health, and which has aroused the attention of the public powers, and thereby paved the way for such reforms as may be deemed necessary.

— The same protests that have been made against water-gas in Boston and elsewhere are now needed, and, we are glad to notice, are being made in Philadelphia. On the recommendation of a committee consisting of Drs. H. C. Wood, T. G. Wormley, J. W. Holland, H. Jayne, I. Norris, Jr., and H. Leffmann, the College of Physicians of Philadelphia adopted a resolution opposing the use of any illuminating gas containing more than ten per cent. of carbon monoxide. The basis of the objection is the danger of poisoning from this strongly narcotic gas. The resolution was adopted in view of the proposal to supply the city with a considerable quantity of so-called water-gas, made by the action of steam on highly-heated coal. Carbon monoxide forms about forty-five per cent. of this gas. The many fatalities which have resulted from this insidious agent cannot be too strongly or too often referred to, in order to protect the public against this peril.

— Dr. Wilks, who, nearly twenty years ago, directed attention to the fact that a transverse furrow appeared on the nails of the hand after a serious illness, again brought the subject before the London Pathological Society at its meeting on March 20th, and related a remarkable case, in which the furrow was produced in a gentleman in robust health by three days' seasickness. Mr. W. W. Wagstaff addressed a note to Dr. Wilks, containing the following interesting observations: He pointed out that the furrow was at first, when near the lunula, shallow and difficult to identify, but that when it reached the middle of the nail it was distinct, and often, especially in nails with longitudinal ridges, dotted. The furrow reached the middle of the nail about three months after an illness, but moved onwards towards the free end at different rates

in various cases, the rate increasing as the free edge was approached. As a rule, all the finger-nails were affected, but in some only the right hand showed the mark, and in others only special fingers, the ring-finger most often escaping entirely. Mr. Wagstaff also stated that the furrows could be produced by a local cause, and mentioned a case in which the left hand was injured by a rocket stick, which fractured the metacarpal bone of the index finger, and the arm and hand remained in splints for a month; the left hand only showed the transverse furrows, but on all the fingers.

—The Paris correspondent of the *British Medical Journal* gives what purports to be a sober account of a case of hysteria recently under the care of M. Peter at the Hôpital Necker, presenting the phenomena of sensibility of the integuments to gold, and susceptibility to the influence of medicinal substances at a distance. The patient was a man, who applied on account of contracture of the entire right side, principally in the leg. He is a well-known hysterical subject, and it was on him that the theory of telepathic medicine, broached not long ago by two surgeons of Rochefort, was chiefly based. It was noticed that his skin was extremely sensitive to the contact of certain metals; but Dr. Peter, who is very cautious in accepting such facts, seeing that the patient was an inveterate liar, took every precaution to ensure absolute accuracy in the experiments he undertook. Dr. Peter, as if by accident, touched the back of the man's hand with a gold ring he was wearing. The patient complained of a sensation of pain, and the next morning there was a small blister, as of a burn of the second degree, on the spot touched by the ring. The same day the head nurse, while helping the patient, accidentally touched one of his fingers with her gold chain, and the same result was produced. To prove that there was no trickery, and that the man had not purposely burnt himself with a match, Dr. Peter's assistant, Dr. Caron, percussed the man's back, particularly where his hand could not reach, even with a lighted match, and wherever Dr. Caron's gold ring had touched the skin there was a blister, as in the first case. Other metals similarly applied did not give the same result. Following up these experiments with regard to the influence of medicaments at a distance, the following curious effect was observed: Without the patient being aware of it, a small tube wrapped up in paper, the contents of which were unknown to Dr. Peter himself and to his assistants, was held within about four inches of the back of the patient's neck. In less than ten minutes his face became covered with profuse perspiration, he was seized with nausea, and soon vomited some liquid. On tearing off the paper cover from the tube, it was seen to contain ipécacuanha. Similar experiments with alcohol and opium gave no results whatever.

NEW ENGLAND.

—A sad case is reported in the daily press as having occurred at Medford, Mass., last week. A woman

was confined under the care of her mother, a Mrs. Conner, a practitioner of Christian science, and the patient died of hæmorrhage, while the child perished simply from neglect. The physician called, refused to sign the certificate, and the case came before the medical examiner, who found the facts as stated. The Christian scientist has been arrested for manslaughter.

Miscellany.

PERSISTENT OEDEMA.

DR. JAMIESON in the *Edinburgh Medical Journal*, March, 1888, refers to two cases simulating myxœdema, reported by Dr. Lassar, at the session of the *Berliner medicinische Gesellschaft*, March 16, 1887. The swollen face, the thickened eyelids and lips, and the puffy enlargement extending from the throat to the ears, are at the first glance the most striking of the features of myxœdema, yet all these were simulated in these two cases. One of these was a young tailor, aged seventeen. Her face was pasty, much swollen, glossy, the opening of the eyelids narrowed, the skin hard. Traced back, there was a history of frequent epistaxis, with nasal polypi, and chronic rhinitis. The latter had recurred frequently, and still persisted. For four years she had suffered from repeated attacks of swelling and redness of the face. At first the swelling entirely subsided, but of late the œdematous condition remained constant, and notwithstanding regular treatment with the constant current, in no degree improved. The spurious erysipelas in this instance was distinguished from the true by the absence of pyrexia; while the rapidity with which the attacks succeeded one another interfered with the activity of the absorptive apparatus, and led to a persistent œdema. The second case was that of a man who suffered from an itchy eruption starting from the angle of the mouth on the right side, attended with acute inflammation and severe swelling, and lasting from eight to ten days. The eruptions recurred in about four or six weeks. These left always behind a degree of thickening of tissue, which gradually became augmented, and in the end produced a very grotesque disfigurement. The countenance became deformed, round like a cannon ball, and occasioned, apart from disfigurement, unendurable annoyance. Under fine scarifications, repeated during more than thirty sittings, and dressing with Lassar's 2 per cent. salicylic vaseline paste, the swelling was materially lessened, as well as the frequency and severity of the attacks.

THE COMBINATION OF SYPHILIS WITH CARCINOMA.

At a last meeting of the Vienna "Medizinisches Doctoren Collegium" according to a Vienna correspondent of the *Medical Press and Circular*, Prof. Lang showed a case in which syphilis was combined with carcinoma. The first respective cases had been communicated by Hutchinson and Langenbeck. Prof. Lang had hitherto had the opportunity of observing four such cases. The carcinoma which developed later on, on the syphilitic soil was each time proved

by histological examination. In the first case which he had observed in 1883, there were besides relapses of iritis and other symptoms characteristic of syphilis; also gummatous ulcerations of the face. Under anti-syphilitic treatment all the ulcerations disappeared, except one which became transformed into a caneroid of the skin. The second case was that of a man, aged forty-six, who had suffered from various syphilitic ulcerations on different parts of the face and body. After anti-syphilitic treatment one ulcer, viz., that under the tongue, remained behind, and became also transformed into carcinoma. In the third case a syphilitic infiltration of the lower lip relapsed at the end of a year, and assumed a carcinomatous character. The fourth case was now brought forward before the Society. The patient presents several scars on the trunk and the face, as well as perforation of the palate and loss of substance of the upper lip. She had been admitted into the hospital during the month of January. Most of the ulcerations were at that time covered with a white scab, but the histological examination of this substance did not reveal any sign of importance for diagnosis. Since the 19th of February current, a small ulceration, which was very indolent, became visible over the hard palate. The part which was excised from it for histological examination was found by Prof. Weichselbaum, of Vienna to be epithelioma. Prof. Lang remarked that these developments of carcinoma on a syphilitic base had not hitherto attracted sufficient attention.

PSYCHIC DISTURBANCES IN RUSSIA.

IGNORANCE, superstition and oppression are soils in which hysterical epidemics are liable to flourish with frightful vigor. A native writer, in an article upon "Mystical Pessimism in Russia," in the *Contemporary Review*, says that "Pessimism is a characteristic feature of all those epochs of history in which the mass of humankind suffering is at a maximum, and moral aspirations are entirely out of harmony with social conditions. Involved in an unequal conflict with their surroundings, men come to regard life as a terrible burden, and seek refuge in suicide, or in strange, mystical and extravagant theories of society." We find in *Science*, April 13, an extended notice of this paper, which contains much of interest to the student of mental science.

About twenty years ago a peasant in the province of Perm, after spending much time in the reading of religious books, concluded that the end of the world was at hand, and converted his neighbors to his belief. Voluntary suicide was the only release from the misery that surrounded them. A number of men, women and children, including the members of his own family, retired to a forest, where the men dug catacombs, while the women made shrouds. This lasted three days. Then all the disciples, dressed in the garments of death, three times renounced Satan. The leader gave the command, "Take no food and no drink for twelve days, and you shall enter the kingdom of heaven." Then the days of suffering began. A few, more human than the rest, appealed in behalf of the children, whom they saw writhing in agony, and sucking blades of grass or eating sand; but the leader was immovable. At length two of the fanatics could endure it no longer, and fled. This frightened

the band, and the leader announced that the hour of death had come. They massacred the children, and decided to continue the fast. At this stage the police had sought them out, but their frenzy was kindled to the highest pitch. With the prospect of capture before them, a horrible carnage ensued. They killed the women with hatchets, and the efforts of the police only succeeded in saving the leader and three of his associates.

Another instance is that of the monk Falaré, who, not many years ago, went along the banks of the Volga preaching suicide with great success. One night eighty-four persons met in a cavern that had been filled with straw. They began to fast and pray; but one woman fled and informed the police. As their pursuers appeared, they set fire to the straw and threw themselves upon it, killing themselves with hatchets. Many were saved, however, and one of the condemned escaped from prison and continued to propagate the doctrine. More than sixty persons, including whole families, became his disciples. A day was fixed upon which one peasant went to the houses of the others killing men, women and children, all calmly submitting to their fate. The leader then had himself killed. Thirty-five persons, in all, thus perished. These *en masse* massacres are becoming more rare, but all kinds of crimes are still perpetrated as the result of a religious fanaticism. In 1870 a woman threw her child into the fire in obedience to a divine command, and showed no signs of remorse when called to trial. A dozen years ago a man crucified himself, actually nailing his feet and one hand to a cross, and then impaling the other on a nail.

OBITUARY — CORNELIUS REA AGNEW, M.D.

DR. C. R. AGNEW, the subject of this sketch died in New York April 14th, from general peritonitis, the result of peri-typhilitic inflammation, after an illness of but little more than a week's duration. The disease pursued its course to a fatal termination notwithstanding early diagnosis and early operative interference on the part of Drs. Delafield and Sands, who were in attendance.

Dr. Agnew was born in New York on Aug. 8, 1830, and was of Huguenot extraction. His parental ancestors took refuge in North Ireland after the edict of Nantes, and joined the Scotch Presbyterian Church. John Agnew, his grandfather, came to this country in 1786 and first settled in Philadelphia, but soon moved to New York.

At the age of fifteen Dr. Agnew entered Columbia College, from which he was graduated in 1849. In 1852 he received his diploma from the College of Physicians and Surgeons, and soon after was appointed House Surgeon to the New York Hospital, and then its Curator. Then he accepted the position of Surgeon to the Eye and Ear Infirmary, but made it a condition that he should first go to Europe to complete his studies. He accordingly went to Dublin, where he became a resident pupil of the Lying-in Asylum, and attended the clinics given by William Wilde at St. Mark's Eye and Ear Hospital. Then he went to London, following the clinical lectures of William Ferguson. From London Dr. Agnew went to Paris, where he studied under Velpéau, Ricord, Sichel and Desmarres, and Hardy.

He returned to New York in 1855, and began practice. The next year he married Mary, daughter of Lora Nash, a merchant of New York. In 1858, Gov. E. D. Morgan appointed him Surgeon-General of the State of New York, and at the outbreak of the war the Governor appointed him Director of the State Volunteer Hospital, New York. When the United States Sanitary Commission was organized Dr. Agnew and Dr. Elisha

Harris were unanimously elected to the Commission. He was regarded as an authority in the United States Sanitary Commission, and although he had a large private practice he devoted all the rest of his time, at great personal sacrifice, to this service. The life-saving work of the Commission at Antietam, the battles of the Wilderness, and the relief to the wounded and sick soldiers who returned from Southern prisons was made so successful principally by the carefully arranged plans of Dr. Agnew executed under his own superintendence.

Dr. Agnew was one of four gentlemen who founded the New York League Club, which gave such material assistance to the government during the war, and he became one of its vice-presidents.

In 1866, at the request of the Faculty of the College of Physicians and Surgeons, he established an ophthalmic clinic there, and in 1869 he was elected Clinical Professor of Diseases of the Eye and Ear. The following year he organized the Brooklyn Eye and Ear Hospital, and also the Manhattan Eye and Ear Hospital, the latter in New York. He had been appointed in 1865 one of the managers of the New York State Hospital for the Insane at Poughkeepsie, and was twice reappointed to that office.

As early as 1859 Dr. Agnew was elected a trustee of the New York public Schools, and was made president of the board. Several years later he was selected a trustee to organize a School of Mines in Columbia College, and in 1874 he became a trustee of that college. In 1872 he was chosen President of the Medical Society of the State of New York. He was Secretary of the first New York Sanitary Reform Association, and one of the committee which made the first draft of the health laws of the city. He belonged to a large number of medical and scientific societies at home and abroad. He was a fluent lecturer, and was widely known as an authority on ophthalmology. He made valuable contributions to medical literature, among which were "A Contribution to the Surgery of Divergent Squint," "Trephining the Cornea to Remove a Foreign Body," and "Cantoplasty as a Remedy in Certain Diseases of the Eye."

Dr. Agnew's death causes a loss to the medical profession and to society which will not easily be made good. His interests covered a variety of subjects, in which his labors were always well-directed and almost always fruitful. His life was terminated prematurely at the early age of fifty-eight years, but his activity had been such as to lead many to suppose that he must have been much older. He leaves a widow, one son and seven daughters.

Correspondence.

FIVE LIVING GENERATIONS.

BROOKLINE, April 23, 1888.

MR. EDITOR,—Dr. Root, of Georgetown, in the last number of the JOURNAL mentions a family in which there are, or were (for some may have died since the date of his letter) six living generations. After handing his name down to posterity by recording this extraordinary case he challenges your readers to produce even five generations.

I am happy to say that I, as one of that large and interesting class known as "constant readers" can produce an instance of five living generations, the fourth and fifth living in this town within a short distance of my house, and the three other generations all living in Natick. Their ages are as follows:

Great great grandmother	81 years.
Great grandmother	63 "
Grandmother	42 "
Mother	26 "
Child	5 months.

The great great grandmother was married at 17; the great grandmother at 19; the grandmother at 17, and the mother at 19.

Yours truly,

WALTER CHANNING, M.D.

OPERATING FOR ADENOID GROWTHS.

CLARKSVILLE, TENN., 18th April, 1888.

MR. EDITOR,—Having read with great interest the articles of Drs. Hooper and Blake, on "Adenoid Growths, Their Diagnosis and Treatment"; also Dr. Farlow's letter announcing the fact of the "impossibility of blowing the nose" when this condition exists, I desire to call their attention, as well as that of others interested in the subject, to Dr. J. C. Warren's method of operating for Cleft Palate, published in the JOURNAL several years since. The patient, after being anaesthetized is moved upwards on table until the head hangs. The surgeon on a stool drawn close operates, allowing all hemorrhage to escape through nostrils.

It occurs to me this would entirely obviate the "danger of blood being sucked into the larynx," and also of "clot becoming wedged in the glottis," unless the growths so fill the nasal cavity as to prevent its escape.

Respectfully yours,

T. D. JOHNSON, M.D.

DIABETIC FOODS CONTAINING STARCH.

BOSTON, April 24, 1888.

MR. EDITOR,—Mr. W. L. Johnson's letter in the JOURNAL of April 19th, commenting on my article on Diabetic Foods misquotes and misleads. Section 7 is quoted: "Dr. Johnson's Educators. These biscuits are recommended very strongly by the seller who assured me that they were absolutely free from starch," and then Mr. Johnson adds "For light on this point let your readers consult my Educator and other circulars." I have consulted all of the latter including even those setting forth the preposterous claims of the "Olive Branch Radical Cure for all Female Diseases" and of "Garfield Tea, or Liver and Kidney Cure," but find no further light. Perhaps I can myself furnish some. When I made my purchase of diabetic biscuits Mr. Johnson was present, and himself informed me that the biscuits were absolutely free from even traces of starch, that the process owned by his company was the only one for the proper elimination of the starch, and that he guaranteed them in every way. I found that they contained 71.43 per cent. of starch. I made a second visit to ask if these biscuits had any particular trade name, and was told they, like all the other biscuits of this make, might be called for as "Educators," or "Diabetic Educators." I made to-day another call and incidentally bought another pound of these same biscuits, which were again guaranteed as free from starch. It is perhaps unnecessary to add that I was not known as the writer of the article. The gluten flour and special diabetic food from the same establishment yielded respectively 62.91 per cent. and 54.88 per cent. of starch (warranted absolutely free), and not 80 per cent. and 23 per cent. as Mr. Johnson has misquoted. The latter figures are for the bread made from these flours. The figures for the gluten (Educator) biscuits are carefully left unquoted.

"Notwithstanding this I am accused with dishonesty and fraud, and he commends a Graham wafer of another's make with its 51.15 per cent. of starch as a superior food to mine." Mr. Johnson knows that the latter part of this is untrue. To quote my own words, "Compared with the diabetic biscuits above mentioned, the Graham wafer may be almost regarded as a superior form of diabetic food. It contains a smaller percentage of starch than the Educator with its 71.43 per cent.," etc., etc. Mr. Johnson continues, "The fact that absolute gluten has never been produced except in the laboratory, is quite significant in this connection," and I will add that his guarantee that his biscuits are made of absolute gluten and water only, is quite significant in another. I did not, in my article, accuse Mr. Johnson personally "with dishonesty and fraud," and at the present time such an accusation would be quite superfluous, since he stands self-accused.

Yours truly,

CHARLES HARRINGTON, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING APRIL 14, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Typhoid Fever.	Diph. & Croup.	Scarlet Fever.
New York	1,526,081	787	304	15.63	19.69	.51	5.46	4.07
Philadelphia	1,016,738	395	126	9.11	11.39	1.26	2.78	1.52
Brooklyn	753,432	—	—	—	—	—	—	—
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,153	144	56	13.89	13.19	.59	3.47	.69
Boston	407,024	222	70	15.51	18.02	2.25	5.41	.45
New Orleans	243,000	—	—	—	—	—	—	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	210,000	88	32	14.77	14.77	2.27	1.14	1.14
Pittsburgh	210,000	69	32	17.39	36.23	2.89	4.35	2.89
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	125,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	14	5	14.29	21.43	7.14	—	7.14
Charleston	60,145	—	—	—	—	—	—	—
Portland	40,000	16	3	6.25	37.50	—	6.25	—
Worcester	76,328	27	10	7.14	18.52	3.70	—	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	25	7	12.00	28.00	—	12.00	—
Fall River	61,203	34	9	14.71	14.71	—	2.94	5.88
Lynn	51,467	13	—	15.38	7.69	—	15.38	—
Lawrence	40,175	15	4	6.67	6.67	6.67	—	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36,298	25	9	12.00	28.00	—	8.00	4.00
Somerville	33,307	10	4	20.00	40.00	—	20.00	—
Holyoke	28,887	6	2	16.67	50.00	—	16.67	—
Salem	28,781	10	3	10.00	—	—	10.00	—
Chelsea	27,552	12	4	8.33	—	—	—	8.33
Taunton	24,979	11	2	9.09	—	—	9.09	—
Haverhill	24,796	—	—	—	—	—	—	—
Gloucester	24,784	6	2	—	—	—	—	—
Brookton	23,187	10	3	10.00	10.00	—	—	—
Newton	21,495	5	2	20.00	20.00	—	—	—
Malden	18,942	8	2	—	12.50	—	—	—
Fitchburg	17,534	4	4	50.00	—	—	25.00	—
Waltham	16,651	6	—	—	—	—	—	—
Newburyport	13,839	3	—	—	—	—	—	—
Northampton	13,419	2	—	—	50.00	—	—	—

Deaths reported 1,967: under five years of age 695; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 257, acute lung diseases 343, consumption 300, diphtheria and croup 89, scarlet fever 48, diarrhoeal diseases 29, typhoid fever 22, measles 17, whooping-cough 15, cerebro-spinal meningitis 12, erysipelas nine, puerperal fever eight, malarial fever seven, small-pox five, remittent fever one. From diarrhoeal diseases New York 16, Philadelphia six, Boston three, Washington, Pittsburgh, Worcester and Fall River one each. From measles, Baltimore nine, New York five, Boston, Washington and Gloucester one each. From whooping-cough New York and Boston four each, Philadelphia three, Washington two, Fitchburg and Baltimore one each. From cerebro-spinal meningitis, New York six, Philadelphia two, Boston, Washington, Fall River and Newton one each. From puerperal fever, Washington four, Pittsburgh three, Boston one. Malarial fever New York seven. Remittent fever, Baltimore one. From small-pox New York four, Philadelphia one.

In the 28 greater towns of England and Wales with an estimated population of 9,399,273, for the week ending March 31st, the death-rate was 21.5. Deaths reported 3,881: infants under one year of age 913; acute diseases of the respiratory organs (London) 460, whooping-cough 156, scarlet fever 63, measles 42, fevers 35, diarrhoea 31, diphtheria 24, small-pox (Sheffield) 19, Blackburn three, Nottingham two, Bristol, Manchester and Hull one each) 27.

The death-rates ranged from 15.1 in Birkenhead to 33.3 in Blackburn: Birmingham 19.5; Bolton 31.3; Bradford 21.3; Leeds 22.3; Leicester 21.3; Liverpool 22.4; London 20.3; Manchester 26.4; Newcastle-on-Tyne 25.6; Norwich 22.3; Nottingham 21.7; Portsmouth 22.1; Sheffield 21.2.

In Edinburgh 22.8; Glasgow 27.5; Dublin 31.2.

RESIGNATION AND APPOINTMENT.

Dr. William A. Gorton, superintendent of the State Lunatic Asylum, Danvers, Mass., has resigned his position, having been appointed superintendent of the Butler Josiah Hospital, of Providence, R. I., where he succeeds the late Dr. William B. Goldsmith, who was himself called thither from Danvers.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 14, 1888, TO APRIL 20, 1888.

STERNBERG, GEO. M., major and surgeon. Having been instructed by the President to proceed to the Island of Cuba, for the purpose of continuing his investigations of the methods of preventing the spread of epidemic diseases, will in connection with his present duties, report to the Secretary of the Treasury for further instructions. S. O. 89, A. G. O., April 18, 1888.

EWEN, CLARENCE, captain and assistant surgeon. Granted leave of absence for six months, with permission to go beyond sea. S. O. 85, A. G. O., April 13, 1888.

ARTHUR, WM. H., captain and assistant surgeon. Ordered from Fort Niagara, N. Y., to Fort Bowie, Ariz., to take effect on the expiration of his present leave of absence.

BLACK, CHAS. S., first lieutenant and assistant surgeon. Ordered from Fort Davis, Tex., to Fort Sidney, Neb. S. O. 86, A. G. O., April 14, 1888.

CROSBY, WM. D., first lieutenant and assistant surgeon. Ordered for duty at Jefferson Barracks, Mo., after being relieved by Assistant Surgeon Wm. H. Arthur, and upon the expiration of the leave of absence granted him in S. O. 60, A. G. O., March 14, 1888. S. O. 86, A. G. O., April 14, 1888.

APPOINTMENT.

RAFFERTY, OGDEN, to be assistant surgeon with rank of first lieutenant, March 26, 1888.

PROMOTION.

GIARD, JOSEPH B., captain and assistant surgeon. To be surgeon with the rank of major, March 22, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING APRIL 21, 1888.

RHOADES, A. C., medical inspector. Detached from special duty, New York, and waiting orders.

HENNEBERGER, L. G., passed assistant surgeon. Detached from Naval Hospital, New York, and to special duty attending officers and families, New York.

The meteorological record for the week ending April 14, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending		Barom-eter.	Thermometer.		Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.			
Saturday, Apr. 14, 1888.		Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Sunday, ... 8		30.28	28.0	35.0	21.0	59.0	31.0	58.0	49.0	W.	W.	N.	12	20	12	C.	C.	C.		
Monday, ... 9		30.44	36.0	44.0	24.0	60.0	22.0	30.0	37.0	W.	N.W.	N.W.	14	10	3	C.	C.	C.		
Tuesday, ... 10		30.35	35.0	41.0	30.0	55.0	46.0	95.0	65.0	N.	E.	E.	1	16	18	C.	O.	N.	6	.11
Wednes., ... 11		29.97	49.0	45.0	33.0	100.0	81.0	80.0	87.0	E.	N.W.	N.W.	18	14	7	R.	O.	O.	12	.29
Thursday, ... 12		30.03	43.0	57.0	35.0	59.0	56.0	47.0	54.0	W.	W.	W.	12	15	14	C.	O.	C.	1	.01
Friday, ... 13		30.11	38.0	45.0	29.0	49.0	39.0	31.0	41.0	W.	N.W.	N.W.	21	18	4	F.	C.	C.	0	0
Saturday, ... 14		29.86	38.0	47.0	34.0	42.0	100.0	92.0	78.0	W.	S.E.	N.W.	11	12	12	C.	R.	C.	7	.11
Mean, the Week.		30.149	36.9	44.7	29.4				58.7										26	.62

O, cloudy; C, clear; F, fair; G, fog; H, hazy; S, smoky; R, rain; T, threatening; N, Snow; *T, trace of rainfall.

OFFICIAL LIST OF CHANGES OF POSITIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDED APRIL 21, 1888.

HUTTON, W. H. H., surgeon. To proceed to Biloxi, Miss., on special duty. April 21, 1888.

LONG, W. H., surgeon. Granted leave of absence for fourteen days. April 21, 1888.

SAWELLE, H. W., surgeon. Granted leave of absence for seven days. April 21, 1888.

URQUHART, F. M., passed assistant surgeon. Granted leave of absence for seven days. April 10, 1888. To assume temporary charge of Cape Charles Quarantine Station. April 17, 1888.

WHITE, J. A., passed assistant surgeon. Relieved from quarantine duties at Sapelo Station. April 21, 1888.

WILLIAMS, L. L., passed assistant surgeon. Relieved from duty at Marine Hospital, Boston, Mass. To assume charge of Cape Charles Quarantine Station. April 17, 1888.

BRATTON, W. D., passed assistant surgeon. Relieved from duty at Marine Hospital, San Francisco, Cal.; detailed as medical officer, Revenue Steamer "Bear," during summer cruise, April 19, 1888.

SOCIETY NOTICES.

SUFFOLK DISTRICT MEDICAL SOCIETY. SURGICAL SECTION.—There will be a meeting of this Section at 19 Boylston Place, on Wednesday evening, May 24, at eight o'clock. Communications: Dr. E. H. Bradford, "Two Cases of Direct Incision into the Hip Joint in Early Hip Disease." Dr. C. E. Porter, "Five Cases of Perineal Section," (reported by Dr. A. K. Stone). Dr. M. H. Richardson, "A Case of Supra-Pubic Cystostomy for Tumor of the Bladder." G. H. MONKS, M.D., Secretary.

SUFFOLK DISTRICT MEDICAL SOCIETY.—The annual meeting will be held at 19 Boylston Place, on Saturday, April 28, 1888, at 8 P.M. Paper by Dr. J. J. Putnam, "Paralyses Caused by Medicinal Doses of Arsenic, with Remarks on the Diagnosis of Multiple Neuritis." Reports of the Treasurer, Librarian, and Committee on Social Meetings. Election of officers. Surgeon after the meeting. Members desirous of being appointed delegates to the American Medical Association will please make known their wishes to the Secretary.

HERBERT L. BURELL, M.D., Secretary

PLYMOUTH DISTRICT MEDICAL SOCIETY.—At the annual meeting of the Plymouth District Medical Society, held at Brockton, April 18th, the following officers were elected: President, Dr. J. B. Brewster; Vice-President, Dr. A. E. Paine; Secretary and Treasurer, Dr. A. V. Lynn; Librarian, Dr. A. A. MacKen; Committee on Trials, Dr. H. N. Jones; Reporter, Dr. A. V. Lynn; Censors, Drs. E. A. Chase, W. P. Chisholm, W. C. Keith, F. J. Ripley, F. G. Wheatley; Connors, Drs. J. H. Averill, H. F. Borden, J. C. Gleason, B. F. Hastings, A. Millitt, A. E. Paine; Committee on Nominations, Dr. J. C. Gleason; Orator, Dr. R. Hammond; Delegates to American Medical Association, Drs. J. B. Brewster and H. W. Dudley.

A. V. LYNN, Secretary.

AMERICAN MEDICAL ASSOCIATION.—The Thirty-ninth Annual meeting is to be held in Cincinnati, May 8th, 9th, 10th and 11th. The General Meeting will be held in the Cincinnati Music Hall and the Sectional Meetings in adjoining rooms in the same building. Among the addresses in general session are, on

the first day the Annual Address, by President A. Y. P. Garrett, of Washington; on the second day, Address on General Medicine, by Prof. Roberts Bartholow, of Philadelphia; on the third day, Address on General Surgery, by E. M. Moore, M.D., of Rochester; on the fourth day, Address on State Medicine, by H. P. Walcott, M.D., of Boston.

In the Section of General Medicine the mechanism and treatment of pneumonia receives special discussion, together with diseases of the stomach. In the Section of Surgery, the appendix vermiformis, and its affections. In the Section of Diseases of children, infant feeding, and treatment of pseudo-membranous laryngitis by tracheotomy and intubation. The names of gentlemen announced to discuss these and other interesting subjects are well known, and a large number of papers are announced in all the sections.

The Committee on Railroads have secured a reduction on the certificate plan from all railroads entering the city of Cincinnati. The rate will be full fare going to the meeting of the American Medical Association, and one-third fare returning. Physicians will please ask for a blank certificate at the railroad office at the time they purchase their tickets, which certificate will entitle the holder thereof to a one-third rate returning. Drs. George Purviance and William Judkins are the local subcommittee in charge of railroad and hotel accommodations.

DEATH.

Died in New York, suddenly of heart disease, April 22d, Edward Greely Loring, M.D., aged forty-eight years.

ENTRANCE EXAMINATIONS, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, 1888.

Entrance examinations will be held at the Rogers Building, 187 Boylston Street, Boston, Mass., on Thursday and Friday, May 31st and June 1st. A second series, for those unable to be present then will be held on September 18th and 19th. The examinations will begin at 9 A. M., and attendance on both days of one month or the other will be required.

For the convenience of applicants outside New England, entrance examinations will be held on May 31st and June 1st, in the following cities: New York, Philadelphia, Montreal, Chicago, St. Louis, Cincinnati, San Francisco, Washington, Nashville, Tenn., St. Paul, Minn., Pittsburgh, Santa Fe.

BOOKS AND PAMPHLETS RECEIVED.

Strangulated Hernia. By George H. Taylor, M.D., New York. Reprint. 1888.

The Three Ethical Codes: the Code of Ethics of the American Medical Association, with its Constitution and By-Laws, the Code of Ethics of the American Institute of Homeopathy and the Code of Ethics of the National Eclectic Medical Society. The Illustrated Medical Journal Co., Detroit, Mich.

Memoranda on Poisons. By Thomas Hawkes Tanner, M.D., F. L. S. Sixth American from the last London edition. Revised by Henry Leffmann, M.D. Philadelphia: P. Blakiston, Son & Co. 1888.

Accidents and Emergencies. A Manual of the Treatment of Surgical and Other Injuries in the Absence of a Physician. By Charles W. Dulles, M.D., Fellow of the College of Physicians of Philadelphia, etc. Third edition, revised and enlarged, with new illustrations. Philadelphia: P. Blakiston, Son & Co. 1888.

Original Articles.

A STUDY OF ARTERIAL TENSION IN NEURASTHENIA.¹

BY S. G. WEBBER, M.D.

It is scarcely necessary to say that variation in the amount of blood contained in the brain, and especially irregularity in its distribution, may give rise to abnormal phenomena. This has been known for many years. Mosso was among the first to give a practical demonstration of the ease and rapidity with which the amount of blood in the brain may vary. He was fortunate in having patients who had lost portions of their skull, the brain being thus covered only by soft tissue. He fitted instruments to register the variations of circulation under different conditions.

He learned, by comparing the cerebral circulation with that of the arm that when there was a marked increase in the amount of blood flowing to the brain, the vessels of the arm were less full, and the reverse. Any intellectual operation, as multiplying two numbers, or any emotional excitement, or a sudden surprise, were sufficient to send more blood to the brain. Under certain conditions, the form of the tracing changed both for the brain and for the arm pulse.

These investigations have only an indirect bearing upon the subject which I now wish to bring to your attention; they are chiefly of value as showing that there is a marked relation between the circulation of the brain and that of the arm.

Dr. Anjel² has studied the circulation in the arm in neurasthenia, using the plethysmograph. It will be sufficient to mention that he found, when the brain is active, the amount of blood in the arm is diminished. In health, after the mental effort has ceased, the return of the normal circulation is rapid, and soon the previous equilibrium is re-established. In cases of neurasthenia the contraction of the vessels in the arm is of only short duration; they soon dilate. This change in the size of the arm is repeated at irregular intervals so long as the mind continues in action, and for a time afterwards, so that the normal equilibrium is only slowly re-established. Also, the circulatory disturbance is excited by very slight mental impressions, which have no influence upon healthy persons.

The prominent fact in Anjel's experiments is the instability of the vaso-motor innervation. There is a lack of healthy tone in the vessels.

This is the opinion generally held in regard to neurasthenia. I do not know that any special effort has been made to study the condition of the bloodvessels in neurasthenia with the aid of the sphygmograph. I have taken a large number of tracings in such patients at the Adams Nervine Asylum, and propose to study them with the purpose of learning, if possible, whether by this means the above opinion can be proved to be well founded, and also whether the sphygmograph can be depended upon as a guide in diagnosis, prognosis, or treatment.

Neurasthenic patients may be divided into several classes: First, those in which the vascular tension is nearly or quite normal. There are a few such, who seemingly have been only temporarily run down, and quickly recover.

Another class may be formed of those who, at first,

show a decided loss of vascular tone, who, after a course of treatment, regain a normal tension. These usually recover in a longer or shorter time. Those whom I have had under my care have not always regained health while under observation, but I have had subsequent information from many who have continued to steadily gain, and have recovered a fair amount of health.

A third class are those whose vascular tone is very much below normal, who show a variable condition of the vaso-motor system, sometimes apparently gaining a little, then losing ground, but on the whole making no substantial progress. Many of these have a hereditary tendency to an unstable nervous equilibrium, or there is some condition of the system that reacts unfavorably upon the circulation. These cases do not improve much, and whatever is gained is of very doubtful permanency; there is a lack of vascular stability which is unfavorable to recovery.

I have had a few cases where the earlier tracings showed a nearly normal condition of the bloodvessels, but later tracings were less favorable. In such cases there has usually been some cause to which such unfavorable change could be ascribed. One patient was doing well, gaining, with a good pulse; her son-in-law, upon whom she was partially dependent, met with an accident which was nearly fatal. This shock completely upset her, and the vessels afterwards showed a very great lack of tension.

Some of the worst cases show a great variation within a few minutes, one tracing being only slightly variant from the normal, the next, taken within five minutes, showing a great loss of tension.

Tracing No. 1 is quite normal, and may represent that obtained from the most favorable cases.



No. 1.

CASE I. Miss A., aged twenty-five, had taught school until entirely used up. She was a pale, weak, nervous-looking woman. She had several hysterical attacks, with loss of consciousness and delirium, at the catamenial period. These began with severe headache. There was no special uterine lesion, simply tenderness of all the pelvic organs. There was a murmur with the second sound over the aorta when she entered, which was supposed to be due to the anæmia.

Several tracings of the pulse were taken at different times during her stay. They were all very similar, and nearly normal.

She gained much, continued to improve after leaving, and after a year's rest was able to teach again. She has taught nearly two years, and when last seen was in good health; walked about three miles nearly every day. She took a small school, so as not to overtax her lately regained strength.

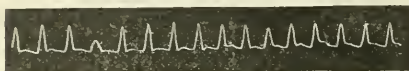
The second group consists of tracings from those patients who showed loss of vascular tone, but recovered a nearly normal tension and had a corresponding gain in symptoms.

CASE II. Miss D., aged thirty-one, was an interesting patient. She had never been strong. She was run down by care of mother who was paralysed. She had a distinct hysterical propensity to exaggerate

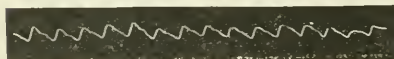
¹ Read before the Boston Society of Medical Sciences.² Archiv. f. Psychiatrie, etc., xv, 1884, p. 618.

and dwell upon her symptoms. When talking she winked her eyes rapidly, spoke in a complaining, whining tone. The real symptoms were those of nervous depression, headache, dizziness, insomnia, dyspepsia, *et omne id genus*. There was no ovarian tenderness; the lower parts of uterus and cervix were tender, there was extreme anteversion with slight flexion at junction of neck and body, a probe entered with difficulty, there was an ulceration with granulation about three-fourths of an inch in diameter around the os. A very faint murmur was heard with the first sound, and there was a slight increase of area of cardiac dulness.

The tracings showed a variation from time to time, irrespective of the medicine taken. The first tracing (No. 2) was not taken until the patient had been at the asylum three months. This shows a marked loss of tension. The next (No. 3) six weeks later is quite



No. 2.



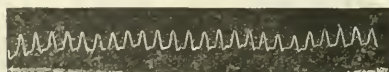
No. 3.

normal, but two days after the tension was again diminished. A month later there was less energetic action of the heart and a nearly normal tracing, with very slow descent. On the whole the vascular tone improved, the symptoms improved, the uterine ulceration was nearly or quite cured. She was examined some time after leaving and found to have recovered, and later gained in health and nervous vigor.

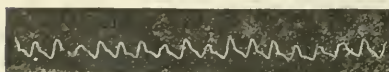
CASE III. Mrs. L., aged thirty-three, had had various local treatment for uterine disease. There was an enlarged uterus, probe passed in more than three inches, the cervix was enlarged, almost purple in color, bled easily, and presented many small spots of erosion. The symptoms were those of nervous prostration with headache, backache, irritability of temper, hysterical condition. She said any attempt to do for the uterus had only upset her, so she was simply given hot douches when it seemed necessary.

At entrance the tracing (No. 4) is seen to be characteristic of loss of tension, there is a slight tendency to dicrotism, the pulse is rapid.

After six months (No. 5) the pulse is much more



No. 4.



No. 5.

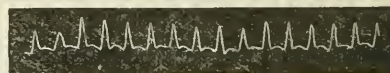
nearly normal, but of irregular strength. The tension is improved, not any tendency to dicrotism, in one or

two spots the needle seemed to catch in the paper and make a slightly toothed summit.

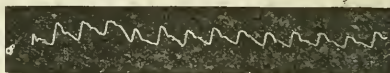
This patient was very much benefited by treatment and continued to improve after leaving.

CASE IV. Miss F., aged thirty-seven, was a patient who had suffered long from nervous prostration, of a very decidedly hysterical tendency, without any convulsive or other attacks; who, when fairly strong, had pretty good self-control. There was no complication. The patient was very fleshy and her nutrition was not in a good condition.

The tracing (No. 6) taken about two weeks after she came shows a great lack of vascular tension. She gained slowly, lost some of her superfluous flesh, and five months after gives a tracing (No. 7) much more



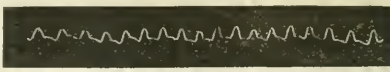
No. 6.



No. 7.

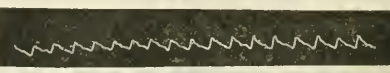
nearly approaching health. There seems to be even a slight excess of tension. She was at this time taking no medicine to increase the tension. She continued to gain after leaving here, though probably she will never be very strong. Urine 1040 acid on entering.

CASE V. Miss M., aged thirty-two, had quite marked hysterical attacks before coming to the asylum. She was underfed and a simple case of nervous exhaustion without any complication. A tracing (No. 8) taken a few days after her admission, shows a cer-



No. 8.

tain amount of loss of tone in the bloodvessels, not excessive; the first descent is too sudden. There is also an irregularity in the tension, the first part of the tracing the descent being more gradual at the beginning than near the centre of the tracing. After three months there was a decided improvement, the tracing (No. 9) became quite natural and healthy.



No. 9.

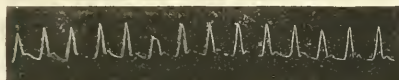
This patient was very much relieved; but her subsequent history is not known.

The next case is one in which there was an irregular gain and loss. The patient gained much while in the asylum, but not so much as those whose cases have been just recorded. This may be considered as intermediate between those first given and the next class.

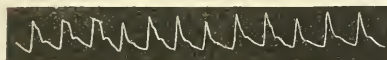
CASE VI. Miss J., aged thirty-three, had suffered for a long time with weakness and pain of back, headache, a confused feeling in head, inability to read long, and a sense of general exhaustion and tiredness. She was able to take only a small amount of nourishment at first, but later could eat well, though occasionally she had attacks of nausea and was obliged to live lightly. She had extreme anteversion of uterus, and after exertion or walking complained of distress. The displacement was rectified as much as possible, though owing to tenderness very little could be done. She probably exaggerated her discomforts to gain more attention. The heart sounds were normal.

The tracing (No. 10) taken soon after her admission, shows a strong impulse unresisted by the arteries, a decided loss of tension, hence a sudden descent nearly to the original level, then a slight dicrotic rise.

The next tracing (No. 11) taken three months

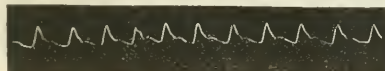


No. 10.



No. 11.

later, after a long rest in bed, good feeding and a general gain shows a less sudden descent, an absence of dicrotism, and a near approach to the normal, but much loss of tension. Five months later there is again a tracing very similar to the first; less dicrotic. Some months later (No. 12) the tracing is approach-



No. 12.

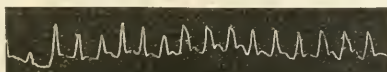
ing more closely the normal, but the tension is still rather defective.

This patient gained after leaving the asylum; several months after was strong but still had an appearance as if lacking in nervous force. She called herself well. It is not likely that she can withstand much of a strain.

The following are cases in which there was little or no gain, the condition of the vessels remained unfavorable. These belonged to the third group of cases.

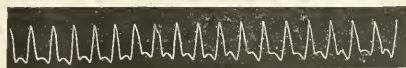
CASE VII. Miss G., aged thirty-nine, had a fall from a horse and hit the end of her spine; she suffered from backache and headache, was tired and looked worn.

There was very little difference between the tracings taken when she entered (No. 13), and when she



No. 13.

left (No. 14). She gained from her rest and quiet in

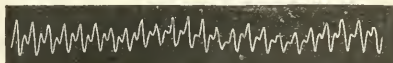


No. 14.

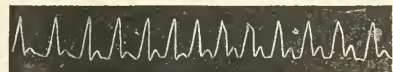
that she had less pain and was able to be about with much less discomfort. Nothing has been heard from her since a few months after she left; it is doubtful if the gain proves permanent.

CASE VIII. Miss H., aged thirty-one, fell down stairs when twenty-one years old, hurting her back; she was in bed four years or more; she suffered much from pain in abdomen. Afterwards she had attacks during which she was dizzy and then unconscious, with weakness and trembling afterwards. She was obliged to catheterize herself; she had aphonia which came on suddenly at the time of her father's death. Soon after she entered, her mother died suddenly, which was a shock to her, after which she was less well and more hysterical. There was partial hemianesthesia, which after a convulsive attack became more marked. There was a neurotic history on the father's side; he, his three brothers and nine sisters had sick headache, and the patient has three brothers, out of six, and two sisters who have sick headaches. The father suffered from some wasting disease for thirty years, perhaps progressive muscular atrophy.

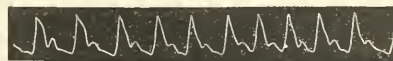
The first tracing (No. 15) was taken soon after entrance and shows excessive loss of tension and hyperdicrotism. A peculiar pulse which is seen occasionally in very excitable patients. The second tracing (No. 16) presents a loss of tension, the dicrotism is well-marked. The third tracing (No. 17) is much more



No. 15.



No. 16.



No. 17.

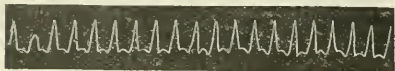
nearly normal, but there is still loss of tension. At the time when the last tracing was taken she had improved very much and had been able to speak aloud for a few days. She subsequently became worse and had a very greatly modified or aborted hysterio-epileptic attack.

She subsequently improved again, but a year after leaving was still far from well.

CASE IX. Mrs. G., aged forty-five years, had passed the menopause. She had from girlhood had sick headaches, which were probably hereditary. Her mother had these, and was very nervous; her maternal grandparents died of phthisis; she has five broth-

ers and one sister, all nervous; her daughter is hysterical. The patient was full of all sorts of notions, was a firm believer in "mind cure," but had only been slightly benefited by it; she shed tears frequently every day for every and no cause. She was thin, emaciated, evidently half-starved. She had spells of low spirits. She gained in flesh and spirits, and after five months she had never felt so well.

The tracings show a variation which is interesting. The earliest (No. 18),* taken about a month after entrance, shows an increase of tension; the impulse of the heart did not drive the needle very far; the descent is gradual, commencing only after a brief interval. Two weeks later a tracing showed a decided loss of tension; about three weeks later (No. 19), the same loss of tension, but a little more tendency to dicrotism; yet a second tracing taken on the same occasion gives a rather better showing. A tracing (No. 20) taken after she had been four months under treat-



No. 19.



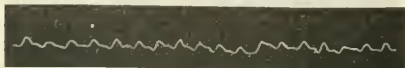
No. 20.

ment shows stronger impulse, but there is not a return to the normal tonicity of the arteries.

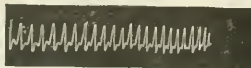
Although this patient felt so well and was so very much benefited, I think it is very doubtful if the improvement will be permanent. There is probably a too radical defect in the condition of the vessels, or rather of the vaso-motor nerves, and I doubt whether at her age permanent recovery of tone can be expected in one with such a hereditary tendency.

CASE X. Miss W., aged thirty, was running down during several years. She had backache, headache, tenderness over some of the vertebrae, generally weak, with little endurance, insomnia, anorexia, and other symptoms of general nervous depression. There was retroversion and some excoriation about the os, with much tenderness. She had attacks of palpitation, which at times gave her much discomfort; no abnormal sounds were discovered.

The first tracing (No. 21) was taken soon after she came; the second (No. 22) was taken during an



No. 21.

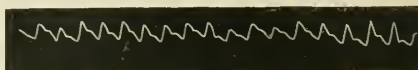


No. 22.

attack of palpitation; the fourth (No. 23) was after she had gained much, was up much of the time, and

* Omitted by mistake.

going outdoors daily. A later tracing showed, again, loss of tension, and was far from normal.



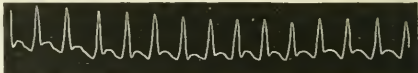
No. 23.

This patient continued to gain slowly after leaving, but eighteen months afterwards was by no means well.

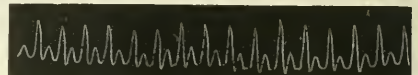
CASE XI. Miss M., aged twenty-seven, had had sick headaches very much; contracted malarial fever on Staten Island. She had various nervous symptoms, as backache, trembling, staggering, faintness; the headache was continuous with periods of exacerbation. There was special tenderness over the left ovary. There was great tenderness on vaginal examination, a small spot of excoriation about os.

Her father, mother, sisters, and brothers are subject to sick headache; her grandmother had headaches, her grandfather was insane when he died. A female cousin, nineteen years old, and a male cousin, fifteen years old, have sick headaches. Fourteen other cousins are young, one aunt and three uncles have sick headaches; several in paternal grandfather's family are free from trouble.

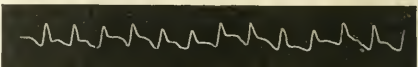
The first tracing (No. 24) was taken the day after admission; the second (No. 25), hyperdicrotic, was taken after a severe headache and attack of pain in region of left ovary; the third (No. 26) was taken



No. 24.



No. 25.



No. 26.

during an exacerbation of headache, and is the nearest normal of any. A fourth one was taken four months after the first, and showed almost exactly the same characteristics.

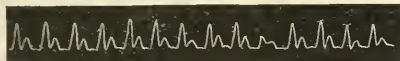
The patient's general condition improved, the headaches were less severe, and she had periods of freedom from pain. She did not recover, and there seems very little prospect of recovery.

In view of this and some other cases, the question readily suggests itself whether unstable vaso-motor action and loss of tone may not be hereditary and constitutional, and such persons be unable to endure even moderate strains in life.

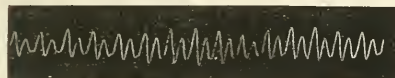
CASE XII. Miss W., aged sixteen years, ten months, had hysterical aphonia and ptosis; she had two or three attacks of hysterical spasms.

The tracings show decided loss of tension and ir-

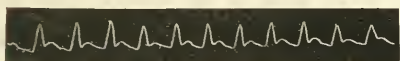
regular innervation of the arteries. The first tracing showed considerable loss of tone in the vessels. The second tracing (No. 27) was taken a few days before she began to talk aloud. The third tracing (No. 28), was taken the day after she stopped talking because some request was refused; she was much agitated at the time. When the fourth tracing (No. 29) was



No. 27.



No. 28.

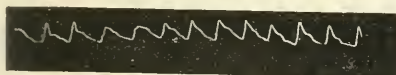


No. 29.

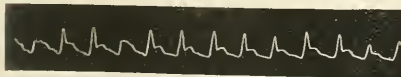
taken she had been gaining in strength, and was less nervous; she seemed more willing to follow directions, but still could not talk. After leaving she still improved, and I heard that in the afternoon of the day she left she spoke aloud. In the morning she would or could not make a sound. This is a good example of the instability of the arterial innervation in hysteria, the vaso-motor nerves being as irregular in action as other parts of the nervous system.

CASE XIII. Mrs. P., aged thirty-two, had been run down for some time. The chief discomfort was sick headache and pain in back of neck, with neuralgia about the face.

The first tracing (No. 30) was taken soon after entrance, and is quite normal. One (No. 31) taken soon after a headache showed a lack of tension.



No. 30.

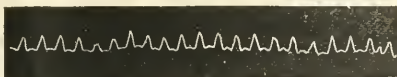


No. 31.

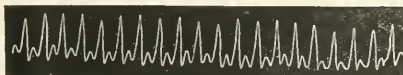
She gained decidedly, and after leaving continued to gain in strength, though, if she over-exerted herself, she was liable to have an attack of headache. The other pains disappeared or were very much diminished.

I give two tracings from a patient who had attacks of severe pain. They seemed to arise from the ovaries, or from some of the sympathetic ganglia in the abdomen. The first (No. 32) was taken before the pain; the second (No. 33) when the pain was at its height. The change in the tracing was probably due to the commotion caused by the pain.

In conclusion, then, it may be said that the sphygmo-



No. 32.



No. 33.

graph is an aid in determining the amount of exhaustion; and by comparisons of tracings taken at intervals, the progress of the patient towards recovery can be estimated. A fictitious gain can be recognized, as distinguished from a real gain; no gain being permanent unless the tension of the arteries is permanently restored. A patient's future prospects of health can be calculated with more certainty by an occasional use of the sphygmograph. It is sufficient to take a tracing once in two or four weeks.

THE TREATMENT OF LATERAL CURVATURE.¹

BY E. H. BRADFORD, M.D.

In the whole range of surgical literature, hardly a more uninteresting chapter can be found than that on lateral curvature. Even the pictures are repellant with the endless detail of appliances, from the beaten brass cuirass of Ambrose Paré and the later spinal couches, to the modern plaster-jacket and its variants.

The subject, however, is an important and, in reality, not an uninteresting one, and the treatment, prognosis, and diagnosis of the affection have been by no means put before the profession as clearly as could be desired. As many questions in the matter are still *sub judice*, and there is still a great variety of opinions as to proper treatment, a satisfactory presentation of the subject is still impossible. Some discussion based on experiments and experience with a number of cases will, however, perhaps be permissible.

The methods to be employed in treatment may be grouped as follows: (1) postural; (2) gymnastic; (3) mechanical; (4) rest.

These methods, as will be seen, are especially suitable to particular classes of cases, and they may be severally needed, either alone or in combination.

By the postural method is meant not only the avoidance of all faulty positions and vicious attitudes, but the correction of such vicious habits of attitude. It is practically the medical analogue of the "setting-up drill" of raw recruits in the army. In fact, in some localities, the services of a Prussian drill-sergeant are procured to drill stooping school-girls. The method has been systematized and given a scientific basis by Mr. Bernard Roth, who, with the addition of gymnastic exercises, both active and passive, has developed a most excellent system of treatment. The essential feature of this method is that the peculiarity in attitudes of each patient is carefully noted, and the position most nearly approaching the normal possible to

¹ Read before the Boston Society for Medical Improvement, April 9, 1888.

the patient is found, and that this position is carefully maintained, as far as possible, in the exercises prescribed. The method has been fully described by him, and the details can be found in his writings, and deserves more full description than can be given in the limits of this paper.²

In addition to the gymnastic and postural exercises which are prescribed, and which can occupy only a small portion of the day, care should be taken that the position assumed while sitting, standing, or lying should be as nearly as possible what is desired. The position in sleep is with difficulty controlled without some restraining appliance. The position, in the lighter cases, is not of great importance, as, in a hard bed, without a thick pillow, the chief cause of the development of the deformity, namely, superincumbent weight, is removed. In the usual deformity, that is, right dorsal convexity, the patient should not be allowed to lie upon the right side, with the arm under the pillow, but should lie upon the left side. In curves chiefly of the lumbar region, this is of less importance; the patient should be directed to lie on, or in a position to throw up the retreating hip, possibly with a pillow placed under the hip.

In cases where both curves are equally important, that is, the dorsal and lumbar, the patient should be required to lie upon the back. In severe cases some modification of the spinal couch is necessary, as will be mentioned later. Attitudes in standing should be simply that the patient be required to stand upon both feet equally. Practically, it is advisable that patients of this sort should not be allowed to stand still for any length of time, but that, when erect, they should walk about, or be directed to change their position frequently. The importance of sitting properly is manifest, and is illustrated by the well-known instance of the development of lateral curvature, with curves in opposite directions, in twin sisters who sat next each other upon the same bench at school, and who habitually leaned in opposite directions on the desk in front of them.

The question of school desks and chairs need not be entered upon, as the subject has already been fully discussed. It cannot, however, be too often urged that the school seats, as commonly used, are not properly constructed.³

The question of chairs is as important at home as at school, and it is a matter of surprise how few "easy chairs" are really comfortable to persons with backs with weak muscles. To ordinary individuals with backs of ordinary strength chairs are comfortable, as they relieve the lower part of the body of the weight of the upper, and partly support the back muscles from the strain of steadying the trunk. They rarely, however, are suitable to relieve the back muscles from being placed on the stretch. This will be seen in the following diagram (No. 1):

In fact, to most individuals, most of the easy chairs are practically but a support on which they can lean.

A chair, to be thoroughly a support, should allow the lumbar spine, that is, the hollow of the back, the upper part of the sacrum, to press against the back of the chair. The back should slope backwards slightly, but, if it reaches to the shoulders, it should not push the shoulders and head forward. Such chairs are seen

where the matter of comfort is carefully considered, for example, in some of the parlor cars, in some of the



Diagram 1.

The straight-backed chairs of our ancestors, furnished with a narrow seat, enabled the back to be supported, but is by no means an easy chair. If easy chairs are rarely suitable for adults, they certainly do not fit children; the backs being too high for their shoulders, the seats too deep for their thighs, so that, in the easy chair the child naturally assumes faulty positions, curling themselves up, sitting with their legs twisted under them, to obtain rest. In fact, the habits of the Japanese, who rest by sitting on the heels, is less dangerous to the backs of growing girls than the easy chairs furnished in ordinary households.

In severe cases, with extremely weak backs, it is advisable that the patient have a chair specially constructed to be used if he is to sit for any length of time. Such chairs should be furnished with a book rest.

The gymnastic method consists of gymnastics designed for strengthening such muscles as are needed for holding the trunk in a proper position. It is especially suited for cases of flexible curves, where the muscles are manifestly incapable of holding the trunk in proper position, and where rest is sought in faulty positions. But the gymnastic method should form the foundation of almost all methods of treatment of lateral curvature. Details of special exercises will not be given in this paper, but will be reserved for a subsequent paper.

MECHANICAL METHOD OF TREATMENT.

The mechanical means used are for the purpose of either (a) limiting, checking or preventing faulty attitudes; (b) for exerting direct pressure upon the projecting ribs or hip; or for (c) absolutely untwisting the curves.

To understand the first it is desirable to bear in mind the faulty attitudes most frequently assumed by patients with flexible lateral curves, as follows: (1) the elevation of the shoulder, the dropping of a shoulder; (2) the tilting of the pelvis, raising one hip; (3) leaning the trunk to one side.

The appliances used vary in effectiveness from simple straps or springs to fixed corsets or heavy braces.

(1) For the first purpose, that is, prevention of the elevation of the shoulder, a suitable shoulder-strap will be sufficient. This can be furnished by an ordinary cloth or soft leather strap (Diagram 11) which, passing around the elevated shoulder above, is buckled below to a belt which is kept down by straps secured to the

² Brit. Med., May 13, 1882.

³ Sanitary conditions and necessities of School Houses and School Life, p. 32, D. F. Lincoln, M.D.

American Public Health Association Prize Essay, 1886.

stockings. (2) Ordinarily, in light cases, the prevention of the raising of one shoulder will check the dropping of the other. If, however, it is not sufficient, a simple crutch can be employed in connection with the shoulder strap to the opposite shoulder.

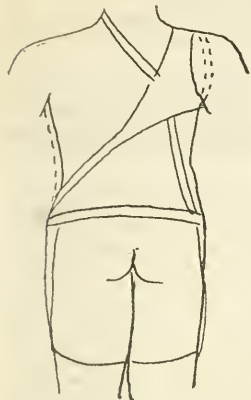


Diagram II.

More easily carried about than a cushion is a thick pad of saddlers' felt, which can be worn (secured to the waistband and drawers under the skirts) on one buttock.

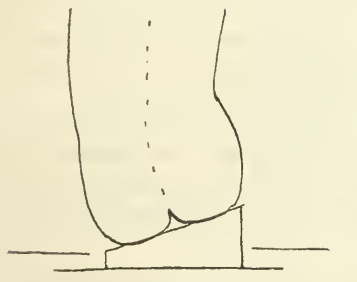


Diagram III.

Where the faulty attitude is one of leaning to the side, latent supports of some sort are of course needed. Corsets of some sort are most commonly used. Many different varieties are in vogue — plaster-of-Paris jackets and their substitutes, glue felt silicate of potash, leather made on molds taken from the jackets, and cloth corsets reinforced by steel. In choosing the proper corset one has to be guided not only by the medical conditions of the case, but by the circumstances of the patient, and the importance of sightliness and comfort, as well as of efficiency. The matter of personal custom of the surgeon often dictates the choice of the material employed. Leather corsets, formed by being stretched on molds of plaster jackets, the leather being reinforced by steel strips, will be found efficient and convenient. In light cases the leather corset need not completely encircle the trunk, but may simply be made in two lateral halves, connected by lacings or straps (Diagram IV).

The place on the corset for the reinforcement by

steel strips varies in a measure, in each case, but they should be so placed as to check the dropping of the shoulder if there is a tendency to this, as well as to check a habit of bending the spinal columns to one side. Lateral supports should be as low on the side of the pelvis as possible.

Corsets of this sort, or of any sort, are incapable of entirely preventing leaning to one side. They serve rather as checks or reminders. As a type of the stiffest corsets the plaster-of-Paris jacket may be taken. But it will be seen that although the trunk may be made straight by suspension, and a plaster jacket applied on a patient in this position, it is impossible to prevent a certain amount of slipping of the corset on the patient. If the corset slips upwards, or if the pelvis alters its position, the bearing of the corset on the pelvis is loosened, and the corset tips and is pressed to the side by the trunk (Diagram V).

This, of course, is true to a still greater degree if the corset is loosened or is made of less stiff materials as springs.

In order to prevent any tendency of the trunk to lean sideways, it is necessary that the base of the support be fixed. This can be done by the securing steel band and upright to the pelvis by means of straps resting on the crests of the ilia, and by furnishing perineal bands, and also by adding steel rods, which connected with the band by a rivet joint at the level of the trochanter, descend along the side of the thighs, and are secured to the thigh by straps. Flexion of the thigh is not prevented, but adduction or abduction of the thighs is possible to a very limited extent,

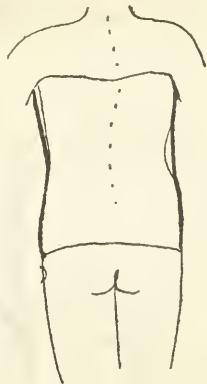


Fig. 1.

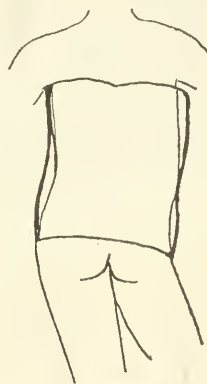


Fig. 2.

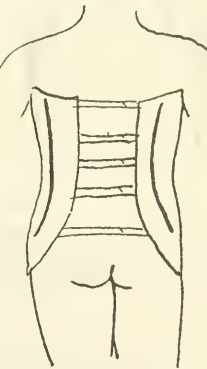


Fig. 3.

Diagram IV (3 figures).

and the tilting of the pelvis is therefore checked. (Diagram VI).

If the corset embracing the trunk is lashed to the upright of such an appliance, leaning to the side is prevented.

It will also be found an advantage if in place of the customary steel band encircling the pelvis an arched one be substituted which fits to the hollow of the back, and is not displaced by the movement of the pelvis incident to the motion of walking, or change from a standing to a sitting position.

If it is desirable to exert pressure upon the projecting ribs, levers moved by screw-power can be connected at one end to the steel support, as described, and furnished with pad-plates at the other.

The place for these arms necessarily varies in cases. In general, the place of pressure and counter-pressure will be designated in the accompanying diagram. (Diagram VI).

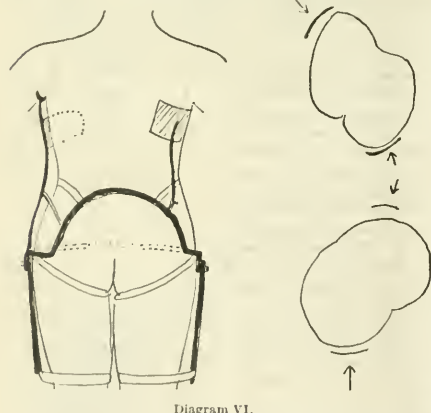


Diagram VI.

It is, of course, undesirable that pressure should be applied upon the hollow caused by sunken ribs, or that the chest be compressed. It is difficult, if not impossible, to prevent this if corsets alone are relied upon.

The criticism has been urged that pressure upon the ribs is useless, as pressure of the ribs which are connected with the spinal column by means of a movable articulation affects only the ribs, and not the twisted spine. This is certainly true in cases with

fixed curves with osseous change. It is not, however, entirely true in flexible curves, as can be demonstrated upon the cadaver and on patients.

It must, however, be frankly admitted that the amount gained by direct lateral pressure is not as great as has been expected.

Assuming that the chief cause of lateral curvature is the superincumbent weight, it is manifest that no corset can entirely meet the indication of removal of the primal cause.⁴ Removal of the primary cause can only be done in two ways; namely, recumbency and suspension.

The objections to recumbency are evident. Lateral curvature is not an affection where a climax is reached in a few weeks or months. It is a matter dependent upon growth, occurring during the growing years, when the bones are in a forming state. To condemn a growing girl to years of confinement, as was formerly done, to a spinal couch because a shoulder projects, is extremely severe treatment, justifiable only in the certainty of the imminent peril of the patient, rarely true in scoliosis. Confinement to a spinal couch for a few weeks is, of course, useless. As a method of treatment, recumbency should be employed for a long time, if at all. It can, however, be used as an adjunct in suitable cases for the purpose of temporary correction of the deformity and daily rest for the spine.

That the mere matter of temporary rest to the back is of importance, when it is considered that the spinal column is the only means of the support of the weight of the upper part of the body; in other words, that the lower part of the column bears nearly constantly for twelve hours, even in a child of adolescent or comparatively small size, a downward pressure of forty to fifty pounds on a surface not two inches square.

In lighter cases, simple recumbency on the back, face, or one side for a few hours every day is sufficient; but in severer cases it is desirable to add some form of lateral pressure and suspension. Pressure can be furnished either by placing sand-bags under and upon the projecting deformity, requiring the patient to lie upon the back, or a more elaborate arrangement can be used, furnishing lateral pressure by means of straps and screws.

Extension to the head or of the lower extremities is of service in upper dorsal and in lumbar curves respectively, and can be readily attached to any of the arrangements of recumbent fixation.

Direct vertical suspension will correct flexible lateral curves, as it removes the chief cause; namely, superincumbent weight. It is, of course, impracticable to employ it continuously. It was originally supposed that the application of a plaster jacket to a patient suspended preserved the correction obtained by suspension, and a portable appliance, with the benefit of suspension, was thus furnished. Experience disproves such an idea. As has been seen, slipping of a corset alters the pressure so, that so far from corrective pressure being furnished by such a jacket, pressure upon the sunken ribs may take place from the twisted jacket. This will not be obviated by making the jacket more full over the concavity, for this enables the jacket to tilt still farther.

Curvatures which are fixed either by the adapted shortening of ligaments or by bony change will not be corrected by direct suspension.

Various appliances for twisting the spinal column

⁴ Boston Medical and Surgical Journal, September 9, 1886, p. 221.

will be found of some help. The idea is an old one, but it has been improved by Lorenz and Beely.⁶ The arrangement depicted in the accompanying diagram (Diagram VII), which is slightly modified from the appliances described by them, will be found of service. Daily use of this will be found to correct distortions which simple suspension or recumbency will not correct. The effect of such correction is only temporary, unless the gain be improved upon by fixative appliances. This Lorenz reports to have done successfully. I cannot claim to have been equally successful, although the fault may be that I have not used it as persistently as Lorenz has done.

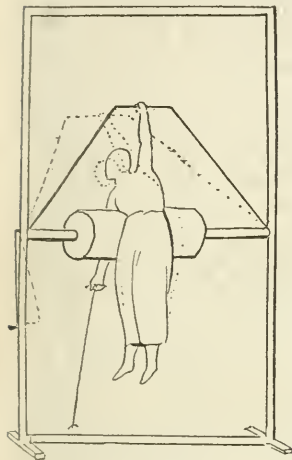


Diagram VII.

appears in a recumbent position, or when the patient is suspended, or with the arched back, is flexible. If it does not disappear, it is to be classed as fixed or resistant.

The patient's physical condition, whether anæmic or otherwise, the digestion, the nervous system, and the capacity for sleep, etc., are to be carefully noted. The rate of growth, whether normal or excessive, is estimated by a comparison with Bowditch's tables of height and weight, taking into account in each case the probable influence of heredity. The muscular strength is determined by means of dynamometers, the muscles to be investigated being those that hold the trunk in the normal position, grouped, not according to individual muscles, but according to function; that is, the muscles which hold the head up, the muscles which hold the scapula back, the muscles which hold the trunk erect. The range of sight is also to be noted, and any difference in the strength of either eye is to be taken into consideration.

The dependency of proper treatment on these facts can readily be understood if we consider that, if the patient's muscles are very weak, the employment of any jacket or appliance which would cramp the use of the muscles is necessarily to be avoided as far as possible, as the development of the muscles is the

chief curative measure; and, on the other hand, in patients with very strong muscles, and with faulty habits of position, if these habits can best be corrected by appliances temporarily worn, such measures are advisable. If the patient is constitutionally weak, needing sunshine and air, it is perfectly irrational to enforce recumbency; or, if the patient's nervous system is exhausted by rapid growth, it is a hygienic crime to allow forcing at school.

The chief objection to the use of appliances is a substantial one; namely, that they can never form a definite cure, in that they can never reach the root of the matter, and simply correcting a faulty position does not prevent a recurrence of the distortion on removal of the brace. It is, therefore, evident that, if mechanical means are to be used at all, they are simply to be used temporarily, while there is hope of the correction of the deformity or danger of increase; and that they should be subsidiary in position to measures which will enable the patient to hold himself as nearly in a proper position as possible.

To epitomize the treatment of lateral curvature is difficult, as it necessarily varies in different cases, but the following general line of treatment can be sketched: In fixed lateral curvature in adults, with marked osseous change, corrective treatment; that is, for the correction of the curve, is useless, and preventive treatment is, as a rule, unnecessary in persons of good health, but in certain cases with poor health, preventive treatment; that is, the prevention of the increase of the curve, is demanded.

In fixed and in flexible curves in young and in rapidly growing adolescents the preventive treatment is essential, and the corrective treatment is advisable in most cases; the importance of the latter varying, according to the amount of bone deformity. Preventive treatment should be primarily gymnastic or postural, mechanical treatment being either unnecessary, or used as an aid in the prevention of faulty position. Corrective treatment is either postural or mechanical, or better, a combination of both with gymnastics.

Many authorities claim that lateral curves are certain to increase. This, according to my experience, is by no means certain, as I have watched cases for some years where treatment was neglected, and the curves have remained essentially unchanged. The affection would seem, in a large majority of cases of healthy children, to be entirely self-limited in its character. In rapidly growing children, however, or in children physically weak, there is great danger of increase of the curve, and in some cases the increase is quite rapid.

A diminution of the curve in the process of growth, the "growing out" of the deformity, may be said never to take place. It must also be admitted that certain cases of lateral curvature are entirely beyond surgical remedy. Where the bones are much destroyed, it is as impossible to attempt any correction as it would be to correct the curve after caries of the spine. Such cases are capable only of palliative treatment, but can be made comfortable, and their symptoms relieved, by corsets, by massage and by certain gymnastics, by suspension and by recumbency.

— Harvard boating men state that the most injurious feature in the college athletics is the close proximity of the annual examinations and the intercollegiate boat race,

⁶ Pathologie und Therapie der Seitliche Rückgratsverkrümmungen Lorenz. Wein, 1887.

REMARKS ON THE PLASMODIUM MALARIE.¹

BY FREDERICK C. SHATTUCK, M.D.

The suggestive paper of Dr. Whittier, entitled "The Malarial Influence on the Typhoid Fever of 1887 in Boston," read at a recent meeting of this society, and since published in the *JOURNAL*,² has made me think that the members of the Society may care to see some stained specimens of the plasmodium malariae, and listen to a few words as to the manner of looking for these bodies, with the precautions to be observed. I was so fortunate last summer as to have several cases of malarial infection at my wards at the Massachusetts Hospital, and in some of these my assistant and I had no difficulty in finding the organism which is thought to be the cause, as it certainly seems to be the concomitant of the paroxysms.

Laveran, who studied the disease in Algiers, was the first to describe the organisms to which the Italians, Marchiafava and Celli, working in and near Rome, gave the name plasmodium. Their results were in every way confirmatory of those of Laveran, as have been the results of other workers in the field, including among Americans Councilman³ of Baltimore, and Osler,⁴ of Philadelphia, to both of whom, particularly the latter, I wish to express my obligations. In the first place there is but little hope of detecting the organism in the mild intermittents originating in New England except during the paroxysm, or perhaps immediately before or after it. In the severer forms of chronic cases of the disease certain blood changes can often be detected, even when anti-periodics have been given.

A word is required as to the proper method of examining the blood. The finger-tip from which the blood is taken should be carefully washed and wiped dry, even from perspiration, that no extraneous dirt may get into the preparation. After pricking the finger a very small drop of blood is to be taken on a clean cover glass, which is then, in examining fresh specimens, to be applied to the slide, pressure being exerted upon the cover with the nail in order that the blood may be spread out in a thin layer. The corpuscles should be isolated, not sufficiently thickly aggregated to run into rouleaux. A specimen remains serviceable longer if the edge of the cover-glass is protected from the air by paraffine, and a warm stage is convenient; but neither one nor the other is necessary. No reagent is to be added.

If it be desired to preserve specimens a thin layer of blood is spread upon a cover-glass, thoroughly dried in the same manner as sputum in the search for tubercle bacilli, stained in methyl blue or fuchsine, and mounted in balsam. My friend, Dr. Osler, tells me that this staining process is very easy, but my efficient house-officer, Mr. N. F. Chandler, had very poor success with his attempts to stain slides taken from my patients. The slides which I show you were given me by Dr. Osler. All of our observations of the organisms were made upon the fresh specimens.

It is desirable to use high powers, though the bodies can be seen by one who knows what to look for with a power of five or six hundred diameters; but the changes which the bodies undergo are not so easily studied.

It is not my intention here to describe all the forms which have been observed. Those who are interested will find them all, with full reference to the literature of the subject, in Osler's paper. Some of these forms are associated chiefly with the inveterate and severe types of malaria such as we do not see here, except where now and then a case comes from a distance.

The forms seen by Mr. Chandler and myself were those which are most common and are found in the red corpuscle. To describe them I cannot do better than quote the words of Osler. "The attention of the observer will most likely be first attracted by the presence of a few dark grains in the stroma, and a careful study of a suitable specimen will soon lead to the conviction that these are not scattered loosely, but are enclosed in a finely granular or hyaline body in the interior of the corpuscle. The red disks in which they occur are usually large, look flat, and are very often paler than normal; they may, indeed, exist only as colorless shells. The number of corpuscles so affected varies extremely in different cases. In some instances they are readily found after a search of a moment or two, but, in other cases, a prolonged examination may be necessary. One is usually present in each corpuscle, but two or three, or even four, may occupy the stroma. They vary greatly in size, the smaller ones not occupying a fourth of the corpuscle, while the larger ones may almost fill it. A delicate contour line can usually be seen separating the body from the stroma; at times this is very indistinct, particularly if the illumination is very bright. The substance appears hyaline, or very finely granular, and the pigment grains are scattered irregularly in it. They may be very numerous, and give a dark aspect to the body, or they may be scanty. They frequently present rapid Brownian movements. Occasionally a vacuole may be seen in the interior of the body. In several instances the bodies appeared to be enclosed in a clear space — vacuole — in the stroma. When first seen they are more or less spherical, but, as already stated, the outline may be indistinct. The pigment granules may be seen to alter their position in relation to each other. If the margin of the body is carefully observed, slow changes can be seen, which gradually bring about alteration in shape. These movements, which appear to be amoeboid in character, can often be traced with great ease. Change in position of the body in the corpuscle result from them. They are decidedly slower than the amoeboid movements of the colorless corpuscles." Osler states that he has never seen any evidence of migration from the corpuscle; it was my fortune once to see the body escape from the red disk without destroying the latter.

Another intra-cellular form seen in one of my cases was the hyaline non-pigmented variety, the changes in which are more rapid than those in the first described pigmented form. What the relation of these forms to one another is — or is not — has not yet been determined. In this same case the rosette form was also seen within the cell, but its segmentation, as described by Osler, was not followed. The extra-cellular forms were not seen by us. The amoeboid movements continue for half an hour or more, at the ordinary summer temperature.

It remains to give a brief statement of my cases. Six malarial cases were admitted to my wards during my last service. Two of these had no paroxysm after entrance, though they received no treatment. There

¹ Read before the Boston Society for Medical Improvement, April 9, 1888.

² March 8, 1888.

³ Transactions of Association of American Physicians, Vol. I, p. 89.

⁴ British Med. Journal, 1887, March 12.

were consequently only four available for a study of the blood changes.

I. A Swede, contracted the disease five months ago while working on the Panama Canal, and suffered from chills nearly every day since. The day after entrance the organisms were found in pretty large numbers during the chill. The next chill was prevented by quinine and the organisms disappeared.

II. Contracted the disease in the West Indies three years ago. The patient had lately been in Mobile, and had a recurrence of chills which were somewhat irregular. The spleen was decidedly enlarged: the man's general condition was very poor. His blood was examined three times during the chills with negative results. He was cured by the hydrobromate of quinine under the skin, as the stomach rejected the remedy.

III. A woman, contracted the disease near Boston about a week before entrance: anticipating tertian, she had one chill in the hospital, the pigmented amœboid form was found; quinine, cure.

IV. Disease contracted in Wayland; tertian, pigmented amœboid form, quinine, cure.

Thus in three cases out of four the bodies were found without difficulty. Why they were not found in Case II, I cannot explain. The malarial history was clear, his spleen was enlarged, and he was promptly cured by quinine. Osler mentions some cases in which the plasmodium could not be found, but in most of these there was opportunity for only one examination. The far larger experience of Osler and Councilman shows great constancy and some obscure cases in which the diagnosis was made by the presence or absence of the bodies. Marchiafava and Celli succeeded in producing malarial paroxysms accompanied by the plasmodium in the blood, in previously healthy persons, by the injection of blood drawn from a malarial patient during the paroxysm. All attempts to cultivate the organism have thus far failed.

RECENT PROGRESS IN ANATOMY.

BY THOMAS DWIGHT, M.D.

THE CÆCUM.

TREVES's excellent lectures on the Intestines, published in 1885, contained, we believe, the first statement written in English that the cœcum is completely covered by peritoneum. It must not be forgotten, however, that new as this appeared to English and French readers, the Germans had known it long ago. It is surprising that if there is a substantial regularity of arrangement such absolutely opposite views should be held. Treves declares that he has never seen a cœcum with its posterior wall uncovered by peritoneum. M. Tuffier¹ has written a very careful paper on the anatomy, physiology and pathology of the cœcum, which is in the main, though not wholly, confirmatory of Treves's views. In a disputed question of this kind it is essential to define the limit of the cœcum, and we may accept Tuffier's statement that it coincides with a plane immediately above the ileo-cœcal valve. If a window is made in a dried and distended cœcum the upper limit is clear enough, but we must own that it is not easy to recognize it when the intestines are un-

opened and *in situ*, although Tuffier says it is indicated by *une forte bandelette annulaire du colon*. It must be admitted that if, as a ready method, we draw a line across the colon from opposite the highest point of junction of the ileum and call all below it cœcum, we give that part of the intestine all and more than belongs to it. It would be more just, but more difficult, to draw the line from a point at the middle of the end of the ileum.

M. Tuffier describes the lymphatic glands of the immediate neighborhood, which are so important that we give his description literally translated:

"The lymphatics of the anterior region represented in Heule, injected by M. Faraheuf, (specimen in the Musée Orfila) follow the anterior ileo-cœcal artery to empty into two glands, which I have constantly found in the superior ileo-cœcal fold, and which are very distinct in the child. The posterior lymphatic glands do not appear to me to have been figured nor well described by the authors. They are, however, constant and very well developed. To see these glands well it is enough to turn the cœcum over on to its anterior surface and examine the posterior one. They are then seen through the transparent peritoneum. They lie on the posterior and inner surface of the cœcum, of which they form a part. They are covered by the peritoneum, which at this level binds them to the walls of the intestine itself, and separates them completely from the iliac fossa. In general they form a group of from three to six, but one or two stray ones may be found in the neighborhood of this group."

The importance of this group is hardly likely to be over-estimated. We must refer the reader to Tuffier's paper for the account of the fossæ and peritoneal folds. Suffice it to say that following Treves's lead he has done much original work.

As to the peritoneal covering he found in 120 subjects, adults, children and fœtuses, that in 9 only the superior posterior third of the cœcum was uncovered by peritoneum. These nine were all adults or old people. The height at which the peritoneum leaves the posterior surface of the gut varies greatly. In most cases it is a finger's breadth above the ileo-cœcal opening. Tuffier has twice seen the entire ascending colon completely covered and as free as the cœcum.

The writer of this report would state in this connection that, having given particular attention to this point of anatomy, he is convinced that the German teaching which Treves has followed, namely, that the cœcum has a complete peritoneal covering, is undoubtedly correct in the great majority of cases. Treves goes too far, however, in looking on it as probably constant, for exceptions sometimes occur. The writer, moreover, in examining the bodies of thirteen infants who died at, or shortly after birth, has found in two cases the posterior surface, and in one case the upper third of this surface, without peritoneal covering.

Our author calls attention to another point, which we believe has been but little noticed, namely, the degree of firmness with which the peritoneum is attached to the other coats of the intestine. In the colon the attachment is lax, so that the serous layers can be moved, but in most parts of the cœcum the layers are firmly joined so the peritoneum cannot be peeled off without tearing. It is loosely attached, however, in the upper posterior third.

¹ Archives Générales de Médecine, Juin, 1887.

SUSPENSORY LIGAMENTS OF THE THYROID GLAND.²

Mr. James Berry made a communication on this subject at the July meeting of the Anatomical Society of Great Britain and Ireland. These ligaments, blending with the capsule of the thyroid, attach it to the cricoid on either side, forming a kind of sling. Though strong, they have no very precise borders, blending, as they do, with the fascia on either side. When the gland is enlarged these ligaments become strong bands, mooring it to the larynx. Mr. Berry looks on them as of much surgical importance, as they are obstacles to the removal of the thyroid, and it is to be noted that they lie directly below the recurrent laryngeal nerves.

CHANGES IN SHAPE OF THE LIVER.³

Mr. Symington has shown by frozen sections that both the position and shape of the liver vary with the condition of the stomach. Without going so far as those who maintain that the liver has no definite shape of its own, many have believed that when healthy its shape is very changeable. We think, however, that few of these would have been prepared for such remarkable shapes as are shown in some of Mr. Symington's figures. When the stomach is distended the vertical diameter of the right lobe of the liver is greatly increased, and the transverse diameter of the entire organ much diminished. Moreover, according to Mr. Symington, the distension of the stomach causes a certain rotation of the liver on a vertical axis passing through the inferior vena cava. In some cases Mr. Symington has taken the slices of frozen liver out of the sections, and, putting them together, has reconstructed the organ so that it could be drawn as a whole. It may be objected that frozen sections cannot show that the liver actually changes either shape or position, and that before they can give anything amounting to a demonstration, a greater number of observations is required. This can hardly be disputed, but it may be said that the results are so much in accord with what might be expected (except that they are unexpectedly striking), that it is unlikely that further observations will do more than modify matters of detail.

VALVES IN THE GASTRIC AND OMENTAL VEINS.⁴

It is taught as established that there are no valves in the portal system of man. Sappey, to be sure, found some in the very small veins in the falciform ligament of the liver that connect the portal system with the veins of the abdominal walls, and Bauer has described them in the short veins of the stomach, but Cruveilhier, who quotes him, failed to confirm his statement. With these exceptions, nothing, so far as we know, has been written on the subject. Dr. Hochstetter recently came across valves on injecting the portal system of the body of a child a few months old, and was led to make many examinations. He found that in the infant the tributaries of the right and left gastro-epiploic veins, which form an arch along the greater curvature of the stomach, both those from the stomach and from the omentum, had sufficient valves at or near their points of entrance. The veins open-

ing into the coronary vein, which runs along the lesser curvature of the stomach, are occasionally found with valves, but without regularity, excepting in the case of the branch (and its tributaries) nearest the œsophagus. The veins of the omentum, however, have valves not only at their entrance into the gastro-epiploic veins, but throughout their course, wherever a smaller branch opens into a larger. These valves are as well formed as those in other veins, but are delicate and tear comparatively easily. With increasing age they become insufficient: first, the gastric branches of the right gastro-epiploic near the pylorus; next, those emptying into the left vein of the same name; then those of the short gastric veins. By the twentieth year, apparently, there remain no valves in working order along the greater curvature. The valves of the highest branch of the coronary vein endure comparatively long, and those of the omentum longer still. Hochstetter has found perfect valves in the omentum in old persons.

It was known that in some mammals valves are present in the portal system, but Hochstetter has added much to our knowledge of this subject. He has shown that valves are to be found in the gastric and splenic parts of the portal system in many mammals, but that their importance varies greatly. He found them in some carnivora, especially the dog and cat, to have a real, and apparently permanent, influence on the circulation; in some orders he found that as in man, they have only a temporary function, and again, sometimes, as in the rabbit, there are merely traces of valves. They may, therefore, in some cases be considered rudimentary organs.

Another paper by Dr. Karl Klotz⁵ shows that many valves become useless in the course of life. He examined the long saphenous vein and its tributaries in seven adults, two new born infants and one fœtus. The number of observations is extremely small, but they show tolerably well the atrophy of the valves which is, we think, the most important point of the paper. Thus in the two infants and the fœtus all the valves were in good working order, but in a man of twenty-five, 17% were impaired. In two others of about thirty, and in one of forty-two, the proportion was about the same, but in a man of forty-eight it had increased to 29%, in one of fifty-four to 40%, and finally in an old man of seventy to 81%. That many valves should become useless in old age is not surprising, but what is remarkable is the fact that about one-sixth should be impaired before twenty-five.

VEINS ON THE PHARYNX.

Messrs. Bimar and Lapeyre⁶ describe a remarkable submucous venous plexus in the lower part of the pharynx at its posterior aspect. It is found at all ages and is not more developed in the old than in the young. It communicates with the superficial pharyngeal plexus by several systems of veins that perforate the inferior constrictor. Of these the following are nearly constant: (1) A superior and posterior one near the median line. (2) One running upward and outward parallel to the posterior border of the thyroid cartilage and forming a part of the origin of the pharyngeal vein. (3) One passing outward towards the thyroid body, and emptying into branches of the superior thyroid vein.

² Journal of Anatomy and Physiology, Vol. XXII, October, 1887.

³ On Certain Physiological Variations in the Shape and Position of the Liver. Edinburgh Medical Journal, February, 1888.

⁴ Hochstetter. Archiv. für Anat. und Physiologie. Anatomische Abtheilung, 1887.

⁵ Same Journal.

⁶ Comptes Rendus. Tome cv, No. 18, 1887.

THE INTERARTICULAR FIBRO-CARTILAGE OF THE STERNO-CLAVICULAR JOINT.

M. Poirier,⁷ having met three times with absence of the fibro-cartilage, has undertaken the study of its use and significance. He regards the usual view that it practically establishes a correspondence between two surfaces that do not fit as erroneous. He maintains that, though the articular surfaces of the sternum and clavicle vary, still they do correspond. Having dissected a hundred joints, he finds that the articular surface of the clavicle which encroaches on the lower surface of the bone is distinctly convex vertically, and slightly concave from before backwards, and that the sterno-chondral joint is distinctly concave in the former direction, and very slightly convex in the latter. He then points out that the interarticular cartilage is very variable in shape, and concludes that it is present merely as a rudimentary structure, the representative of the interclavicle. We are not inclined to dispute the homology, but we think Poirier in error not to recognize that the cartilage adds very much to the security of a very important joint, the only one, in fact, between the trunk and the upper extremity.

ANASTOMOSES OF THE NERVES OF THE ARM AND HAND.

M. Henri Hartmann,⁸ at the beginning of an important communication to the Société Anatomique, alluded to a previous one, in which he had shown that the collateral nerves of the fingers were very frequently perforated in the palm of the hand by the digital arteries. This occurred in two ways: either the vessel passed through a small opening, a "button-hole" in the nerve; or else the fibres of the nerve, separating into different bundles, left a long elliptical space, through which the artery made its way. It is a rather curious fact that the branches of the median nerve should show the button-hole, and those of the ulnar the elliptical opening. It appears that it was suggested that M. Hartmann had struck a series of uncommon cases, to which he says that he had found these appearances in sixteen hands out of twenty-four, and that having continued his investigations, he has found in twenty-nine of forty-five hands either the button-hole or the ellipse on one or another of the digital nerves. He has noticed several times an arrangement in which the opening was made not by a splitting of a nerve, but by fibres from the next branch of the parent nerve rejoining the nerve in question. If the reader should not find this clear let him imagine a Y, the arms of which represent two digital nerves. Let him then imagine that certain fibres begin by following one arm for a short distance, and then leave it to join the other, thus forming an opening bounded above by the bifurcation. Hartmann points out that in this case no dissection is necessary to separate the fibres, which only lie against the bundle; they appear to have joined inadvertently, without really mingling with them. He then goes on to describe analogous cases in the large nerves of the arm, in which the fibres of a certain nerve apparently join another and then leave it. This appears to occur most frequently between the median and the external cutaneous, the fibres coming sometimes from one, sometimes from the other. We should say that more than twenty years ago a branch of the musculo-spiral was described by Krause, running

along with the ulnar, and leaving it near the elbow. Hartmann describes also long ellipses made by fibres rejoining their own nerve after a long course.

The special importance of these observations lies in their bearing on certain clinical facts which are hardly to be reconciled with the teachings of anatomy and physiology. We refer to the well-known fact that the paralyses of motion and sensation after section of a nerve do not always correspond with the area of its distribution, and that sometimes the discrepancy is very striking. Richet reported an extraordinary case,⁹ in which, after section of the median, insensibility was unchanged, except that it was diminished on the palmar surface of the second and third phalanges of the index, and there are other cases in which motion has persisted. We must admit that we find it difficult to account for extraordinary cases by the theory that when a certain nerve is cut, and but a part of the usual effect follows, this is due to the fact that many of its fibres have taken another course; but this theory will do well enough for cases where the discrepancy between the actual and the expected result is not great.

Clinical Memoranda.

NEPHRECTOMY OF THE RIGHT KIDNEY FOR CHRONIC ABSCESS.¹

BY JOHN HOMANS, M.D.

THE subject of this operation was an intelligent girl twenty-four years old, a patient of Dr. C. B. Belt. Her illness dated back three years, when she began to have urinary symptoms, as shown by frequent micturition. In July, 1887, there was some fulness in the right lumbar and iliac regions, and in August a tumor was discovered, which has slowly increased in size. During the last three years she has lost much flesh and strength, and now feels weak and tired. The catamenia have been absent for six months. Her appetite is now good, and her pulse 116 per minute, and of fair strength. She has almost complete incontinence of urine. The urine is yellow, alkaline and offensive. One-half per cent. of albumen is present, and a trace of sugar. The coloring matters are diminished. Specific gravity, 1028. Sediment thick and heavy, consisting of pus, a few blood globules, epithelial cells from the bladder and kidney, crystals of triple phosphate and uric acid. There is a tumor about four inches long, of an oval shape, in the right loin. This is movable, and extends from below the short ribs towards the umbilicus, and then turns outwards to within two inches of the crest of the ilium. Pressure on the loin is transmitted to the tumor, which is apparently the right kidney much enlarged. Dr. Belt and I agreed that an attempt should be made to drain the kidney before resorting to an operation for its removal, and the patient was admitted to St. Margaret's Home. On the sixth of March I made an incision over the tumor in the right loin and exposed the kidney, which I punctured with an aspirating needle. Thick pus was drawn out. The opening was then enlarged with the knife and the finger, and about three drachms of thick pus were removed. The size of the kidney, however, was not materially diminished, and

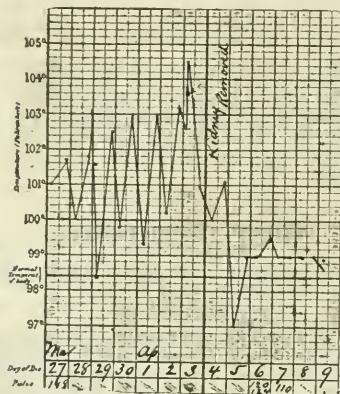
¹ Read before the Boston Society for Medical Improvement, April 9, 1888.

⁹ Gazette des Hôpitaux, 1867.

⁷ Bulletins de la Société Anatomique de Paris, 1888. Janvier.

⁸ Bulletins de la Société Anatomique de Paris, 1888. Février.

it was impossible to enter other cavities where the same material would probably have been found. The kidney was sewed to the skin, and a large drainage tube was secured in its substance, and the cavity I had opened was syringed out. A Sims's catheter was kept in the bladder for a few days, and after that the patient gained control of her urine. For four weeks the cavity in the kidney was irrigated, but the evening temperature ranged from 102° to $104\frac{1}{2}^{\circ}$. It became evident that removal of the kidney was the only measure that promised any relief, and this was done on April 4. You will see by the chart what a relief this was.



An incision was made in the right loin extending from the twelfth rib to the crest of the ilium, nearly parallel with the external border of the quadratus lumborum. The peritoneum was not opened, the kidney was pulled out without very much difficulty, and the ureter, which was the only tense attachment, was secured, divided, and sewn to the skin in the lower angle of the wound. The vessels were then tied securely *en masse*, and the kidney cut away. A large rubber drainage-tube was inserted, and the cavity left by the removal of the kidney was cleansed with a solution of corrosive sublimate. The wound was sewn up and powdered with iodoform, and dressed with iodoform gauze. In the evening the temperature was 101° , the lowest evening temperature for weeks. On April 5th the temperature became subnormal in the morning, and then kept at about 99° morning and evening in the succeeding days. Up to this present time the patient has been doing well. About eighteen ounces of urine are secreted daily, and although there is not much improvement in the character of the urine, yet as we have got rid of one focus of pus, we may hope for an improvement in time. You will see that the kidney removed is about five and a-half inches long by two inches thick, and it weighed before being cut open seventeen ounces.

The cones have become converted into cavities of the size of a thimble and larger, and containing much thick, offensive, putty-like pus; the calices and pelvis are likewise filled with it. Even the forcible stream from a water-faucet will not wash away all the adherent pus.

The following are the chief points of pathological interests resulting from Dr. W. F. Whitney's examination of the kidney:

Somewhat enlarged; weight seventeen ounces; length, five inches. On section the parenchyma of the organ was largely replaced by cavities filled with a thick pus, communicating with the pelvis, the lining of which was thickened. The substance of the kidney that remained was firm, somewhat translucent. Microscopic examination showed this last to be composed almost entirely of fibrous tissue, in which were to be detected the remnants of tube and malpighian bodies. The kidney is one of chronic suppurative pyelo-nephritis. The search for tubercle bacilli was negative.

NOTE, April 28th.—Although the constitutional relief as shown by the fall of the temperature and pulse was satisfactory, the condition of the urine was not so; there continued to be about the same amount of pus as there was before the kidney had been removed. The appetite gradually failed and the patient died of exhaustion on April 14th. No autopsy could be obtained. Probably the other kidney was diseased as well as other organs. I think, however, that the course pursued in this case was consistent with the rational and sound practice of surgery.

J. H.

OVARIOTOMY IN A PATIENT EIGHTY-TWO YEARS AND FOUR MONTHS OF AGE.¹

BY JOHN HOMANS, M.D., BOSTON.

A LADY of the age above mentioned was referred to me through the kindness of Dr. Charles A. Dewey, of Rochester, N. Y. The patient was a widow, and had been the mother of five children, the youngest being forty-three years of age. On examination, I found a tumor of the left ovary, apparently without adhesions, in an active, healthy woman. The presence of the tumor had been known for about two years, and it had grown rapidly during the last six months. The lady said that if the tumor was likely to render the remainder of her life uncomfortable, she would like to have it removed.

On January 28, 1888, I removed the cyst, which proved to be one of the left ovary, somewhat multilocular and papillomatous. The fluid weighed thirteen pounds, and the solid portions one and three-quarter pounds.

On the sixth day the temperature rose to 100.5° , but subsided the next day, and the patient went home on March 2d. The oldest women on whom I had previously operated were each seventy-three years of age—one on November 19, 1881, and the other on December 26, 1883. Both of these ladies are now living in good health. Sir Spencer Wells's oldest case was seventy-one, and Dr. Keith's seventy-three. Mr. E. Matthews Owens, of Australia, has just operated successfully on a patient seventy-nine years and ten months of age. I could find no case as old as eighty years, but to make assurance doubly sure, I communicated with Dr. J. S. Billings, at Washington, and at his request Dr. Lorini made a thorough search, without finding any case recorded older than seventy-eight years of age.

WASHINGTON, March 16, 1888.

DEAR DOCTOR: Some days since, Dr. J. S. Billings handed me a letter with the request to look up the subject of ovariectomy in women of eighty years and over. Through the kindness of Dr. Robert Fletcher, I have been enabled

¹ Believed to be the oldest case on record.

to see the cards of the unpublished catalogues, numbering several thousand. I have looked up all the statistical tables obtainable, and consulted all the works on the subject in all languages, including Russian, Swedish, Hungarian, etc.; in a word, I have been over the subject most carefully, and have failed to find a single case recorded in any journal, pamphlet, or book.

I found quite a number of cases where the operation was done in women of seventy years and over; the oldest cases being two reported in Italy in women seventy-five years of age, and one in Russia, seventy-eight years of age. The result is a disappointing one to the seeker, but it will probably be satisfactory to the gentleman who ordered the work done. Yours very truly,

(Signed) R. LORINI.

It will be seen from the above that not a single case of ovariectomy in women eighty years of age or older has ever been reported, if Dr. Lorini's search has been exhaustive, and I think we may consider it so.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M.D., SECRETARY.

APRIL 9, 1888. DR. FRANCIS MINOT, President pro tem.

A LARGE SEQUESTERUM FROM THE TEMPORAL BONE.

DR. BRADFORD, presenting a patient, said: This is a case of caries of the temporal bone following disease of the ear. The patient was at the Children's Hospital. Dr. Morse was kind enough to see the patient with me, and we examined with a probe. The child was in a very marked degree of emaciation, and had a marked facial paralysis, with a large swelling on the cheek, as you will see. Dr. Morse examined it, and he found a mass of dead bone around the external ear. He thought the sequestrum was not loose, and advised waiting. About a month afterward, as the patient became very offensive indeed, I cut down again and removed a piece of bone. The bone was loose and I succeeded in getting it out, and I can mark on the skull here what was removed. It came as a sequestrum. It ran from the mastoid process, which, of course, is not developed in the child, up as far as nearly to the top of the squamous portion. It reached down in front to the articulation of the jaw. Inside, the depression for the lateral sinus could be seen, and also the depression for the internal carotid. It required no particular force to remove it, but a certain amount of careful manipulation was needed. There was no bleeding to speak of, and the patient has improved very much since then. There is a discharge from the other ear, and the child is entirely deaf.

There was a caries of the metacarpal bone which is improving. There is tuberculosis of the skin, and there is still slight swelling of the face. A piece of bone came out from the wound a short time ago, and I think there is still a small portion of dead bone, which I didn't completely remove. The child has doubled in weight, and has a voracious appetite now, and will recover entirely; of course, with a total deafness. I show the case because I think it is a very large sequestrum to have

been able to remove. There is very little to be seen now, except the depression.

PERMANGANATE OF POTASH IN RATTLESNAKE BITE.

DR. F. GORDON MORRILL said: I had an opportunity, about six weeks ago, of seeing the effect of the injection of permanganate of potash on a dog which was bitten by a large rattlesnake—that is, if there was any effect. I don't think there was. The snake struck the dog at 3.13, p.m. At 3.16 three grains of permanganate, dissolved in sixty minims of distilled water were injected in the track of the fang, and around its immediate vicinity.

Both sphincters were relaxed, probably from fright, shortly after the puppy was struck. The dog was about ten weeks old. Ten minutes after the injection it ceased struggling, but had no convulsions.

At 3.30 the pulse was 200; at 3.35, 220; at 3.40, 130; at 3.45, 148; at 3.50, 150; at 3.52, 150, and very weak. An instant afterward he died. At 3.45 the respiration was gasping, and it remained so until he died.

This single instance only proves that permanganate of potash, however promptly injected, does not always save the dog. A number of gentlemen who have shot in St. Augustine during the last few years have lost valuable dogs. A gentleman lost a very nice setter last winter. Last winter he had a dog struck, and injected ammonia, and the dog got well. This winter he had another dog struck, and injected the ammonia, and the dog died very shortly after the injection. He didn't inject the ammonia in the track of the wound, but it was injected anywhere.

DR. E. H. BRADFORD read a paper on

THE TREATMENT OF LATERAL CURVATURE.¹

DR. ABNER POST said: I have been exceedingly interested in the remarks of Dr. Bradford; and I am sorry that I have almost nothing to say. Nobody could expect me to add anything to what Dr. Bradford has said. During my experience at the Children's Hospital I came in contact with a very large number of cases of lateral curvature, and there was one thing that I succeeded in learning most decidedly, what I suppose we all knew before, the fact that they were most singularly difficult cases to manage. And Dr. Bradford has emphasized to-night the one fact in regard to them that I think we all should remember, that they cannot be treated as a class; that they cannot be measured and fitted for a brace as they would be for shoes; but that, in order to gain any real benefit from treatment, they must be followed up carefully and conscientiously, and the treatment must be adapted to each individual case. I think we all ought to be thankful to Dr. Bradford for emphasizing just that one fact as he has so clearly to us.

DR. H. W. CUSHING said: I can corroborate, in almost every particular, what Dr. Bradford has said. One who has not come in contact with these cases can hardly realize the apparent hopelessness of any method of treatment, especially in these fixed forms, and I think that unless one has been so situated, he cannot fully appreciate the value of the work Dr. Bradford has done during the past few years, or the amount of time and labor such an investigation necessitates. As has already been suggested, one point

¹ See page 445 of the Journal.

should be emphasized in regard to the treatment of these cases; namely, the importance of a full appreciation of their etiology and pathology.

Superincumbent weight is now quite generally accepted as the chief predisposing cause. The active cause is "faulty attitude" resulting from

(1) Diminished power of the dorsal muscles; for example, rapid growth, rachitis, etc.

(2) Contraction from empyema or caries of the transverse processes of the vertebra (a rare occurrence.)

(3) Tilting of the pelvis from any cause, either traumatic or pathological.

The results of such attitudes is a deviation in a lateral direction of the spine accompanied sooner or later by rotation in its vertical axis. A recognition of the individual causes producing these variations is exceedingly important in the selection of the course of treatment to which the subject is to be subjected. That is, the first thing to be decided is whether the curve is a so-called flexible curve, as represented by the first two sets of cases spoken of by Dr. Bradford, or whether it is a fixed curve, in which there is a distinct osseous change. The principles of treatment governing these are, that we shall first remove the superincumbent weight, which has been attempted by the recumbent position, and in a majority of cases, especially in adults, is hardly practicable; or by suspension, which as a rule, is merely an accessory to other methods of treatment. The remaining treatment consists first, in correcting the deformity, and second, in preventing its recurrence.

In flexible cases, for example, those frequently seen in children, where there has been an exceedingly rapid growth, or where they are due to the patients being habituated to certain positions by occupation or modes of life. For instance, a young person accustomed to carry a heavy child thus continually assumes a "faulty attitude." These are the cases that are especially benefited by postural treatment and by gymnastics. In the other class, where the deformity has become more fixed, these methods (simple posture and gymnastics) are to be reinforced by other means, and to this class of cases, this apparatus of Dr. Bradford seems to be especially adapted.

It certainly is a great improvement over the older apparatus, where the appliances consisted mainly of plaster jackets or fixed supports of a similar nature. It certainly is an apparatus which is a particularly national one, as it fulfills the exact indication which the pathology of the deformity demands. As Dr. Bradford says, the old "fixed curve," where there has been a distinct osseous change, cannot at present be affected by treatment. Some other methods of treatment have been tried, which, in a certain number of cases, have caused a partial success. I think Dr. Bradford alluded to one, where the patient wears a raised shoe. Also, the method of Lorenz has caused improvement in a certain class of cases.

Perhaps it will be possible, if this line of investigation is carried out more fully, to eventually obtain some means by which these fixed curves also may be relieved. The various forms of talipes formerly considered as wholly incurable, are now treated with surprising success, and perhaps in the same way, by methods of treatment as thus suggested, these lateral curves, now the most difficult problem in orthopedic surgery, may be as successfully manipulated.

DR. JOHN HOMANS showed

AN EXTIRPATED KIDNEY.*

DR. F. C. SHATTUCK showed the

PLASMODIUM MALARIAE.†

DR. F. C. MORRILL said: There is one fact which the Society may not be familiar with, that in all Southern cities there is an ordinance against turning over the ground in summer. They don't allow the ground to be turned over during certain months, or, if they do, they throw lime upon each spadeful of earth that is thrown up. In that way, they suppose that they prevent the occurrence of malaria in the neighborhood.

DR. FRANCIS MINOT: There is no doubt about the occurrence in the freshly turned up dirt. New streets which are put through in some place, are filled with malaria.

DR. MORRILL: They don't use the lime there.

DR. MINOT: It is impossible, in so great an undertaking. The workmen suffer very much, and also the people in the neighborhood.

THE SEVENTH CONGRESS OF INTERNAL MEDICINE HELD AT WIESBADEN, GERMANY, APRIL 9-12, 1888.

THE DISCUSSION ON ALCOHOL AS A THERAPEUTIC REMEDY.

DR. C. BINZ, of Bonn, Referee said: From remote antiquity, alcohol, or wine, has been regarded as medicinal. The Middle Ages called spirit of wine, *aqua vitæ*, *aqua juventutis*, *eau de vie*, *eau de jeunesse*, etc. In the seventeenth and eighteenth centuries, alcohol was recommended in febrile states. Still later and in our own day, as many of us well remember, its therapeutic use went out of fashion, and it was considered almost an indictable offence to prescribe even champagne for the sick. As late as 1865, Carl Otto Weber, our eminent surgeon, in a popular treatise denounced the use of wine in fevers.

The reaction against this extreme view commenced in England, and went so far, that even to-day we are obliged to sound the note of caution against the abuse of alcohol as a therapeutic agent.

Alcohol possesses three properties of which we avail ourselves in therapeutics; it is an excitant, an aliment and an antipyretic.

(1) The excitant action of alcohol cannot be called in question. After the experiments of Claude Bernard, those of Parkes have proved that moderate doses of alcohol under the form of cognac, Bordeaux wine, etc., raise the action of the left ventricle. Experiments made in my laboratory have given absolute confirmation to this view; small doses raise the blood-pressure, large doses lower it. The activity of respiration is also enhanced by alcohol in small doses. Zuntz has found an average augmentation of 9%, my assistant a mean of 7%, and with good sparkling Rhine wine, 15% even. This increase, observed in the healthy man, is probably much greater still in patients in collapse.

Experiments oblige us to admit in theory that alco-

* See page 453 of the Journal.

† See page 450 of the Journal.

hol produces a retardation of digestion. But I believe that the quantity administered plays here a preponderant rôle, for we find in practice that alcohol is remedial in slight gastric ailments.

(2) The nutritive quality of alcohol cannot be constituted by any property which it possesses of tissue reparation; it is a respiratory aliment. The nutritive value of alcohol, is, however, indisputable. Alcohol does not (as has been affirmed) pass through the organism without undergoing any alteration. It does not leave the economy in its totality and unchanged. My experiments have shown that only 2.9 % of alcohol administered to a healthy man is eliminated as alcohol; 1.17 % is excreted by the kidneys; 1.60 % by the lungs; 0.14 % by the skin; all the rest, that is, 97.9 % is burned in the organism. Now the production of heat is a vital condition. A quart of good Rhine wine produces as much heat, that is, possesses as much respiratory nutritive value, as five or six tablespoonfuls of good oil, and is easier of assimilation.

The experiments of Zuntz and Goeppert prove that moderate doses of alcohol hardly modify at all in a healthy man the absorption of oxygen, and carbonic acid production. The alcohol, then, has simply produced an augmentation of heat. These medium doses economize force and matter, because they diminish from 6 to 7 % the decomposition of albumen. It is true that large doses accelerate the decomposition of this proximate principle (and this is an argument for moderation); and it is also true that the organism under disease obeys other conditions than the organism in a state of health, and patients in prostration or collapse can ingest large quantities of alcoholic stimulants without manifesting any symptoms of acute intoxication. Moreover, alcohol, when exhibited for therapeutic purposes, is given in small doses frequently repeated.

(3) I have mentioned as the third property of alcohol that of lowering the temperature. This may seem paradoxical, as alcohol is popularly said to be "heating," but just here there is a little confusion. Alcohol produces a feeling of comfort. It dilates the vessels of the stomach and skin. This dilatation is perceived under the form of heat, and this is the reason why alcohol is called "heating." I have collected 126 thermometrical observations, and have found that alcohol in small quantity exercises no influence on the temperature of the healthy adult; that medium quantities lower the temperature from 0.3° to 0.6°, and that large quantities produce a fall of several degrees during several hours.

One of my experiments was to produce an intense fever in two dogs by the injection of putrid substances. One of these dogs was treated by alcohol, while the other was left without treatment. In the dog that was dosed with alcohol the temperature fell from 40.6° to 39°. As soon as the temperature rose again alcohol was again administered with the same effect. Finally the dog got well. The other dog that got no alcohol died of putrid intoxication.

An advantage which is not to be lightly thought of in practice is that alcohol may be administered under different forms.

In order well to define our position as physicians in our relation to the temperance and prohibition societies, I would express myself thus: All that I have said pertains to the sick. The healthy man has no

need of alcohol, and if he indulges in ardent spirits he does this solely for his own pleasure and at his own risk. I place alongside of the whiskey nuisance the beer nuisance. The habit of taking alcoholic stimulants apart from meals is a public evil, from a sanitary, economic and intellectual point of view. The inveterate beer drinker is as much under the dominion of alcohol as the brandy drinker, and the greater sinner of the two.

DR. VON JAKSCH, of Gratz, Co-referee, continued the discussion: Dr. Binz has considered the qualities of alcohol from a physiological point of view; I shall speak only of its therapeutic applications. I have endeavored, in order more fully to understand its real value as a medicine, to apply the tests of clinical experimentation by giving alcohol under the form of wine or cognac, and with due precautions, to persons not accustomed to the use of alcoholic stimulants, as children.

Small quantities of alcoholic beverages (one to three grammes) produce in children, first, a diminution in the pulse. This is followed immediately by an augmentation; the pulse is not only quickened, but strengthened. Must we conclude from this that we are justified in utilizing this excitant quality of alcohol in all diseases without distinction? Assuredly not. It is *weakness of the heart* in affections accompanied by intense febrile manifestations that calls for alcohol; in cases of collapse and traumatic hemorrhages (as in puerperal women), alcohol often saves life.

As for the second quality of alcohol, its nutritive value, the opinions of physiologists may differ, but to the sick person this quality is a settled fact, and the clinical observer has no doubts regarding it. Thus far, experiments have been largely made on healthy adult individuals more or less accustomed to alcohol; this is why I have undertaken similar experiments with sick children. The result has always been a notable diminution in the quantity of urea excreted.

As for the special applications of alcohol, its use in diphtheria, recommended as far back as 1806 by Jastus, seems to me to be underrated. I cannot say that alcohol is a specific in diphtheria, but this agent, administered in large doses at the onset of the disease, seems to me to constitute the best treatment of this affection.

In typhoid fever, by the side of cold baths, alcohol has a great value. It acts as an excitant and as a food. The functions are raised, and the patients feel better. But precisely in these cases, where Stokes was the first to recommend alcohol in 1839, a frightful abuse has been made of this agent, and I need only instance that English physician whose patient consumed during an attack of typhoid fever twenty-one quarts of brandy and twenty-four bottles of champagne. By such treatment you can doubtless cure typhoid fever, but you are almost certain to make your patient an inebriate.

In septic poisoning, alcohol is *par excellence* the remedy, and simply indispensable.

The last quality of alcohol, its antipyretic action, has been proved by the clinical experimentation of Riegel, of Giessen. But I do not make much account of this quality, all the non-specific antipyretics having little value clinically.

As for the influence of alcohol (when administered with therapeutic intent, be it understood) on diges-

tion, it certainly does not impair this function, while, at the same time, this influence can hardly be favorable, except in cases which present no grave anatomical alterations of the digestive passages.

Alcohol possesses still a hypnotic action which does not manifest itself in feverish patients, but in the neurosthenic. It is true that in recommending it for such patients we must use special precautions, and take into account individual temperaments and idiosyncrasies. Beer acts better as a hypnotic; I cannot say whether this effect is due to the alcohol alone, or in part to other elements which enter into the composition of beer.

As for the form under which to administer alcohol, I would say that when you wish to avail yourself of its excitant quality, you should employ the stronger (distilled) liquors; when you wish to utilize its nutritive quality, you should give the light (white or red wines; when you desire a hypnotic effect, it is to beer that you should give the preference.

Dr. W. H. Erb, of Heidelberg: Alcohol is doubtless a therapeutic remedy which nobody would wish to be deprived of, but the contraindications should be well understood. The gentlemen who have just spoken have told you of the immediate effects of alcohol, but there is still another, a secondary effect, the depressant effect, commonly experienced the morning after copious libations. Is it possible that this effect is not felt also by patients to whom alcohol has been freely administered, especially by those who are little, if at all, used to stimulants, such as women and children? It seems to me very necessary to have in mind this possibility.

When a powerful stimulation is indicated, instead of alcohol alone, I prefer alcohol associated with some other stimulants, as musk and camphor.

Another question presents itself to my mind — may not alcohol be deleterious in certain diseases by irritating the organs concerned, in its elimination (the lung in cases of pneumonia, the kidneys in nephritis)? Observations are wanting on this point; but it is well to call the attention of practitioners to it.

The unhappy consequences of the prolonged usage of ardent spirits by well persons may also be experienced when alcohol is given with therapeutic intent. I need only remind you of instances of the kind sometimes occurring in phthisis. In giving utterance to these few remarks, I do not wish to be misunderstood. I am not an opponent of alcohol, but prescribe it often.

Dr. MERKEL, of Nuremberg: In pneumonia, alcohol has given me good results, especially in averting asthenia and collapse; its prolonged use, however, seems to me detrimental. I fear that our young practitioners are inclined to give too large quantities of alcoholic stimulants at the onset of diseases, little care, choice or judgment being exercised. It would be well if clinical teachers would put their pupils on their guard against this abuse.

Dr. H. NOTHNAGEL, of Jena: I have heard the appeal to clinicians against the abuses of alcohol. But what remedy is there which does not give occasion to abuses? Has this not been the case with electrotherapy, hydrotherapy, iodide of potassium, antipyrine, etc., which have each and severally been administered for all affections imaginable?

Permit me to point out a different kind of abuse, which cannot be too strongly condemned; I refer to

the habit of giving wine or beer to children. In certain classes of society, children from two years old and upward, are regularly dosed with these liquors. This practice is an abominable one. The healthy child has no need of excitants, and the habit which I am denouncing destroys, or at least enfeebles, for a whole lifetime the nervous resistance of the organism.

Dr. T. JUERGENSEN, of Tübingen: Perhaps the reproach of Dr. Merkel is made in part to me, since for twenty years or more I have made use of wine as a remedy. In basing myself on this experience, I think that I can answer Dr. Erb's questions. The secondary depressing effects which make themselves felt in the well man — do they also exist in the feverish person? I believe myself warranted in saying no. Moreover, I have never seen any irritation of the organs by which alcohol is eliminated; we must not forget, also, that it passes out of the body in a very dilute state. Lastly, chronic alcoholism does not follow the therapeutic usage of alcohol by fever patients, who are generally only to glad to give up the use of spirits when allowed to do so.

Dr. RUCHLE, of Bonn: I have also observed certain deplorable effects from the administration of alcohol in acute diseases; for example, acute alcoholic delirium in cases of pneumonia. In chronic affections of the myocardium, alcohol is serviceable along with digitalis, in maintaining the vigor of the heart.

Dr. FINKLER, of Bonn: A word only respecting the antipyretic action of alcohol. The stronger antipyretics, antipyrine, antifebrin, etc., have spoiled us for the weaker ones. At the same time, is this sudden and considerable fall of the temperature always desirable? Quinine and alcohol do not act so quickly, it is true, but their effect is more lasting, and they also have certainly an antiparasitic action.

Dr. VON JAKSCH: I agree with Dr. Erb that alcohol is contraindicated in acute affections of the brain and kidneys. As regards the question of chronic alcoholism consecutive to the therapeutic employ of alcohol, I cannot accept the opinion of Dr. Juergensen, without reserve.

— Many of the sorts of food consumed in the far East are certainly not appetizing in contemplation; though occidental gourmands do not altogether avoid morbid specimens in their dietary; as, for instance, is the fatty livers of the Strasburg geese. The Medical Press say of the legendary edible birds-nests of the Chinese that they are the product of the salivary secretion of these birds, and the most *recherché* of them contain a certain proportion of blood. This variety is extremely rare, and the blood is said to be due to a malady resembling phthisis, to which swallows are liable, and which occasions sanguineous expectoration. They are only obtainable in the spring. Local tradition affirms that the birds which produce these delicacies never live more than two winters, and ultimately die of exhaustion. Chinese doctors attribute numerous hygienic and health-preserving qualities to these nests as an article of diet. They are said to be sovereign against pulmonary affections, asthma, colic, and "feeling bad" generally. The costliness and rarity of the article are probably accountable for the esteem in which it is held.

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EXCESSES AND ABUSES IN ATHLETIC SPORTS.

At the last meeting of the Board of Overseers of Harvard College, a Committee of five of their number, previously appointed to consider the subject of the excesses and abuses in athletic sports at the University, rendered their report. There was a majority and a minority report, the former signed by four members of the Committee, the latter by Dr. H. P. Walcott alone.

The following closing sentences of the majority report give the substance of the conclusions reached and the form of the recommendations made:

"Your Committee are satisfied that a certain portion of the students devote altogether too much time to athletic sports; that this excessive interest is caused by the intercollegiate contests; that these contests do not tend to promote a generally diffused interest in athletic exercise, but rather to discourage it; that they interfere very seriously with the college work; and that they have an unhealthy moral influence on the students in the ways that have been pointed out. No good result of these contests has been suggested to counterbalance these arguments against them, in which no account is taken of the physical dangers attending them. The committee feel that ample opportunities for all reasonable competition can be found among the members of the university, whose undergraduates alone number more than one thousand, and that the measures which they recommend will be likely to promote a more general and more reasonable interest in athletic exercise than is possible under existing conditions. The evil moral, and physical results which attend all intercollegiate contests will, in a less degree only, attend any, and it is invidious to select where each has so many friends.

"The majority of the committee have reached the conclusion that to remedy the existing evils it is necessary to prohibit all intercollegiate contests and to place the supervision of athletic exercises in the university itself under the control of a committee in which the faculty shall have a stronger influence.

"They therefore recommend the adoption of the following votes:

"*Voted*, That the faculty be requested to prohibit any undergraduates from taking part in any athletic contest with the students of any other college or with any organization not belonging to the university during the college year.

"*Voted*, That the existing committee on athletics should be increased from five to seven by adding thereto one member of the faculty and one undergraduate, and that this committee should be given the entire supervision and control of all athletic exercises within the precincts of the university, subject to the authority of the faculty."

"We give the full text of the very much briefer minority report, signed by Dr. Walcott, who was for

several years a member of the Athletic Committee of the College, and as such had ample opportunity for direct personal observation of the men participating in the preliminary training and of the contests themselves:

"From such information as he has been able to obtain, he does not believe that excesses and abuses in athletic sports exist to the degree popularly represented; nor does he believe that the abuses which actually do exist are limited to the intercollegiate contests, but may and do appear at the athletic exhibitions which take place within the precincts of the college. He is confident that the best remedy for these excesses lies in intelligent control, not in prohibition; and that this control can be more efficiently exercised by a body which contains a representation of the students than by immediate prohibition on the part of the governing bodies of the university. He believes that the athletic committee of the college, as at present organized, has exercised a salutary and restraining influence; and agrees with the majority of the committee that an enlargement of the former body in the manner designated by your committee would be advantageous. In justice to the athletic committee he desires to record his own experience while a member of it—that the undergraduate members have, almost without exception, showed a spirit of wisdom and self-restraint worthy of the highest praise.

"Under these circumstances he is very reluctant to recommend any measure which would be held by that committee to be opposed to the best interests for athletic exercises. For this reason, as well as from his own convictions, he does not join in recommending the abolition of all the intercollegiate contests, but does advise that they be regulated in the following manner: "(1) That the formal intercollegiate contests be limited to Yale, and that university teams be alone permitted to take part in them.

"(2) That these contests take place only at New Haven, Cambridge, or such other New England city or town as the athletic committee may from time to time designate."

According to information furnished the Committee by Dr. Sargent, Chairman of the College Committee on Athletics, which was established some years ago by the faculty, during the last College year there were ninety-four athletic contests of different kinds, thirty-four of which took place out of Cambridge, as is shown by the following table:

	1886-87		No. played		Out of town		No. engaged		Out of town		On Saturday		Out of town not on Saturday		Total number participating in practice, more or less	
Athletic	8	1	80	35	6	0									60	
Baseball	21	7	15	15	8	3									45	
Boating	4	2	40	11	1	1									55	
Football	14	5	30	30	7	2									50	
Lacrosse	11	3	15	15	4	3									25	
Tennis	3	1	50	10												
Cricket	4	4	15	15	4	0									25	
Shooting	6	1	10	10	3	1									26	
Freshman baseball	14	5	15	15	8	1									25	
Freshman boating	2	1	10	10		1									25	
Freshman football	4	4	15	15	2	2									45	
Freshman lacrosse	3		15												15	

Of these, fifty were intercollegiate contests, and twenty-six were with amateur athletic organizations not connected with any college. The other eighteen were among the students

themselves and of these, seven were of the class designated as "athletic" in the table, which includes "such sports as are given in the gymnasium and on the track and grounds in preparation for the Mott Haven games," five were freshmen baseball games, two were tennis matches, one was a lacrosse match, and the remaining three were boat races. Of these contests, the football games all occur between the beginning of the year and the first of December, while the others, except the contests in the gymnasium, mainly occur in the spring and early summer.

It is obvious that the subject with which the Overseers' Committee has attempted to grapple is a very complex one. There has been a constantly increasing tendency during the last twenty-five or thirty years towards the extinction at our colleges and universities of the weak-eyed, shallow-chested, anæmic-faced, shambling scholar, of his ways and works, and towards the physical reformation of such progeny as he fortuitously succeeded in leaving behind him. In the course of this desirable process it is not unlikely that an opposite extreme has at last been reached, for it is useless to deny that as a people we do things in extremes. The athletic contests are probably too numerous, the anticipation of such opportunities occupies a disproportionate place in the minds of many school-boys, and the realization of such anticipation in practice and participation consumes a disproportionate amount of the thought and time of not a few undergraduates. Occasionally a man is injured physically, though very rarely seriously. But granted this, it still seems to us that the middle course, as recommended by Dr. Walcott, is the safe one—that an intelligent control is possible which should make prohibition unnecessary. A consideration of present evils is incomplete which does not take into careful account the evils replaced and the evils ready to claim succession. There is and will be a growing class of young men in our country with whom study is not and need not be a primary object of the college course. Such a class may or may not be a desirable result of our social development, but it exists and must be recognized. For such, athletic sports, even with their attendant excitements, offer almost a salvation. That athletic sports should flourish there must be the stimulus of rivalry, of competition.

On the other hand, the college athlete is by no manner of means necessarily a neglecter of books,—as was shown some years ago in an annual report of the President of the University—and when he does study, we believe he studies to unusual advantage. His presence in the gymnasium attracts others to it, and he himself is quite convinced—probably not without reason—that his presence in the college attracts others to it. The athletic undergraduate may perhaps be regarded as too prejudiced to view fairly the questions involved, even if his judgment were sufficiently mature to enable him to do so fully, and with him the average first impression probably will be that the Overseers' Committee seeks to deal a death-blow at the prosperity of the College and the cause of liberal education; that the elective system is robbed of the perfect flower of its largest usefulness when confined to the class and lecture rooms—a view,

the sober second thought, of which he is capable, would probably modify.

We are convinced that there is enough sound common sense, good judgment, and intelligent observation among recent graduates who have been interested in athletic pursuits to make an expression of their views as to the existence of excesses and abuses and the best remedies for such of very positive value, and we hope the present discussion, aroused by the report on which we comment, will not be closed without a well-considered expression of opinion on the part of both the recent and the under-graduates.

ANTIPYRINE AND ANTIFEBRIN AS NERVOUS SEDATIVES; COMPARISON WITH SOLANIN.

At the recent meeting of the French Association for the Advancement of Sciences (March 20), Sarda de Montpellier, read a paper with the above title. His study was based on a hundred and thirty observations. He had found antipyrine to be especially useful in acute rheumatism, in migraine, in neuralgias of recent date, and in all pains of a paroxysmal character. In all such cases, it had proved its superiority to antifebrin. On the other hand, antifebrin had been equally beneficial in the pains of locomotor ataxia and in chronic rheumatism; in fact, in the latter affection and in all cases of pain of long-standing, antifebrin had shown itself to be the better analgesic.

In combating phenomena of motor excitation, epileptoid trepidation, exaggerated reflexes, tremblings, antipyrine has been of but little benefit; it has given negative results in paralysis agitans, tic douloureux, and has had but little effect on the reflex spasms (hiccough, eructations, etc.) of the hysterical. In these cases, acetanilide has given better results, except in paralysis agitans, in which it fails altogether. These two medicaments are very rarely followed by unpleasant symptoms, such as vomiting, exanthematous rashes, profuse sweatings.

Acetanilide is better borne by the stomach than antipyrine. Solanin is a very useful nervine medication whenever one wishes to obtain a depressant action on the bulbous or spinal cord. It proves a paralyzer to the motor nerves, and an analgesic to the sensory. Inefficacious in acute articular rheumatism, solanin succeeds very well in muscular rheumatism; it acts as well as acetanilide in allaying the pains attending ulcer of the stomach, as these observations show.

It is much superior to both antipyrine and antifebrin in the treatment of old and rebellious sciaticas, and in obstinate neuritis. Its influence is as marked as that of the other medicaments in calming the pains of locomotor ataxia. But it is chiefly as a moderator of motor excitation, that solanin is destined to do good service. In two cases of chronic myelitis with "douleurs fulgurantes" and epileptoid trepidation, the therapeutic effects were remarkably rapid and constant; the pains and the trepidation ceased. In a case of disseminated sclerosis with trembling of the

left superior member, the results were more remarkable still. After four days of treatment, the trembling had almost ceased and on the sixth day it was gone altogether.

In paralysis agitans, in tic douloureux of the face, in post-hemiplegic hemiathetosis, the results were less pronounced but too small doses may have been given. At any rate, further trial of this remedy in these diseased conditions is recommended. The average dose is twenty-five to thirty centigrammes per day, in divided doses. This medicament always is well tolerated.

In the discussion which followed the paper of Sarda, Professor Grasset remarked that solanin is especially adapted to combat the medullary symptoms produced by lesion of the lateral columns of the spinal cord. In epileptoid trepidation notably, and in the trembling of *sclerose en plaques*, solanin works wonders. The effects are, perhaps, not very lasting, but tolerance is so complete that one can return to it from time to time and give the patient a relief that he cannot so well obtain from any other remedy.

One serious objection to solanin is its cost, which is ten francs per gramme on the Continent.

THE UTILIZATION OF DISEASE FOR THE DESTRUCTION OF RABBITS IN AUSTRALIA.

THE suggestion of the use of disease for the destruction of rabbits in Australia is evidently exciting great interest in that distant colony of Great Britain, and the question of the means that shall be adopted for its supervision is discussed in an interesting article in the *Australasian Medical Gazette*. "Rabbits are a great fact," the editor remarks, "and failing their destruction, ruin to Australia is imminent." The Minister for Lands in New South Wales, in whose department the administration of matters relating to rabbits has recently been placed, has asked the governments of the other colonies to coöperate with the mother colony in the appointment of a Commission to advise on the subject. There is some doubt as to the proposed constitution of this Commission, and the *Gazette* believes that the most practicable and effective body would be constituted as follows: A human pathologist recommended by the council of the Royal College of Physicians of London; a veterinary surgeon appointed by the governing body of the Royal Veterinary College of London; a pupil of Pasteur, and one educated under Drs. Virchow and Koch. A body such as this would be perfectly competent, and would be able to make its experiments and tests personally in the districts where the disease, if used at all, will have to be employed, and its conclusions would everywhere be received with respect.

The inquiry is a perfectly new departure, in which there is no experience to guide, and it is the duty of the governments concerned to create an experience by experiments which will enable them to decide what had best be done in the interests of the colonies. "The subject is no trivial one, and it is one in which

thorough inquiry can be shirked no longer. A decision will have to be come to, for disease will be used; in fact, is being used for rabbit destruction, and unless some exact knowledge is created, the people of Australia will have all the risk and but a small proportion of the benefit they would have were it carried on under supervision, with an accurate record of the result."

The whole matter is not merely an exceedingly curious one to us at this distance, but such wholesale experiments with disease ought to give not only interesting, but instructive data. If it is possible to destroy in the manner contemplated a colony of rabbits, other governments may interest themselves in the destruction in a similar manner of other pests; and it requires no great stretch of imagination to see disease called in to rid the earth of such pests as the mosquitoes and black flies that render uninhabitable such large portions of territory.

TREATMENT OF POLYURIA BY ANTIPYRINE.

At a late meeting of the Société de Thérapeutique, Paris, Dr. Huchard read a communication, in which he vaunted the good effects of antipyrine in polyuria of nervous origin. At a subsequent meeting, Dujardin-Beaumetz reported the result of his treatment of three cases of saccharine diabetes by half-drachm doses of antipyrine; in all, the quantity of urine under the administration of antipyrine was reduced from six litres to three litres per day. Serreol said that he also tried the same remedy in a case of diabetes with excessive polyuria in a child, but without any favorable result.

MEDICAL NOTES.

— Small-pox is extremely prevalent in Philadelphia, and it seems not unlikely that the country at large may be on the verge of a serious epidemic. The disease is reported from centres of population both in the West and the East. Its introduction and distribution are probably due to commercial intercourse with Cuba, and immigration from Italy.

— The *Northwestern Lancet*, commenting on our recent editorial remarks on a work written for the laity on the management of pregnancy, in which all women are encouraged in expecting to secure a painless labor, provided they follow a certain regimen, says: "The regimen referred to consists principally in the avoidance of 'bone-forming foods,' so-called, a most pernicious piece of advice, which, if rigorously followed, may indeed make the labor easier, but at the expense of the child, which is likely to be puny and rachitic. We have seen within a year such a case, where the mother, after reading some such work as 'Tokology,' lived entirely upon fruit and vegetables during gestation. The child's skull was as soft and thin as parchment; it was ill-developed, and the rosary of rickets was well marked. It perished of acute bronchitis after a miserable existence of a few

weeks. An older child which had not been experimented upon was healthy and vigorous. These cases are not rare, and such works as 'Tokology' should be interdicted."

BOSTON AND NEW ENGLAND.

— The Boston City Government has appropriated a sum of money to build the new out-patient building at the City Hospital, and also a sum for the publication of another volume of the Hospital Report. The Hospital now has \$35,000 for an out-patient building.

— From the "Annual Report of the Lowell Hospital Association," January 1, 1888, we learn that a training school for nurses has been established in the Hospital, and that a course of twenty-four lectures on nursing was provided during the past winter.

NEW YORK.

A DEATH FROM ANTHRAX.

— A man forty-five years of age died at the New York Hospital a few days ago of anthrax, contracted while handling hides in a wholesale leather establishment where he worked. The symptoms, which were attributed by the patient to the bite of an insect which he supposed to have come from the hides, first appeared three days before admission to the hospital, and the swelling in the neck became so great that it was necessary to perform tracheotomy on account of the danger of suffocation. It is thought that a stiffened portion of the hide which he was carrying on his shoulder scratched his neck, and thus inoculated him with the anthrax bacillus. At the autopsy abundant evidence was found of the presence of malignant œdema, and specimens of the blood and tissues were secured for the purpose of cultivating the anthrax bacillus, if possible.

— It is certainly remarkable that the deaths of two such eminent specialists in ophthalmology and otology as Drs. Agnew and Loring, who were for a number of years associated in practice, should have occurred so near together, and the loss to the profession and the community will be a serious one.

PHILADELPHIA.

— The alumni and students of the University of Pennsylvania, on the 24th ult., held an Agnew Jubilee in honor of the completion of half a century of active practice of medicine by their veteran professor of surgery. Addresses were made by Provost Pepper and Prof. S. W. Gross, and a jewel was presented to Professor Agnew, who made a fitting response. Music was supplied by the Glee Club and the band of the University. A number of invited guests were present.

— By an odd coincidence, a celebration was held on the 27th, during the same week, of the completion of sixty years' active practice of Dr. Hiram Corson, at his home at Plymouth, Pa. The event was honored by a dinner by the Montgomery County Medical Society, to which some of the older friends of Dr. Corson were invited.

Miscellany.

AGARICINE.

THE *Therapeutic Gazette* calls attention to a remedy which has been used in Philadelphia for the last two years with alleged extraordinary success by some German physicians, in the treatment of colliquative sweats. In phthisis and similar exhaustive diseases, belladonna will usually arrest sweating with certainty, but the dryness of the mouth which it produces is always very disagreeable to patients, and in some cases to it is superadded the unrest or nervous excitement, which entirely forbids the further employment of the mydriatic. Sulphuric and gallic acids often fail. The remedy that we especially allude is agaricine, the powdered *Agaricus alba*, or ordinary European agaric, a peculiar toadstool or fungus which grows upon the European larch. There is prepared an impure alcoholic extract of this fungus, which is sold under the name *agaricine*, and has been very highly praised by both English and German physicians. (See *Prag. Med. Wochen.*, 1884, Vol. ix, p. 305, and *Centralb. Klin. Med.*, 1884, Vol. v, p. 89). The dose of this extract is one grain to one and one-half grains, although it is affirmed larger quantities can be given without detriment. The effects are said to be immediate, without disagreeable accompaniments or sequels.

OBITUARY.—EDWARD GREELY LORING, M.D.

It is doubtful whether the decease of any other member of the medical profession whose practice had been entirely outside of Boston could have caused such a shock to so large a circle of relatives, friends and colleagues here as did the sudden death of Dr. E. G. Loring, which occurred in New York on Monday, April 23d, in his fifty-first year. He was born in Boston in 1837, being the second son of Judge E. G. Loring, his mother having been Miss Harriet Boott. His boyhood was passed in Boston, and at Winthrop, where his father has a summer residence. It was at Winthrop that, while a mere boy, his great fondness for and practical skill in boating was developed, which he retained to his last day. He was a pupil of Mr. Gardiner at the Boston Latin School, and in 1857 entered Harvard College, in the class of 1861. His father—who had moved to Cambridge after his appointment to a professorship in the Harvard Law School, having been removed from his position as Judge of Probate by Governor Banks, after his decision on the case of the fugitive slave Anthony Burns, which came before him as United States Commissioner,—was appointed Judge of the United States Court of Claims, by Buchanan, and moved with his family to Washington.

Loring left college at the end of his sophomore year (1859) and went abroad. He began his medical studies in Florence, and passed three years between Florence and Pisa, following the lectures and Hospital services, and having also the private instruction of Dr. Grysanovski, a German physician of great ability. At the University of Pisa he especially devoted himself to anatomy, under Professor Duranti, one of the best known anatomical teachers of that time, and who will be remembered as delegate from Rome to the International Congress at Washington last summer. In 1862 Loring returned to Boston, and after two years' work at the Harvard Medical School, took his degree in 1864. The following year he passed in Boston perfecting himself in the special branch of the profession to which he had decided to devote himself. He obtained the position of ophthalmic externe at the City Hos-

pital, under Dr. H. W. Williams, and assiduously followed the service of the surgeons at the Massachusetts Eye and Ear Infirmary, especially that of his friend Dr. Hasket Derby, of which he took charge during a short visit by Dr. Derby to Europe. In 1865 he married a daughter of James Jackson Jarvis, and established himself in Baltimore, where his professional career opened very auspiciously. Having, however, the opportunity to enter a professional co-partnership with Dr. Agnew, in New York, he did so in 1866. Since the dissolution of this partnership he has continued his practice in New York. His wife died some years ago, and he married, in 1886, a Miss Swift. On Monday, the 23d of April, he left his house between 2 and 3 P.M., apparently perfectly well, although it appears that he had for two days spoken of a slight pain in his chest, which he attributed to indigestion. At about 6 P.M., while standing on the corner of Park Avenue and a street up which lie, in all probability, had come, after a visit to his yacht, in the building and fitting out of which he was much interested, he was seen to stagger, grasp at a lamp-post, and fall over backwards. A policeman who saw him fall found him just breathing, but life had departed before he had been moved.

Dr. Loring will be best known professionally by his improvement of the ophthalmoscope, of which one of his colleagues and friends, writes: "It may justly be said, that for elegance of construction, easiness of management and compact usefulness, its equal remains to be found. It is emphatically the best ophthalmoscope in use here or abroad. I was at the Ophthalmic Congress in Milan (1880), when he exhibited it, and the room rang with applause after his demonstration was concluded."

He contributed several articles to medical literature

chiefly on subjects connected with ophthalmic physics, which have been published in the transactions of the Ophthalmological Society, The American, New York and Boston Medical Journals, the Medical Record, etc. The first volume of his "Text Book of Ophthalmoscopy," was published in 1886, by Appleton, New York, and he had not yet completed the second volume. He had served as surgeon at the Brooklyn Eye and Ear, and was one of the original staff of the Manhattan Eye and Ear Hospitals at the time of his death was surgeon at the New York Eye and Ear Infirmary. He was a member of the New York and American Ophthalmological Societies.

A notice of Dr. Loring, even in a medical journal, would not be complete, which only referred to his professional standing, as his individual character was such as to make him universally liked and esteemed. Although modest, refined, and even sensitive by nature, he was strong in his convictions of right and wrong, and held to them, and he had a most uncompromising scorn for all sham and pretence in professional as well as private life. Most social, in the best sense of the term, he was always a favorite with both the men and women with whom he was brought in contact. As a boy he was devoted to certain out-door sports, in all of which he excelled, such as rowing, skating, shooting, sailing, etc. His love for the salt water clung to him to the end, as he was overseeing the furnishing of a yacht, the third that he had built, in which he was looking forward to passing some weeks of the coming summer, as he had several of the past ones, cruising along our coast with his brother, Dr. F. B. Loring, of Washington. In his domestic relations he was most lovable, and to his widow, aged parents, brother and sisters, the loss will be irreplaceable.

REPORTED MORTALITY FOR THE WEEK ENDING APRIL 21, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Typhoid Fever.	Diph. & Croup.	Scarlet Fever.
New York	1,526,081	734	295	20.16	—	.54	6.81	4.36
Philadelphia	1,016,768	371	98	8.36	12.67	2.16	2.43	.27
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,155	146	60	17.12	8.50	2.74	4.79	.68
Boston	407,024	185	55	13.51	20.00	2.16	7.57	1.08
New Orleans	248,000	—	—	—	—	—	—	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	210,000	97	32	16.49	19.59	2.06	2.06	—
Pittsburgh	210,000	64	25	14.06	26.56	—	6.25	6.56
Milwaukee	200,000	62	32	13.04	10.14	4.35	1.45	1.45
Providence	125,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	21	4	14.28	—	—	—	—
Charleston	60,145	25	8	4.00	16.00	—	—	—
Portland	40,000	17	2	—	11.76	—	—	—
Worcester	76,328	22	10	22.73	22.73	—	9.09	—
Lowell	69,550	39	14	12.32	17.56	7.69	—	—
Cambridge	64,079	23	5	3.63	6.06	—	—	—
Fall River	61,203	33	6	—	17.39	—	—	—
Lynn	51,467	10	—	10.00	20.00	—	—	—
Lawrence	40,175	15	4	—	20.00	—	—	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36,308	19	6	5.26	10.53	—	5.26	—
Somerville	33,507	16	1	12.50	6.25	—	6.25	6.25
Holyoke	32,887	12	5	8.33	—	8.33	—	—
Salem	28,781	13	4	—	15.38	—	—	—
Chelsea	27,552	11	4	9.09	18.18	—	9.09	—
Taunton	24,979	9	2	11.11	22.22	—	—	11.11
Haverhill	24,796	5	—	—	20.00	—	—	—
Glooucester	24,784	13	5	23.77	9.09	—	23.77	—
Brockton	23,487	11	4	—	—	—	—	—
Newton	21,105	9	2	11.11	33.33	—	—	—
Malden	18,932	10	—	—	20.00	—	—	—
Fitchburg	17,534	7	3	—	28.57	—	—	—
Waltham	16,651	7	2	—	28.57	—	—	—
Newburyport	13,839	7	1	—	14.28	—	—	—
Northampton	13,419	2	—	—	10.00	—	—	—

Deaths reported 2,022: under five years of age 689; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 280, acute lung diseases 192, consumption 292, diphtheria and croup 93, scarlet fever 40, diarrhoeal diseases 35, typhoid fever 29, measles 26, whooping-cough 15, puerperal fever 12, cerebro-spinal meningitis 12, malarial fever 11, small-pox 10, erysipelas four. From diarrhoeal diseases New York 19, Philadelphia seven, Boston, Pittsburgh and Washington two each, Worcester, Baltimore and Nashville one each. From measles, New York 10, Baltimore eight, Washington four, Milwaukee two, Pittsburgh and Nashville one each. From whooping-cough New York seven, Boston three, Baltimore two, Lowell, Philadelphia and Charleston one each. From cerebro-spinal meningitis, New York six, Worcester, Lowell, Cambridge, Lynn, Milwaukee and Washington one each. From puerperal fever, New York five, Washington two, Worcester, Newton, Milwaukee, Pittsburgh and Nashville one each. From malarial fever New York five, Philadelphia, Baltimore and Washington two each. From small-

pox New York seven, Philadelphia three. From erysipelas New York three, Washington one.

In the 28 greater towns of England and Wales with an estimated population of 4,398,273, for the week ending April 7th, the death-rate was 19.9. Deaths reported 3,584: infants under one year of age 814; acute diseases of the respiratory organs (London) 419, whooping-cough 141, scarlet fever 46, measles 4, diarrhoea 41, diphtheria 27, fevers 51, small-pox (Sheffield 14, Leeds, Halifax and Manchester one each) 17.

The death-rates ranged from 15.6 in Derby to 29.7 in Manchester: Birmingham 18.5; Bradford 18.4; Bristol 19.7; Hull 15.5; Leeds 21.2; Liverpool 19.3; London 19.4; Newcastle-on-Tyne 18.1; Nottingham 15.1; Portsmouth 19.1; Sheffield 23.4; Sunderland 15.0.

In Edinburgh 22.0; Glasgow 24.4; Dublin 27.8.

The meteorological record for the week ending April 21, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barometer.	Thermometer.		Relative Humidity.			Direction of Wind.		Velocity of Wind.			State of Weather. ¹			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Saturday, Apr. 21, 1888.																
Sunday, ... 15	29.94	41.0	47.0	34.0	91.0	62.0	46.0	66.0	N. E.	N. W.	15	6	3	O.	O.	3 .09
Monday, ... 16	29.96	41.0	49.0	37.0	63.0	73.0	44.0	60.0	N. E.	N. W.	16	9	12	O.	O.	2 .01
Tuesday, ... 17	30.22	43.0	50.0	34.0	54.0	38.0	54.0	49.0	N. N. W.	N. W.	21	14	19	C. F.	C.	.60
Wednesday, ... 18	30.07	44.0	51.0	37.0	59.0	72.0	84.0	72.0	N. E.	S. W.	14	12	14	F.	T.	4.40 .05
Thursday, ... 19	30.00	48.0	56.0	35.0	43.0	30.0	54.0	42.0	N. W.	W. W.	12	12	4	C.	F.	.05
Friday, ... 20	29.88	40.0	48.0	38.0	73.0	44.0	83.0	80.0	S. E.	N. E.	9	16	10	O.	O.	5 .06
Saturday, ... 21	29.73	41.0	46.0	34.0	91.0	45.0	55.0	64.0	W. W.	W. W.	11	12	14	R.	O.	9 .05
Mean, the Week.	29.97		49.5	36.0				61.8								

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 21, 1888, TO APRIL 27, 1888.

BAILY, JOS C., lieutenant colonel and assistant medical purveyor. Granted leave of absence for twenty days on surgeon's certificate of disability, with permission to apply for an extension. S. O. 92, A. G. O., April 21, 1888.

BAILY, J. C., lieutenant colonel and assistant medical purveyor. Will transfer the public funds for which he is responsible and the charge of the medical purveying depot in New York City, temporarily to Capt. Henry Johnson, medical storekeeper. S. O. 92, A. G. O., April 21, 1888.

Paragraph 13, S. O. 89, A. G. O., April 18, is revoked by Paragraph 11, S. O. 93, A. G. O., April 23, and Major George M. Sternberg, Surgeon, United States Army, is directed to proceed to the Island of Cuba for the purpose named in the letter of the President addressed to the Secretary of War, on the 17th inst. Upon the completion of this duty will return to his proper station, and submit his report to the President on or before June 22, 1888.

VICKERY, R. S., major, and surgeon. Granted leave of absence for four months, with permission to apply for an extension of two months and to go beyond sea. S. O. 95, A. G. O., April 25, 1888.

The operation of Paragraph 17, S. O. 79, c. s. A. G. O., (so much thereof as relative to Capt. George E. Bushnell, Assistant Surgeon, United States Army), is suspended until May 1, 1888. S. O. 90, A. G. O., April 19, 1888.

WOOD, LEONARD, first lieutenant and assistant surgeon. Granted one month's leave of absence, with permission to apply for an extension of two months. S. O. 41, Department of Arizona, April 18, 1888.

ANDERSON, CHAS. L. G., first lieutenant and assistant surgeon. Granted one month's leave of absence from June 1, 1888. Resignation accepted by the President, to take effect July 1, 1888. S. O. 92, A. G. O., April 21, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING APRIL 28, 1888.

ORELLY, A. S., medical inspector. Granted six months' leave with permission to visit Europe.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.—There will be a meeting of this Society at 19 Boylston Place, on Monday evening, May 7th, at eight o'clock. The Treasurer will be present to receive the Annual Assessment, which is now due. Papers: Dr. F. W. Johnson, "A Few Cases of Abdominal Section." Dr. B. F. Davenport, "The Detection of Morphine in the Urine as a Means of Diagnosis."

T. F. SHEENAN, M.D., Secretary.

NORFOLK DISTRICT MEDICAL SOCIETY.—The annual meeting will be held at Rockland Hall, 2343 Washington Street, Roxbury, Tuesday, May 8th, at 2 P. M. Examination by the Censors will begin at 1 P. M., of the same day.

Order of Business: (1) Records. (2) Reports from Committees. (3) Report of Treasurer. (4) Election of Officers. (5) Incidental Business. (6) Communications: (a) "A Case of Acute Suppurative Peritonitis of the Left Side; Laparotomy (by Dr. Geo. W. Gay); Recovery." E. P. Gerry, M.D. (b) "The Use of Electricity in the Treatment of Uterine Fibroids, with Report of a Successful Case," J. H. Thurlow, M.D. (7) Introduction of Newly Elected Officers.

S. ALLEN POTTER, M.D., Secretary.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.—THE SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE will meet at 19 Boylston Place, on Wednesday, May 10th, at 7.45 o'clock. Papers: Dr. C. W. Townsend, "Endemic Cerebro-Spinal Meningitis." Dr. Henry Jackson will report Two Cases. Drs. S. G. Webster and T. M. Rotch will open the discussion. Dr. Hamilton Osgood, "Invertebrate Headache." Drs. J. J. Putnam, E. G. Cutler, and E. N. Whittier will open the discussion.

ALBERT N. BLODGETT, M.D., Secretary.
A. L. MASON, M.D., Chairman.

APPOINTMENT.

Dr. Otis K. Newell has been appointed Surgeon to Out-Patients in the Massachusetts General Hospital.

BOOKS AND PAMPHLETS RECEIVED.

Theine in the Treatment of Neuralgia, being a Physiological Contribution to the Therapeutics of Pain. By Thomas J. Mayo, M.D. Philadelphia: P. Blakiston, Son & Co. 1888.

Original Articles.

A NEW PRINCIPLE IN THE SURGERY OF THE
BLADDER.¹

BY OTIS K. NEWELL, M.D.,

Assistant Demonstrator of Anatomy at the Harvard Medical School,
Surgeon to Out-Patients at the Massachusetts General Hospital.

IN the study of any subject we are very apt to find that it has been more or less thoroughly investigated and understood in previous times, and we are led to conclude when we come upon such long since learned and forgotten facts that there is at least no wholly "new thing under the sun." In the *Boston Medical and Surgical Journal* of November 10, 1887, is an extract by Dr. G. L. Goodale, from an article entitled "Observations on Hydrophobia," written in 1812 by James Thacher, M.D., of Plymouth, Mass., in which the experiments were outlined and apologized for as chimerical and visionary which Pasteur seventy years later carried into practical execution. The recent erection of a statue in this city reminds us that Columbus discovered the land of Americus Vesputius, only to have it shown a few centuries later that one if not several enterprising individuals had already preceded him in that commendable undertaking. Many similar instances are familiar to us, both in medical and other history, and I therefore imagine that we should not be discouraged in our efforts to improve or originate in connection with any particular subject, because it may have already undergone more or less consideration.

The fact upon which whatever there may be of value in the present paper is based, I have found to be known of in one instance, where Professor Grünfeld, in his work on endoscopy, refers to the introduction into the bladder of an instrument fifteen centimetres in length. There may be other instances of a knowledge of this fact, but the practical applications which extended consideration of its possibilities has suggested to me have not, so far as I am aware, been made until now.

I refer to the fact, already laid stress upon in an article of mine published in the *Boston Medical and Surgical Journal* of November 11, 1886, that the applied anatomy of the male urethra is such that in no case is it necessary to have an instrument of more than six inches in length in order to introduce it into the male bladder and leave from one to two and a-half inches protruding through the vesical orifice. This being the fact, we see that in the average case a still shorter instrument can be introduced, and we may decide upon four and six inches as the necessary extremes of this measurement. Practically, however, an instrument of five or six inches length is the best for ready manipulation. Of course there are exceptions to this rule, but in a quite extended experience in the matter I have yet failed to find such a case. It is of interest to know that a hip may be so ankylosed, or a prostate so enormously and peculiarly enlarged, that no instrument at all, or only a specially constructed one, can be introduced into the bladder. But the knowledge of such cases is more of value to us because we may once or twice in a lifetime encounter them, than matter of everyday importance.

If we consider the anatomy of the bladder in the male and female subject we will remember that practically it differs but little in that portion posterior to

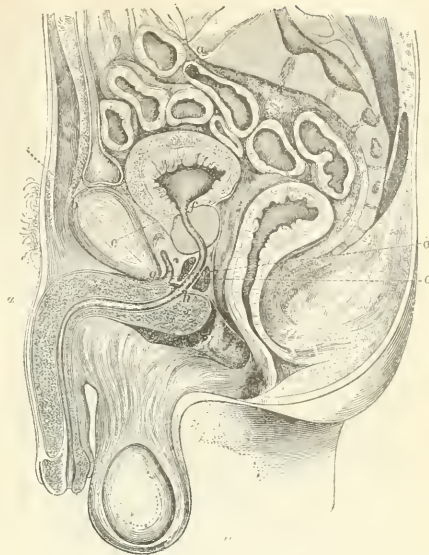


Figure 1.

the pubic arch. This, as ordinarily shown, may be seen in Figure 1, a median sagittal frozen section, taken from Dittel's volume in the *Deutsche Chirurgie* on "Stricturen der Harnröhre." The great difference, then, is found in the anterior or pendulous portion of the urethra in the male. This part of the canal, however, is so readily folded upon itself that its measurements may be easily very much reduced. This, I think, may be very clearly seen in Figures 11 and 111 taken from a frozen section of the male, which I made after introducing a split sound marked off into centimetres. The perfectly straight course of the canal when held upon an instrument is plainly seen, and the short 10 c.m. distance between the orifices equally apparent. To demonstrate the short measurement it is only necessary to introduce any unyielding instrument, straight or curved, into the bladder, so as to have one or two inches of its length protruding into the vesical cavity. If the urethra be now pushed together upon the instrument so as to appose its walls as much as possible in the longitudinal direction, without the use of undue force, and the instrument grasped at the point where the external meatus lies; when this is done and then withdrawn, the length beyond the point grasped by the fingers will indicate that of the instrument necessary to readily enter the bladder. Whoever will take the trouble to do this will not be long in becoming convinced of the truth of the stated facts, and, indeed, will begin to realize that by this procedure the parts may be made to correspond closely to those in the female, for in the majority of cases the length of instrument required to merely reach from orifice to orifice will seldom be more than from three and one-half to four inches. In Fig. 111, where the parts were not pushed forcibly together, the distance as shown is about eleven centimetres, or say four and one-quarter inches.

¹ Read before the Boston Society of Medical Sciences, January 17, 1888.

Granting, for the present, that such is the case, it will be well, perhaps, to describe in what manner the instrument should be introduced, for it is quite apparent that, being less in length than the undisturbed normal adult male urethra, it cannot possess the distinguishing advantage which its substitutes, particularly the steel sound, are sometimes said to have, of "going in just by their own weight." On the contrary, it is necessary to guide the present instrument by intelligent manipulation, but of no greater degree than the surgeon capable of introducing unyielding instruments

than long enough when of the standard length, six inches, to reach this point without being covered. When this is done, the instrument should be depressed so as to correspond in direction with the urethral axis of the prostate as much as possible, and then passed, preferably with a rotary motion, into the bladder cavity. After it has been thus introduced the prostate is fixed upon some portion of its length, and the instrument can, therefore, as a rule, be easily elevated to an angle of about 45° with the table. In thus introducing it it is best to make the whole movement in one continuous rotation and anterior progression of the instrument in the medium sagittal plane of the body, for then, when its point reaches the opening in the triangular ligament it will, since it is being always gently pressed forward and upward, pass through and not beyond that structure, to form a pocket, which it does do when first passed directly down as far as possible, a method often suggested.



Figure 11.



Figure 111.

into the bladder is always sure to possess. If the instrument be straight, and I believe, as will be stated more fully further on, that all instruments for introduction into the bladder should ordinarily be straight, it should be passed down until it reaches the opening in the triangular ligament. If the instrument is not up to the urethra in calibre, the parts will, by their own weight, naturally fall together upon it, and it will be more

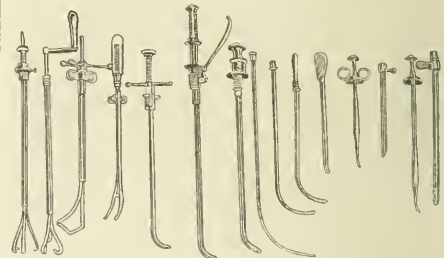


Figure 1V.

If we pass before us in a somewhat historical review the ordinary bladder instruments, as we can do by referring to Figure 1V, we shall find that there is but little departure from the traditional length, and that wherever this has occurred it has rarely been but to add something to it. On the left of the figure we see various forms of lithotrites, in all of which the part for insertion is of about the same length. On the right are a number of the more modern instruments compared with those of the short measurement. Over IX and X a catheter and sound of the usual length. At XIV and XV Dr. Bigelow's divulsor and one of his evacuating tubes. Over VIII a catheter, the enormous length (eighteen inches) and curve of which were supposed to better enable it to overcome the difficulty of passing an enlarged prostate.

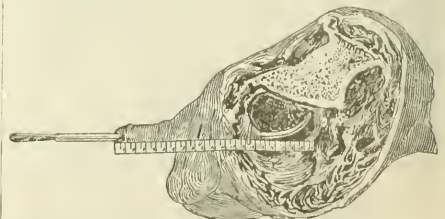


Figure V.

In Figure V we see a steel sound, such as one made by Ultzman, introduced into the bladder. The prep-

aration is from a full-sized adult negro, and the vesico-urethral measurements are much above the average. That is, the urethra, pendulous portion, is longer than usual, and the bladder easily distended to one litre capacity. The measurements are not altered through preparation, and the specimen is preserved for inspection. Now, it will be observed that the sound, in addition to that portion of it engaged in the urethra, measuring, as shown in the figure, 15 c.m., from meatus to vesical orifice, has still left a considerable portion protruding from either end, the outer measuring 9 c.m., the inner 7 c.m. What of these parts of the instrument are necessary? At the outer end sufficient length for convenient manipulation; at the inner, enough of the instrument to enable it to perform its specific function. For the sound, length sufficient to protrude through the prostate without stretching the

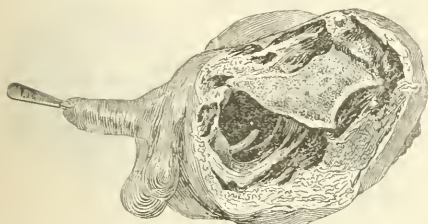


Figure VI.

bladder, as shown in Figure VI, where a six-inch sound is introduced; for the evacuating tube enough to enable its vesical end to depress the floor of the bladder so as to make it the lowest point in the cavity. An idea of what this length should be may be obtained from



Figure VII.

Figure VII; for the lithotrite the length that best fits it for manipulation of stone and strength of construction. It would seem that the shaft of lithotrites might advantageously be shortened about two inches. For a catheter, the length enabling it to best drain the bladder without making any unnecessary convolutions through which the urine is to be drawn, and which make it harder to clean. A soft rubber catheter does not need to be much longer than an inflexible instrument as far as the mere act of catheterization is concerned. When any drainage apparatus is used it is better to add it to the soft catheter than to have the latter unnecessarily long. Figure VI indicates about the proper length for metallic catheters. Eight inches seems to me to be the proper length for soft rubber catheters. They are now made thirteen to fourteen inches long. This unnecessary length is well shown in Figure VIII, taken from the fourth and fifth numbers of "Wiener Klinik," 1887, by Dr. J. Englisch, in which ninety-four pages are devoted to the consideration of catheterization. Figure IX shows a

modification of Dr. Bigelow's divulsor introduced into the bladder. This instrument measuring seven inches along the part for insertion, is sufficiently long for ready introduction, and when used is held firmly in position by the ulnar side of the hand resting over the pubes, and thus prevented from being forced into or through the bladder wall by the sudden giving way of a very resistive stricture. This, when the divulsor is used, is a very important point. The unnecessary length of a divulsor is shown by comparison in the figure. Endoscopes should, of course, offer the shortest possible visual distance, and that for an instrument to be applicable to the average case would be six inches.

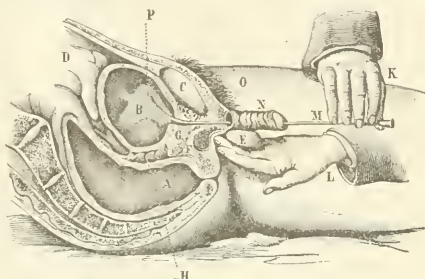


Figure VIII.

If we look at the sound in Figure V, we notice that its curved end is wholly within the bladder, and that the urethral canal is practically engaged upon a straight instrument. The curved end, therefore, serves to admit of the more easy and less painful introduction, but is otherwise unnecessary. I previ-



Figure IX.

ously stated that I believed the straight instrument to be the best for most purposes, and I refer to its surgical employment, whether as an evacuator, endoscope, porte-rémède, or applicator. The usefulness of a steel sound is not interfered with by having its less painful introduction favored by a curved end, especially when it is to be used by the patient. But by removing the unnecessary three or four inches of length from urethral sounds as they are now made, we have an instrument which we know, when introduced, to be occupying a definite position in the urethral canal throughout its length, and not to be protruding indefinitely into the bladder cavity, with which it should have nothing to do. Ordinary catheterization, and especially when done by the patient, is best performed with a flexible instrument. The straight instrument is best because it is the shortest. It can best be kept aseptic, since, when properly constructed, for whatever purpose; if a tubular instrument, it can be looked through from end to end, and thoroughly cleansed by scrubbing and solutions. The chief objection to

straight instruments is that they are more difficult of introduction. But I think that none of us fail to acquire the necessary skill, and it would, perhaps, be well for mankind in general if there were fewer bladder instruments supposed to be somewhat self-introducing. As regards the difference in pain caused by the introduction of straight and curved instruments, I think that whoever is accustomed to passing straight ones has not found it great enough to interfere with the advantages of their use.

I shall not detain you with further evidence in attempting to sustain the facts as stated. In my paper of November, 1886, I mentioned fifteen cases of careful measurement, in all of which six inches had been more than the maximum necessary length of instrument. Since that time I have made many more measurements, both on the dead and living anatomy, and have become so thoroughly convinced of the truth of the matter that to add further statistics would seem to me like doing so for the mere sake of numbers. I will, therefore, in conclusion, consider what changes are suggested by the above facts in the construction of evacuators.

EVACUATORS.

In considering the construction of evacuators I have, for comparison, confined myself to that of Dr. Bigelow, with which, during two services as his House Officer, I have had most opportunity to become familiar, and which is undoubtedly the best of the various forms hitherto made. In his article in the *American Journal of the Medical Sciences* for June, 1878, in which he established the great principle of the toleration of the bladder to instrumentation, Dr. Bigelow said, in the introductory remarks: "It is not impossible that convictions in some degree traditional may prevail in regard to certain points connected with the practice of the more recent art of lithotomy." May I possibly again suggest that another, though less important, tradition has been strangely adhered to in the construction of this and all other bladder instruments?



Figure X.

For the most effective action of an evacuator it is apparent that the distance which a fragment must be carried in order to be caught within the bulb should be as short as possible, and we should, therefore, take advantage of the fact under consideration in determining what this length may be. Now, if we compare length of the evacuating canal as shown in Figure X and Figure XI we will readily see the striking difference which the two represent, and realize the effect which must be produced by it in the rapidity of evacuation. We can readily see from the figures that a certain reduction in the length of the tube is possible. Now, another important fact is that the so-called "trap" is unnecessary, for the bulb, if properly constructed, is itself a trap. This is brought about by

making the receiver below of good size, as shown in Figure XI, so that when the fragments have fallen into it, and this they are sure to do, they are eliminated from the current, and when once through the internal orifice never returned to the bladder. This I have repeatedly proved by Dr. Bigelow's test and in other ways, and am convinced that no sort of management can make the bulb belie the fact. After full expansion of the bulb it is simply necessary to allow a second or two for the fragments to settle, and this they do rapidly, for they do not float, and then no matter how forcibly the bulb is compressed, they will remain quietly in the receiver, and only those fragments will be driven back which have failed to be lifted through the whole length of the tube. This may be prettily demonstrated by using a glass tube with the Ultzmann evacuator.



Figure XI.

How much now can we reduce the length of the evacuating canal? First by elimination of the trap $1\frac{1}{2}$ inches; second, by eliminating an unnecessary stop-cock, as done at times by Dr. Bigelow, and shortening the other $2\frac{1}{2}$ inches. By limiting the evacuating tube to an extreme length of six inches, four inches, making a total reduction of $7\frac{1}{2}$ inches, and thus making it necessary to lift each fragment $7\frac{1}{2}$ inches instead of 15. The present bulb is made of pure gum rubber so as not to be unnecessarily strong or heavy. A nicely finished gum bulb such as are made by the Germans cannot be produced in this country; at least so say the manufacturers. The fittings are made of hard rubber so as to be non-corrodable, disinfected, and at the same time light. This evacuator, weighing 320 gm., while that of Dr. Bigelow weighs 725, an all-important point when they are filled with water in permitting the best manipulation and tactile sense. With the modified tube orifice as used by me, and the decreased length of canal, the gain in rapidity of evacuation is very much greater than in previous forms; in fact, beyond comparison in one sense, since tubes of this construction remove fragments which the corresponding numbers of the Bigelow pattern will not admit. If this be true, then we have not only increased rapidity of evacuation, but *diminished number of crushings*.

The operation thus consumes much less time, and its value and safety are increased. It is, perhaps, of no little importance to determine just what the value of this operation is to-day, particularly when we read of long series of cases from countries where litholapaxy has never been done, and the efforts of Bigelow and others are either disregarded or set at naught. Supra-pubic cystostomy with its high mortality, and the other operations of magnitude for the removal of stone are finding their advocates who must have

further favorable evidence or condemn the Bigelow method, safer and simpler when properly taught and understood, to become obsolete. I myself have seen a distinguished authority, whose name is known to two continents, removing a stone from the bladder before an audience of various nationalities by a method taught as that of Bigelow. A Clover evacuating bulb with a small tube was used, and the crushings were performed at several sittings without anesthesia.

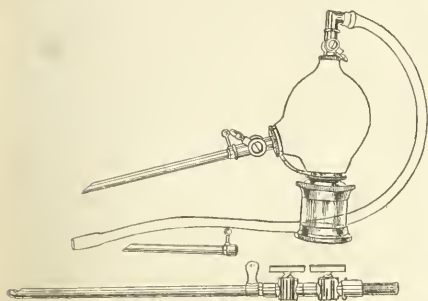


Figure XII.

Experience has taught me that it will be said of my tubes as shown in Figure XII, where the comparative length of the two evacuating canals is also well shown, that they are more apt to aspirate the bladder wall than the other forms. This may possibly be so, but experimentally I have never been able to determine just what the degree of difference is. Granting, however, that there is a difference, we must remember that it is of no practical importance, for when any tube is aspirating the bladder wall its orifice is either too close to that structure or else the viscus is not sufficiently distended for effective evacuation. With the Bigelow pipe attachment there is no excuse for allowing more than a few seconds to pass before correcting the latter condition. Dr. Bigelow has written that "an evacuator that works best with pieces of coal in a glass vessel of water will succeed best with the fragments in the bladder." "So also will the surgeon if he is otherwise well qualified." Experimentally there has been no trouble in evacuating coal fragments from not only a glass vessel, but from the most delicate bladder, such as one made of a chicken or turkey crop, and admirably suited to this purpose, without obstruction to the tube or injury to the bladder. This style of orifice is of great advantage in the smaller sizes of tubes, such as are used for litholapaxy in children. It is natural to expect that a certain amount of familiarity with this instrument, or with any other, is necessary before one can use it readily. Who expects to take up any complicated instrument, or piece of apparatus, and feel at home with it at once? But who will deny that there are many that work beautifully and successfully, however much or little he may favor their use?

In aspirating fragments it seems to me that it is useless to imagine that we can, by moving the tube orifice from place to place, sooner remove a fragment or fragments which may have lodged behind or within some prominence or depression about which we can know nothing, excepting, as is nowadays possible,

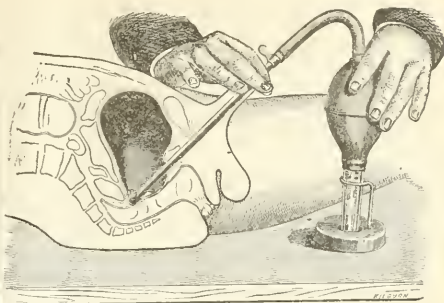


Figure XIII.

we take the pains to examine the bladder beforehand with the cystoscope. Under ordinary circumstances, however, it is best to place the tube so that its vesical end is depressing the bladder floor so as to make the portion with which it is in contact the lowest point. If we look at Figure XIII, taken from Dr. Bigelow's book, we will see how the tube should be held. At first the orifice is somewhat choked by an excess of fragments, but they are soon carried away, as each compression of the bulb sends them flying about in the bladder cavity, out of which they are rapidly drawn by the strong suction of the expanding bulb. In a few moments the familiar click will be heard that indicates, if nothing is falling into the receiver, that all fragments small enough have been carried through the tube. It is now, of course, of advantage to turn the orifice of the tube to one side or the other, so that with compression of the bulb any fragment or

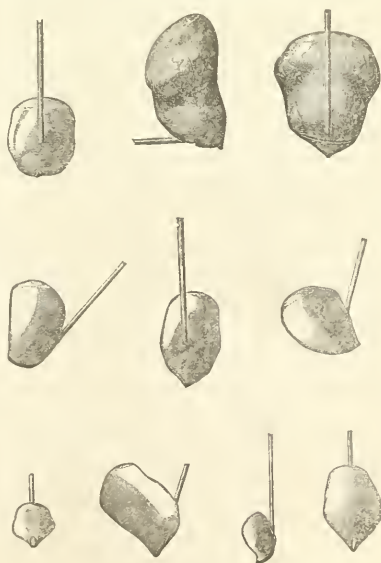


Figure XIV.

fragments that may have lodged behind the tube will be washed away. In Figure XIV, also taken from Dr. Bigelow's book, we see casts of ten different bladders, in all of which there is no evidence of any prostatic formation that would tend to interfere with the typical working of an evacuator. When peculiar malformations of the prostate or bladder, such as are occasionally met with do not admit of proceeding in the regular way, it would seem to me that the patient is exposed to less risk by some form of lithotomy. It also seems to me to be very important to have all of these operations preceded by several days of antiseptic irrigation of the bladder.

The advisable modifications in the other bladder instruments have already been suggested, by comparison chiefly, in this and a previous paper. I have no doubt that those of us who are interested in the matter will from time to time find various applications which further consideration of its possibilities may suggest.

These instruments are all made by Messrs. Codman and Shurtleff, whom I have to thank for their unfailing kindness, especially in the loan of instruments and apparatus for comparative tests.

SOUTHERN CALIFORNIA AS A HEALTH-RESORT.¹

BY SAMUEL L. DUTTON, M.D., ROXBURY, MASS.

GENTLEMEN: I have been invited to contribute, as each should be willing to do, to the general interests of the Society, and have selected "Southern California as a Health-Resort" as a subject for consideration.

"In the main, the results of personal observation will be presented, with the hope that such an interchange of views will result as shall prove mutually helpful. Such brief statistics will be introduced as may seem necessary for an understanding of the observations and opinions expressed! but further than this the writer would refer any desirous of such information to the many able publications upon the subject now extant. Many other points also desirable to introduce must of necessity be omitted, as the limits of this article will not allow of their introduction.

Presuming, then, that the tourist in going to Southern California takes the southern route, which, for the winter, is the most desirable, he will, after leaving Kansas City, travel almost directly west through the entire length of Kansas, and well into Colorado. From here he deflects to the south, soon reaching its highest altitudes, crosses the Rocky Mountains, and descends into what is known as the "Great Basin," which extends from the base of the "Rockies" to the Sierra Nevada range, a distance of about one thousand miles.

Between the Sierra Nevada and the Pacific Ocean is what is termed the Coast Range, running parallel with the Rocky Mountains, and also somewhat parallel to the sea-coast. Between these two ranges is the great Northern California Valley, drained on the north by the Sacramento River, and on south by the San Joaquin. At the foot of the San Joaquin Valley is a spur of mountains, known as the Tehachapi, running east and west, and connecting as by a band the Coast Range with the Sierra Nevada, and dividing

thereby the State north and south. At this point is Tehachapi Pass, through which communication is had between the northern and southern portions of the State. On emerging from Tehachapi Pass the tourist enters what is distinctively known as Southern California, a country possessed of a climate entirely different from that found upon the other or northern side of this ridge, the mountains acting as a barrier to the sweep of the winds from the great valley above. Turning now to the coast, we find that it runs from northwest to southeast, commencing at Cape Mendocino, and ending at Point Conception on the south, where it deflects, running almost due east and west. Along this coast runs the great Japan Current, the Gulf Stream of the Pacific Ocean, which furnishes an additional reason for an exceedingly equable climate. Bearing in mind the fact that the Great Basin in the lower part, termed the Colorado and also Mojave Desert, is separated from this section by the Sierra Nevada Range of mountains, and is, in summer, of torrid heat, it will readily be seen that the long valley of Southern California must be tempered in great measure by the air-currents passing to and fro from west to east, and east to west, thereby mutually balancing and counterbalancing one another, and thence constantly and gently fanning this territory.

Taking Los Angeles now as the illustrative point, this being the particular place to which the majority of invalids seem to gravitate, we find by comparison with Boston, and, in fact, with all sections east of the Rocky Mountains, that it has a special reason for claiming exemption from those extremes so taxing to the sick, or the man who from any cause is of weakened vitality. From the United States Signal Service Report it is shown that the average temperature at Los Angeles during January for six years has been 52° Fahr., and that for August for the same years it has been 69.7°. During these same years, Boston showed a mean temperature of 32° for January, and 69.9° for August. In other words, the warmest months in Los Angeles are slightly cooler than the same months with us, while her coldest are very much warmer. Placing it in still another form, it appears that while the greatest range in Los Angeles was 29°, in Boston it was 69°. In elevation, Los Angeles is about three hundred feet above the sea, from which it is removed twelve or fourteen miles. Eight miles farther inland, and nearer the foot-hills, is Pasadena, with an elevation of about one thousand feet.

Higher elevations still are rapidly reached as the foot-hills are approached, and but a comparatively short distance brings one to a veritable New England winter, the peaks of the Sierra Nevadas being white with snow, while seemingly hardly removed from the valley where flowers in untold quantities and variety are in full bloom and countless orange-trees are golden with fruit.

With such a climate and such surroundings certainly much can be hoped for the invalid. Still, all do not recover who go there, and in many cases for reasons that should have been avoided, and one meets many invalids who are loud in their denunciations, and who express deep regret that they ever came to the country.

On my way home, I stopped for several days at Salt Lake City, and at the hotel met no less than four persons, all strangers to one another, and equally pro-

¹ Read before the Norfolk District Medical Society.

nounced in their belief that the journey had been a mistaken one for them.

There are various reasons why a journey of this kind may be disappointing to patients and friends alike : First, many on leaving home are physically too exhausted and should never have attempted it, although I am of the opinion that, with due precautions, pretty sick men can safely undertake the trip. Again, locations are selected that do not meet the needs of the case, when a change of perhaps a few miles might have produced a different result. Too often the patient is improperly dressed, and I think I may safely say that, as a rule, he is careless and often reckless in his habits.

Carelessness has much to do with the disappointment so often experienced by the invalid, and not infrequently costs him his life. On reaching this land of sunshine and flowers, he seems possessed of the idea that Paradise is regained, and is quite apt to throw off restraint, as if in no further danger from colds, coughs, or sicknesses, and forgetful of the fact, (if, indeed, he ever knew it), that *additional* precautions should be taken, as he has yet to undergo acclimatization, until which time he remains a "tender-foot."

On our journey outward, after approaching the warm belt, I remember the train stopped one morning, owing to some obstruction upon the track, and, as is usually the case under such circumstances, many of the passengers alighted and walked about, among them two gentlemen just out of their berths, in slippers and without overcoats. Each of these had been to me the evening before, one suffering with a diarrhoea, and the other quite alarmed about a bronchial difficulty, for which he was on his way South. While stopping for a day at Las Vegas Hot Springs, some of the younger of the party were intent upon taking a bath [I think a mud-bath], although it was only for the novelty of it. At San Diego, the temptation was to indulge in bathing in the Pacific, and this in January, the patient having but just left New England.

Suddenly transported to a country where oranges are as common as apples are here, this fruit was indulged in to surfeiting, with the result of producing intestinal troubles and bilious derangements. Bronchial affections already existing were aggravated, and new ills engendered, troubles that the exercise of caution might well have avoided.

Another of our party, also an invalid, determined to settle down quietly at Pasadena. This he accordingly did, commencing his life of peace and rest by purchasing a broucho, and getting in order his fishing and hunting outfit, all of which he proceeded to make vigorous use of; he had come for his health, and was determined to get his money's worth. As a consequence, he soon began to lose ground, and within a short time was worse off than when he started on his trip.

These are a few of the hazards, coming under my own observation, to which the invalid subjects himself, and one of the most important aids a physician can render is to warn him on leaving home to exercise prudence and discretion, or disappointment will certainly follow.

What classes of patients, then, shall be sent to Southern California? Where shall they be sent, and what may be reasonably expected to be the result? In answer to the first I would reply: Those who are so enfeebled as to suffer from the severities of a

Northern winter; the overworked and those needing rest; the prematurely old; the rheumatic; the sufferer from incipient phthisis; the victim of bronchial troubles; the dyspeptic; and, in fact, all generally enfeebled people. Many among these are greatly benefited by a stay of a few months, and, excepting those suffering from a respiratory disease, may generally safely return on the approach of summer, *but not earlier.*

My own observations in meeting many disappointed ones suffering from pulmonary troubles, additionally impressed upon my mind the truthfulness of what the specialist affirms; namely, that "these should make it no holiday excursion, remaining but a short time, and returning to the North at their pleasure, but, selecting some suitable place for their residence, *make this their permanent home*, keeping up the constant fight for life."

In general, there is but little difference between the different places from Los Angeles to San Diego. They are all much alike, except as to altitude, and almost any of them safe for the invalid. If, however, the patient is one already greatly enfeebled, let him select some particular locality in which to make his home and there remain permanently, unless convinced that for some special reason it does not meet the wants of his case. Many wander aimlessly about from place to place, subjected to the hardships incident to travel and hotel life, thereby exhausting vitality more rapidly than it can be accumulated, and in the end meet with disappointment, not improving as they supposed they would, and entirely unmindful of the fact that their own indiscretion has been the cause.

Los Angeles is the Mecca of the California pilgrims, and benefits many who remain. Those who select this as their stopping place should be counselled to make their home back on the hills, which is the new section, the original or old Spanish part being at the foot. There is a lower portion of the city still, which is built upon what was at one time the bed of the Los Angeles River, since turned farther to the south. Although stoutly denied by the Los Anglean, my own belief is that malaria exists in this bottom.

Parts also of East Los Angeles are desirable places for residence, as well as Boyle Height, across the river. Sufferers, however, from respiratory disease should not, I think, remain here permanently, but go farther to the foot-hills, the altitude of Los Angeles, as already noticed, being but three hundred feet above the sea.

Neither do I believe this to be the best place for the person suffering from nervous exhaustion, for a whirl of excitement, impossible to appreciate unless witnessed, exists here, as well as at San Diego, and is anything but restful to this class of people. Los Angeles claims, and I presume justly, more than three hundred days of fair weather during the year. This, however, is not peculiar to this city alone, but pertains as well to other places, and is certainly a factor in the treatment of disease not to be overlooked.

Pasadena, eight miles from Los Angeles, and toward the foot-hills, has an elevation of about one thousand feet. It is a charming place of about six thousand inhabitants, but is, in reality, one immense hospital. The cadaverous face is to be met everywhere, while the significant cough is heard on every street-corner, and, consequently, it is not the most cheerful of places for the victim who is himself engaged in this life and death struggle for existence.

There are other and smaller places with equally good climatic surroundings, and for these reasons, in my opinion, superior locations for the average invalid. Among them are to be mentioned Pomona, Orange, Ontario, Sierra Madre, Monrovia, and many others. San Diego, at the extreme end of the State, claims great attraction for the invalid, and shows even more days of sunshine than Los Angeles and Pasadena, although directly upon the coast, yet I learned of remarkable recoveries there.

This, however, like Los Angeles, is in a whirlwind of speculation and unrest, and therefore, but little calculated to benefit the nervously exhausted. Neither, in my opinion, should it be selected as a place of residence by any classes of invalids, for if rest and quiet are necessary in recovery from disease, it is the height of folly to send the sick man to a place where the very atmosphere is laden with the craze of excitement as with malaria. To intelligently determine the benefit the patient may expect to reap from going to this great sanitarium, and thereby answer the concluding part of our query, mortality statistics should come to our aid, but in these California is sadly deficient. On every hand one hears of marvellous recoveries, but at the same time there are many disappointed ones, who hoped for more than they realized. Individual cases are of interest, but as "a single swallow does not make a summer," so the recital of a few experiences does not establish a rule or bring us to legitimate conclusions.

In reply to a note that I addressed to our own Board of Health, the answer was that the statistics from the Pacific Coast were very unsatisfactory and meagre. The Secretary of the State Board of California commenced his last report with these words: "In presenting this report, your Secretary has to regret its many imperfections in matters appertaining to the vital statistics of the State." To appreciate the correctness of this statement, attention is asked to the report of this official for December last, in which San Francisco makes a return of its entire death-loss for that month of 38% as *unclassified*; Los Angeles 51%, Pasadena 50%, Oakland 33%, while San Diego makes no report at all, leaving us entirely in doubt as to her mortality or causes of death.

Herewith are introduced a few statistics showing the relative frequency of consumption and pneumonia in these places, as compared with Boston, and it is safe to assume that in this unclassified percentage are included others properly belonging to the respiratory diseases. In the last biennial State report the mortality in Southern California is expressed in letters, instead of figures "A" indicating absent, "R" rare, "VR" very rare, etc. Why this should be done, instead of adopting the customary course of making numerical statements, is a matter for individual conjecture. The following comparisons are for the month of December last:

BOSTON. Population, 400,000. Deaths, 872; Consumption, 123; Bronchitis, 53; Pneumonia, 89; total, 265 from respiratory diseases. Unclassified, 0.

SAN FRANCISCO. Population, 300,000. Deaths, 582; Consumption, 100; Bronchitis, 18; Pneumonia, 63; total, 181 from respiratory diseases. Unclassified, 38 per cent.

LOS ANGELES. Population, 60,000. Deaths, 60; Consumption, 10; Bronchitis, 1; Pneumonia, 1; total, 15 from respiratory diseases. Unclassified, 64 per cent.

PASADENA. Population, 6,000. Deaths, 26; Consumption, 12; Bronchitis, 0; Pneumonia, 1; total, 13 from respiratory diseases; 50 per cent. unclassified.

OAKLAND. Population, 50,000. Deaths, 53; Consumption, 4; Pneumonia, 7; Bronchitis, 0; total, 11 from respiratory diseases. Unclassified, 43 per cent.

SAN JOSE. Population, 15,000. Deaths, 30; Consumption, 7; Pneumonia, 3; total, 10 from respiratory diseases. Unclassified, 35 per cent.

SANTA CLARA. Population, 2,500. Deaths, 4; Consumption, 1; Pneumonia, 1; total, 2 from respiratory diseases. Unclassified, 25 per cent.

SANTA CRUZ. Population, 7,000. Deaths, 8; Consumption, 0; Pneumonia, 0. Unclassified, 50 per cent.

MONTREY. Population, 3,000. Deaths, 4; Consumption, 1; Pneumonia, 0; total, 1 from respiratory diseases. Unclassified, 25 per cent.

The above figures are from the monthly report of the State Board, and the only one at hand, the biennial report, as already stated, furnishing no statistics upon which calculations for the Southern section can be based. As it is one of the winter months it is fair to presume that an average number of Northern invalids is included, and consequently it is safe to assume that it is a fair comparison between Boston and these places for the average of winter.

It is not claimed that great importance should be attached to statistics of such meagre character, and I trust they will not be misleading. I think, however, that they are significant, and worthy of consideration. The places to which attention has been called were selected for comparison only, as they are among those visited by me, and the ones generally resorted to by invalids.

This large percentage of consumption is attributed, and doubtless in the main justly, to the great numbers of invalids from the Northern and Western States who, suffering from this dread disease, have gone to this country for their health, but, instead, have died among strangers. How far the same cause is responsible for the large mortality from pneumonia is an open question. Undoubtedly it is largely thus; but when we consider that, so far as San Francisco is concerned, it is not a city ordinarily thronged with tourists at this season of the year, it would appear that, contrary to popular belief, our own severe climate is not alone responsible for the mortality from this disease; neither do we suffer by comparison so much as is often asserted.

Although almost complete exemption from phthisis among the natives is claimed by some enthusiastic observers, yet attention is asked to the following extract from the last California State Report, which is from the pen of the President of the Board.

He says: "The rapid increase of the white race has steadily placed the Spanish at a sad disadvantage." "Here, as elsewhere, the rich become richer, the poor poorer, and with the inevitable attendant evil of an impoverished condition, the near future will probably witness the extinction of these earlier occupants of this sunny southwestern shore, and phthisis will have not a little to do with the ending. But the pendulum with a uniform propellant force behind it must swing in a uniform arc. Indoor residence, light houses, whether of adobe or wood, abandonment of walking and horseback exercise, must eventually do for the rich American what similar conduct is doing for the poor Spaniard."

Thus imperfectly have been presented a few of the observations and conclusions resulting from a visit to Southern California.

Another section, though not geographically included within the same limits, claims mention. I refer to

the beautiful valley of Santa Clara. This, in my estimation, is the most charming part of California that it was my privilege to visit, and to this place, I think, many patients might be sent to greater advantage than to the southern portion. If he intends making California his permanent home, and desires to engage in agriculture, this region presents superior attractions. Land is not only better in quality, but cheaper in price. But little irrigation is required, a consideration, it seems to me, that eventually will be of great importance as affecting health. Added to these are social surroundings and educational advantages that are far in advance of the lower section. Here are the beautiful towns and cities of San Jose, Santa Clara, Santa Cruz, and Monterey. At this last-named place is the famous Del Monte Hotel, the surroundings of which are charming beyond description. As a health-resort, Monterey claims advantages over any other portion of the State. Also in this valley are located the Lick Observatory, the State Normal School, and the Leland Stanford, Jr., University, with its magnificent endowment of \$20,000,000. Altogether California is a beautiful country, and possesses a climate that is beneficial to great numbers of invalids. All, however, do not recover who go there, and many would live longer by remaining at home. The length of the journey and distance from home, separation from friends, and lack of many comforts to be found nowhere outside of one's own home, lead, in many instances, to disheartening and homesickness. The expense has been great, and perhaps assumed when it could ill be afforded, with the fond hope that recovery would result. Disappointment and depression, so disastrous to the invalid, follow, and the already depleted vitality is more rapidly exhausted still. If, however, with due consideration of such qualifying circumstances a just discrimination is made in selecting patients to send to California, much good may reasonably be expected to result from the change, *provided a proper selection of location is also made, and the invalid leads a careful, uniform and temperate life in his new home.* A factor, however, that should be carefully considered as affecting his permanent recovery is very frankly and plainly set forth in the last report of the Board of Health of California, which is in the following language, and to which, in conclusion, attention is invited: "Certain chronic diseases are attributable to this climate. Now Californians [and by Californians, San Franciscans are usually meant] live a notoriously fast life. Persons coming to San Francisco from the interior or the East are at first chilled by the cool, fog-bearing winds, but this chilliness soon gives way to a feeling of exaltation and well-being difficult for those who have not experienced it to understand. No intolerable noonday heat compels a siesta. Food is bolted and digestion retarded. Their gait resembles a run, rather than a walk. Early and late their minds unceasingly act, and when their nervous force is exhausted, too often alcohol is used to stimulate their flagging energy. At fifty they are old. Such a life is conducive to nervous derangement, as well as derangements of the heart."

According to my own observation, this indictment is also true of Southern California. I was not a witness to the use of alcohol, but in other particulars I can bear testimony to the truthfulness of the charge as being far more applicable to the southern section than to San Francisco.

AN OUTBREAK OF TYPHOID FEVER IN A CHILDREN'S HOME.¹

BY W. C. HOLYOKE, M.D.

In the fall of 1883 an outbreak of typhoid fever occurred at the Home of the Boston Children's Friend Society. It came suddenly, and ceased almost as quickly, after having affected more than half the inmates. No case has been there at any other time during my ten years' service at the institution. Notwithstanding the time that has elapsed since the sickness occurred, I have thought the matter still of sufficient interest to report.

The Home, which is favorably situated on Rutland Street, consists of a main building and a two-story wing. The main building is nearly square, and has basement, three stories and attic. On the first, or street floor, besides waiting rooms, etc., are the kitchen and the large dining room for the children. The school room is on the second floor, and the sleeping rooms for the children on the third and part of fourth, or attic, floor.

At the time of which I speak the children, who were all girls except a few boys under seven years of age, were divided into three classes. (1) School children between six and sixteen years of age, who lived in the main building. (2) The larger nursery children between four and six years of age, who occupied the lower floor of the wing during the day, but ate in the large dining room with the school children, and slept on the third floor of the main building. (3) The smaller nursery children, under four years of age, who lived in the upper story of the wing, where they ate and slept, having very little communication with the other children.

The whole number of persons in the home was 82, as follows: 50 school children, 14 in the larger nursery, 10 in the smaller nursery, and 8 adults in attendance, which was the full capacity.

In the summer of 1883 a house was procured in Milton, where most of the children spent a few weeks in turn. They all returned to the home before September 3d except the smaller nursery children, who came back about September 20th. They were then all well except two feeble children who had recently entered; and no especial sickness was noticed until October 1, when one girl complained of illness and went to bed. On October 2d a fire was started in a furnace which had been painted during the summer. The odor was very disagreeable, and produced sick headache in some of the adults. Many of the children were taken suddenly ill, and when I was called next morning I found thirty of them in bed, all complaining of about the same symptoms, as follows: headache, nausea and vomiting, and distress or pain at the epigastrium. In a few cases there was slight elevation of temperature. On the next day, October 4th, all except seven were up and about, and some of them continued well. Some of those who remained in bed gradually became feverish, and in a day or two several others who were feeling poorly went to bed. During the next ten days new cases developed every day, so that on October 16th there were thirty-seven sick in bed. From October 19th to October 31st five more came down, and a month later, or about December 1st the last case occurred, making a total of forty-three.

At first there was much doubt in regard to the na-

¹ Read before the Boston Society for Medical Observation, June 6, 1887.

ture of the disease. The sickness, which was evidently due to the odor from the painted furnace, masked for a time the disease that was developing. But as the children became more feverish a suspicion of typhoid fever was entertained, and this was placed beyond a doubt when well-marked symptoms of that disease were presented by some of the cases about October 12th.

As I was without the aid of a skilled assistant my records are not sufficiently full to allow a complete description or analysis, so that only a brief outline will be given.

A number of the cases were quite severe, others mild, and some so slight that if observed separately they could not have been called typhoid fever.

I will report briefly two cases as fair specimens of the more severe ones.

CASE I. L. P., aged eight years, went to bed October 6th. At first there was slight cough, and later the record mentions diarrhoea, tympanites, brown, dry tongue, sordes on the teeth, and a few rose spots. By degrees she became quite stupid and somewhat deaf. The temperature gradually rose at the beginning, and on October 15th was $103\frac{1}{2}^{\circ}$. It then varied between 103° and $104\frac{1}{2}^{\circ}$ until October 26th, when it began to decline, and became normal about November 1st. She sat up November 12th.

CASE II. S. K., aged thirteen years. Went to bed October 13th. Complained at first of stiff neck. Later there was epistaxis, diarrhoea, tenderness in right iliac fossa, and gurgling. On October 16th her temperature was 104° , and it remained about the same for two weeks, when it gradually fell, and she sat up November 10th.

There was one death. A feeble girl of six years was taken sick October 7th and died October 23d with peritonitis. No autopsy.

As to the individual symptoms, diarrhoea was sufficiently marked to be recorded in only nine cases, although I believe it occurred slightly in some others. Epistaxis was present in thirteen cases. Rose spots were noted only seven times. Possibly they sometimes escaped observation, but certainly they were absent in the majority of the cases. Many had slight cough throughout the sickness. Three had mild sore throat at the beginning; and in five other cases the most prominent symptom at first was stiff neck, or contraction of the muscles on one side of the neck, with pain and tenderness. Many of the children were dull and stupid, and in a few cases there was mild delirium. In other cases the dullness was less marked, and some of the children wished to sit up, but if allowed to do so they soon returned to bed.

As an indication of the degree of severity, I will mention the highest temperature recorded in each case: In 9 cases it was 101° or upwards, the highest being $104\frac{1}{2}^{\circ}$; in 8 cases, between 103° and 104° ; in 9 cases, between 102° and 103° ; in 7 cases, between 101° and 102° ; in 5 cases, between 100° and 101° ; in 5 cases, less than 100° .

Excluding the 5 cases in which the temperature did not reach 100° , the average duration from the time of taking to the bed until the temperature fell permanently below 100° was 16 days. The average time that the children were confined to the bed was 22 days. In 6 cases it was from 35 to 37 days, and in 3 it was less than 10 days. All recovered except the one before mentioned.

The number sick in each class was as follows: Of 50 school children, 35 were sick; of 14 larger nursery children, 6 were sick; of 10 smaller nursery children, 1 was sick; of 8 adults, 1 was sick.

In searching for the cause of this outbreak, many lines of investigation were followed up, with negative results. The drainage was in excellent condition; the milk and other supplies were pure; and there was nothing to be suspected about the premises at Milton. Moreover, four children who were not in Milton at all contracted the disease.

At the beginning of the sickness I suspected the water-supply on the third floor, where the school and larger nursery children were in the habit of drinking, because only those children were then affected, and the water, when first examined, was found to contain many dark specks. Its use for drinking was immediately prohibited. I then supposed that it came from a tank, but later found that the pipe led directly from the street. However, as we shall presently see, it is possible that its use had some relation to the sickness.

The most probable cause remains to be stated: On September 11th, two girls, aged seven and nine years, were brought to the Home from Chelsea. They were not well at the time of entrance, but it was thought that they were suffering merely from lack of proper care and nourishment. They continued weak and languid, sometimes up and about the house with the other children, at other times confined to bed. I was away from the city at the time, and did not see them until called to the Home, October 3d. They were then quite feeble, and appeared dull and heavy. The temperature of the oldest was 102° , which was the highest recorded in her case. It soon declined, but rose again on the 16th to $101\frac{1}{2}^{\circ}$, and again became normal in a few days. In the youngest, the temperature remained below 100° . They left the institution on November 5th. It was afterwards learned that another child of the same family, who remained at home, was sick.

Assuming that these children had the disease when they entered, it would be interesting to learn, if possible, how they could communicate it to the others. When they were able to be up they mingled with the school children, and ate with them and the larger nursery children. They also slept on the third floor with these same children. On that floor, opening from the hall in the centre, was a small water-closet, and in the hall close beside the door of the water-closet was a sink used by the children for washing, and, as before mentioned, the water was also used for drinking. These conveniences were used mostly by the school children, the larger nursery children being there only at night. This, of course, is only suggestive of a possible method of conveying the disease.

Besides the cases occurring in these two classes of children, there were two others yet to be considered. One was the laundress, who was taken sick October 21st. We may readily suppose that her sickness was caused by washing the soiled clothing, which for some days, at first, was not disinfected.

The other was a little boy in the smaller nursery, who was taken sick about December 1st, or at least a month after the last of the other cases. He had three sisters at the Home, all of whom were sick. They began to sit up between the 8th and 13th of November, and immediately afterwards he was allowed to

spend some time with them. He was the only child in the smaller nursery that had much communication with the other children.

It may be claimed that some of the cases included in this report were not typhoid fever; but, presenting as they did, mild symptoms of a typhoid character, without anything else to explain the sickness, and occurring in connection with undoubted cases of that disease, it is fair to assume that they were of the same nature.

Such cases are occasionally observed in private practice, in which, perhaps, no more than a suspicion of typhoid is entertained. It would hardly seem possible that their relative proportion is as great as the present group would indicate. Yet it is not unlikely that there are many such cases not recognized or not seen by a physician, but whose influence in reproducing the disease may be very considerable.

NOTE. The disagreeable odor came from the *outside* of the furnace. It was a small, portable furnace, situated in the children's play-room in the basement. It had recently been painted a drab color, and when the fire was started a faint, bluish smoke, with disagreeable odor, was given off, which could easily pass into the hall, and so through the house. Some of the adults had sick headache for a short time, but afterwards remained well. The same is true of several of the children. The drainage was found to be all right, and has not been changed in any way since.

REPORT ON DISEASES OF THE NERVOUS SYSTEM.

BY PHILIP COOMBS KNAPP, A.M., M.D.
THE SENSE OF TEMPERATURE.

GOLDSCHNEIDER has recently published¹ an elaborate and valuable study of the sense of temperature, employing for his tests metallic cylinder a centimetre in diameter. He finds that the sensibility to temperature is not equally distributed over the whole body, but that it is most marked in the parts most richly supplied with nerves. Heat and cold are perceived separately, so that parts very sensitive to heat are not sensitive to cold. Moreover, there is a definite intensity of sensation to temperature, which cannot be increased by increasing the irritation; each spot in the skin has an "absolute sensibility." By repeated observations he has determined the various points on the body which respond to different grades of temperature, and has represented them in a series of carefully studied diagrams. In testing the temperature sense clinically the cylinder, heated to a definite point, is placed on one of the most sensitive areas, the external canthus, the first interosseous space, etc.; if there is no response there must be a decided disturbance. Sensibility to cold is greater than that to heat. A difference in perception at any point of two or three grades from that given in his diagrams is not pathological, but if two different grades are felt as the same there is some pathological disturbance. The chief source of error is in the mental condition of the patient, who should, therefore, be made first to answer to some simple tests, such as that for vision. The sensibility to temperature is easily fatigued, and this may also lead to error. The author gives many interesting pathological observations, and urges that the test for the sensibility to temperature should no longer be re-

garded as a refinement of physical examination, for it is as important, and its results are as valuable, as the tests for the other forms of sensibility.

ACUTE INFECTIOUS NEURITIS.

Rosenheim reports a case² of "acute infectious multiple neuritis" of seventeen days' duration, which came to autopsy. The symptoms were of the well-known type, and there was an acute, hamorrhagic, inflammatory process found in the affected nerves—hyperæmia, small hamorrhages and increase of nuclei. He upholds Pierson's view that the implication of the cranial nerves is more significant of this acute neuritis than of the chronic degenerative form. Careful tests for all forms of bacteria, including tubercle bacilli, were made in vain. Rosenheim recognizes the resemblance between acute neuritis and infectious disease, and its affinity with beri-beri, but on the basis of his own investigations he cannot assume an organized virus as the morbid agent in multiple neuritis. Nevertheless, he regards it as an infectious affection, due to the action of a chemical poison on the nerve. These agents he believes to be the poisonous products of tissue metamorphosis caused by bacteria, which have set up some disease elsewhere in the body. This theory explains the not infrequent development of multiple neuritis after tuberculosis or acute infectious diseases, and Rosenheim is disposed to question whether multiple neuritis ever develops spontaneously when there is no previous tuberculosis or acute infectious disease. The toxic forms, from alcohol, lead, etc., are, of course, excepted. Eisenlohr is rather disposed,³ however, to question Rosenheim's conclusions. From clinical observation he believes that spontaneous forms do occur, without any previous tuberculosis or acute infectious disease, and he has noted that the affection is commoner at certain seasons and in certain years. The question is still an open one, but, although the cases are rare, there is an increasing body of clinical support to Eisenlohr's position, so that it seems justifiable to speak of an "acute infectious" multiple neuritis.

CHRONIC ANTERIOR POLIOMYELITIS.

With an increased knowledge of multiple neuritis the existence of chronic anterior poliomyelitis, the "general sub-acute anterior spinal paralysis" of Duchenne, has been doubted. Many of the cases where the diagnosis has been made were undoubtedly cases of neuritis, and the pathological evidence rested on two autopsies, both of them made a number of years ago, and neither of them being complete. Oppenheim⁴ has now published a case with autopsy, where there is no doubt as to the condition. The patient was a woman of fifty-two, who in August, 1883, began to have weakness in the right arm, which gradually involved the other limbs until she could not walk. At no time were there pains, paræsthesiæ, vesical or rectal disturbances, or cerebral symptoms. The trouble was limited to the motor sphere, the muscles atrophied, and there were various forms of reaction of degeneration, but there was no typical localization of the atrophy as described by Remak. The knee-jerk was

¹ Th. Rosenheim. Zur Kenntniss der acuten infectiösen multiplen Neuritis. Archiv f. Psychiatrie u. Nervenkrankheiten. XVIII, 782, 1887.

² C. Eisenlohr. Ueber acute Polyneuritis und verwandte Krankheitsformen mit Rücksicht auf das zeitliche und örtliche Auftreten. Berliner klin. Wochenschrift. 17 Oct., 1887.

³ H. Oppenheim. Ueber die Poliomyelitis anterior chronica. Archiv f. Psychiatrie und Nervenkrankheiten. XIX, 361, 1888.

⁴ A. Goldscheider. Eine neue Methode der Temperatursensibilitätsprüfung. Archiv f. Psychiatrie und Nervenkrankheiten. XVIII, 659, 1887.

retained at first, and there were fibrillary tremors of the muscles; later on, as the quadriceps atrophied, the knee-jerk disappeared. There was slight oedema, but no bed sores. The muscles of mastication and respiration were finally involved, and the patient died of failure of the respiratory apparatus. At the autopsy there was found an almost total disappearance of the motor ganglion cells in the anterior cornua, especially at the lumbar enlargement. Instead of them were found numerous spider cells with fine processes, a dense fibrous network, and a few free nuclei, with no material change in the vessels. The posterior cornua Clarke's column, and the rest of the cord were normal. There was a slight atrophy of the peripheral nerves, including their muscular branches, and some degeneration of the anterior roots, but this degeneration was in striking disproportion to the atrophy of the ganglion cells. There was pronounced degeneration of the affected muscles, but not as much as was expected from the complete reaction of degeneration. The case, therefore, both clinically and anatomically, answers all the requirements of chronic anterior poliomyelitis, which must still hold a place in nosology. The writer lays especial stress, in the way of diagnosis, upon the entire absence of sensory symptoms.

CEREBRAL HÆMORRHAGE.

Löwenfeld⁶ has recently published a work upon cerebral hæmorrhage which is of great value. He begins with a careful review of previous theories, and an elaborate study of the normal structure of the arteries. In discussing the morbid changes he holds that in dissecting aneurisms there is no breach in the intima or the muscular coat, but the blood probably passes through these coats by osmosis, and is extravasated beneath the adventitia. In a large number of apoplectic brains he has found a little-recognized change, granular degeneration of the muscularis, which he believes to be a senile change, although it is also seen in alcoholic subjects. He recognizes six forms of vascular dilatation, only three of which are of importance: circumscribed swellings with or without change in the vascular wall, and diffuse enlargements; the first being the common miliary aneurism. Miliary aneurisms have no connection with atheroma, but are due to a local increase in the blood-pressure, or a local change in the vessel wall causing diminished power of resistance, the latter being the commoner. Miliary aneurisms without changes in the walls are due to unrecognized changes or vaso-motor paralysis. He doubts the existence of periarteritis or atrophy of the muscularis, which are reported by Charcot and Bouchard, for the changes in the adventitia were comparatively insignificant; the inner coats showed most commonly fatty degeneration. He also rejects Turner's hypothesis of an inflammatory softening of the vessel wall. Although miliary aneurisms are often seen, Löwenfeld does not consider them as the source of the hæmorrhage, which usually comes from unexpanded vessels. In the walls of hæmorrhagic foci burst aneurisms may be seen, but they are usually also present in other parts of the brain. In renal disease without hæmorrhage the adventitia and intima are most diseased; in nephritis with hæmorrhage the muscularis is most affected. A careful study of the influence of increased blood-pressure, cardiac disease and toxic influences is

also given. In conclusion, he considers that the alterations in the vessels are due chiefly to factors emanating from the blood, which are either mechanical, dilating and rending the vessels, or due to alterations in the blood itself. The mechanical factors are:

1. More forcible action of the pumping apparatus, cardiac hypertrophy, marasmus with participation of the vessel walls without corresponding involution of the heart.

2. Obstruction of the arterial system — sclerosis, renal atrophy, obesity, constipation, sedentary habits, obstruction of the vascular system — myo-degeneration of the heart, uncompensated valvular failure, and emphysema.

3. Increase of the contents of the vascular system — plethora.

The alterations in the blood itself are:

1. Chemical: marasmus, nephritis, obesity, gout? alcohol, lead.

2. Parasitic: syphilis, rheumatism?

HEREDITARY CHOREA OF ADULTS (HUNTINGTON'S CHOREA).

In 1872, Huntington first described a form of chorea which is hereditary, and comes on only in adults. It appears in families, attacking one generation after another as the members reach adult life, but if it does not appear in one generation, the succeeding generation is sure to be free from it. It affects both sexes equally, and never appears before the age of thirty. It begins like ordinary chorea, increases to the most marked degree, and finally leads to mental disturbance, suicidal tendencies, and death. Recovery has never been observed. Huber⁶ has recently reported a case of this rare and almost forgotten form of chorea, and has made a careful study of the heredity, which has brought out a few new features. Huber's patient was a man of thirty-eight, who had been attacked by the affection at the age of thirty. The first symptoms noted were slight choreic movements of the eyes, which gradually extended to the head and limbs, until within six months it had become impossible for him to walk any distance, or to talk plainly. There were no other symptoms, except an easily induced fatigue and some disturbance of sleep, although the choreic movements had become so severe as to prevent the patient from working or from caring for himself. Inquiry into the heredity found eight other members of the family in this or previous generations who had had the disease. Huber visited the sister of his patient, who was at an asylum. She was attacked at the age of thirty-six, and the movements had increased to a most marked degree, so that her limbs and body were in constant motion, and her breathing was very irregular from the choreic movements of the diaphragm. She understood what was said to her, but could not speak. In this case, also, there were no signs of disturbance, except for the constant movements and a certain degree of mental impairment. The earliest account of any trouble was in the great-grandfather, who had four children, only one of whom was affected. One of the healthy children, however, had a son and a grandson who had the trouble, thus proving that the disease may skip a generation. The affected son, the grandfather of Huber's patients, had

⁶ L. Löwenfeld. Studien über Aetiologie und Pathogenese der spontanen Hirnblutungen. Wiesbaden, 1886.

⁶ A. Huber. Chorea hereditaria der Erwachsenen (Huntington'sche Chorea). Virchow's Archiv., CVIII, 267, 1887.

six children, three of whom had the disease. One of these choreic children had healthy descendants, the second died without issue, and the third was the father of Huber's two cases. None of the family, as far as known, had ordinary chorea. An autopsy on the father, who died demented, revealed pachymeningitis interna and meningitis.

Zacher⁷ has reported another case, which presents nothing materially different from Huber's case, except that his patient could temporarily control the movements. He considers the affection as allied to true chorea, in which, as is well known, psychical disturbances may occur.

PARAMYOCLONUS MULTIPLEX.

Starr⁸ reports the first case in this country of the very rare affection first described by Friedreich under the name of paramyoclonus multiplex, of which only about fifteen cases have thus far been reported. His patient was a man of thirty-three, whose symptoms came on after a strain of the muscles of the back. The characteristics of the affection, as described by Starr, are as follows: Paramyoclonus multiplex is a spasmodic affection of the muscular system, occurring bilaterally in symmetrically situated muscles attached at one or both ends to the trunk, and in muscles whose function is associated with these, consisting of a series of violent clonic spasms of considerable rapidity and severity, occurring only at intervals, and associated with fascicular tremors of the affected muscles, persisting during the interval between the spasms. It occurs after some mental or physical strain, and is not accompanied by any disturbance of sensory or motor functions, excepting by an increase of the superficial and deep reflexes. It can be excited by irritation of the skin or tendons. The muscles of the forearm and hand and of the lower leg and foot are not affected. The prognosis is favorable, and the treatment is strong galvanic currents to the spine. Starr considers it a distinct affection, which can be differentiated from chorea, hysteria, epilepsy, and even tic convulsif, to which, however, it is more or less closely allied. The nature of this affection is still unknown, although it is regarded as a functional neurosis.

VISUAL ALLOCHIRIA.

Magnin⁹ reports a curious phenomenon under the above heading, which was observed in a hypnotized hysterical patient. The patient had left hemianesthesia, but, when hypnotized, a touch on the left arm was felt as if on the right arm, and it produced contracture of the extensors of the right forearm. On testing vision, a similar phenomenon was noted. The patient detected colors with the left eye, and, when the fields of vision of the two eyes were separated by a screen, the colors were still detected by the left eye, but the vision was referred to the right. Irritation of the left conjunctiva caused the natural reflex movements in the right eye.

TRAUMATIC HYSTERICAL MONOPLÉGIA.

The study of the different forms of hysterical paralysis has of late attracted the attention of many of the French observers, but none of them have inves-

tigated the subject with so much care, or put our knowledge of it upon so firm a foundation as Charcot. In his latest volume¹⁰ he gives a detailed account of the affection, and advances a theory as to the nature of its production. Among other cases he describes one of a young man with a neurotic heredity, who, after a fall on the shoulder, gradually developed a paralysis of the entire arm, except the fingers. The arm was absolutely flaccid, there was no rigidity or contracture, the tendon reflexes were slightly exaggerated, and there was no atrophy. At the same time, there was a profound disturbance of sensibility over the whole arm, absolute anesthesia for all forms of sensation, and loss of muscular sense. There was, moreover, no modification of the electrical reactions, and no vaso-motor disturbance. The case is like others described by Charcot and by other French observers. That it is not due to a lesion of the peripheral nerves is shown by the fact that the anesthesia is not limited to a nerve-territory, but encircles the limb like a bracelet; that the tendon reflexes are not abolished; that there is no atrophy or reaction of degeneration; and that there were no vaso-motor disturbances in the skin. That it is not spinal is shown by the persistence of the reflexes, and the absence of atrophy and reaction of degeneration. That it is not cortical is shown by the absence of the signs of secondary degeneration—rigidity and marked exaggeration of the reflexes. It is due, however, to a disturbance in the cortex, but rather to a dynamic, functional lesion; in other words, to hysteria. Many of the cases have a neurotic heredity, and most of them show various hysterical stigmata, limitation of the visual field, hemianesthesia, etc. These paralyzes Charcot regards as identical with the paralysis dependent on idea of Reynolds. He next considers the various manifestations of hypnotism, and finds that in the cataleptic or somnambulant state there is a mental inertia, but not so great as to render it impossible to provoke various psychical functions as in a dream. The group of ideas suggested seem isolated, free from the control of the crowd of ideas which ordinarily make up the conscious ego, and actions thus suggested are performed mechanically. In the somnambulant stage, especially, it is easy by suggestion to produce precisely similar paralyzes. In these cases hypnotism has produced what Charcot calls an obnubilation of the ego, and paralysis has followed from direct suggestion. In the cases of traumatic monoplegia, the emotion caused by the accident has set up a condition of nervous shock which is allied to the somnambulant stage of hysteria. The sensation in the limb produced by this shock may be said to excite the idea of motor impotence, which may acquire force enough to be realized as a paralysis. The patient develops his own idea and suggests it.

REACTION OF DEGENERATION AND ELECTRICAL MEASUREMENTS.

Recent investigations by Stintzing¹¹ have given us many valuable data in regard to the strength of current required to produce electrical reactions, and the variations in different individuals. He has also studied

¹⁰ J. M. Charcot, *Léçons sur les maladies du système nerveux*, III, 299, Paris, 1887.

¹¹ Stintzing, *Ueber elektro-diagnostische Grenzwerthe*, Deutsches Archiv für klinische Medizin, xxxix, 76, 1886.

¹² Ibid. Die Varietäten der Entartungsreaction und ihre diagnostisch-prognostische Bedeutung. Deutsches Archiv für klinische Medizin, xli, 41, 1887.

⁷ Zacher, *Ueber einen Fall von hereditärer Choreia der Erwachsenen*, Neurolog. Centralblatt, January 15, 1888.

⁸ M. Allen Starr, *Paramyoclonus Multiplex, with a Report of a Case*, Journal of Nervous and Mental Disease, July, 1887.

⁹ P. Magnin, *Allochirie visuelle chez une hysterique hypnotisee*, Revue de l'hypnotisme, February, 1888.

with great care the various forms of degenerative reaction, with the result of furnishing us with many new facts and of putting the subject on a new basis. He measures the galvanic current by milliamperes on an Edelmann galvanometer, and the faradic current by the distance between the two coils in millimeters (Rollenabstand). He agrees with Erb in urging the importance of considering the density of the galvanic current, as well as its intensity, but his "unit-electrode," with a surface of three square centimeters, is smaller than the "normal electrode" of Erb (10 sq. cm.). He finds that variations in electrical excitability in the same individual for different nerves is, for the faradic current, 44 mm., and for the galvanic 2.3 ma. For the same nerve in different individuals it is less. 21 mm. and 1.2 ma. He finds that the ordinary law of irritability holds, AnZ very rarely (one per cent.) appearing before KaZ, although there is no fixed difference in the strengths of current required to obtain them. In over seventy per cent. of the cases An SZ appeared before An OZ. The averages of electrical excitability in the different nerves are given in the accompanying table.

The importance of these figures becomes apparent in Stintzing's second paper, where he discusses the different forms of reaction of degeneration. In these different forms, the quantitative changes in the electrical excitability of muscle and nerve are found to be of considerable importance; and it is also a point of considerable value to note whether the contractions be prompt and lightning-like or slow.

	Faradism. mm.	Galvanism, elec. ma.	Size sq. cm.
Facial	321	1.75	..
R. frontal	128.5	1.45	..
R. zygomatic	125	1.4	..
R. mental	124.5	0.35	..
Accessory	137.5	0.27	..
Musculo-cutaneous	135	0.17	..
Median	122.5	0.9	..
Ulnar (2 inch) above ext. condyle	130	0.55	..
Ulnar (between int. condyle and olecranon)	118.5	1.6	..
Radial	105	1.8	..
Crural	111.5	1.05	..
Peroneus	115	1.1	..
Tibial	107.5	1.15	..
Axillary	109	2.8	..
Anterior thoracic	127.5	1.75	..

MUSCLES.

Trapezius	116	1.6	12
Deltoid	123-100	1.2-2.0	12
Pectoralis major	117	0.1	6
Pectoralis minor	133-107	0.1-2.5	6
Serratus magnus	115-70	1.0-8.5	12
Supinator longus	109-106	1.1-1.7	3
Extensor communis digitorum	115-95	0.5-3.0	3
Extensor carpi radialis	112	0.8	3
Extensor pollicis brevis	118-107	1.5-3.5	3
Pronator teres	115	2.5-2.8	3
Flexor sublimis digitorum	138-116	0.3-1.5	3
Extensor carpi ulnaris	133-96	0.9-2.9	3
Abductor minimi digiti	115-110	2.5	3
Rectus femoris	123-35	1.6-6.6	20
Vastus internus	115-113	0.3-4.3	20
Tibialis anticus	123-196	1.8-5.0	12

His classification according to the second paper is as follows, the terms used referring to the character of the contraction, whether slow or prompt, and to the quantitative changes.

I. Highest degree. Complete reaction of degeneration with total unexcitability of the nerve.

NERVES.	MUSCLES.
1. { F., no contraction. { G., none.	{ F., none. (ished. { G., slow, increased or dimin.
2. { F., none. { G., none.	{ F., slow, diminished. { G., slow, diminished.

NERVES.

3. { F., none.
 { G., none.

MUSCLES.

- { F., prompt, much diminished.
 { G., slow, diminished.

II. High degree. Reaction of degeneration with partial excitability from the nerve.

4. { F., slow, diminished.
 { G., none.
5. { F., slow, normal.
 { G., none.
6. { F., prompt, much diminished.
 { G., none.
- { F., slow, diminished or normal.
 { G., slow, normal.
 { F., slow, normal.
 { G., slow, increased.
- { F., slow, much diminished.
 { G., slow, diminished.

III. Middle degree. Reaction of degeneration with retained excitability, but slowness of faradic contraction from the nerve.

(a) With slow galvanic contraction from the nerve.

7. { F., slow, much diminished.
 { G., very much diminished.
8. { F., slow, normal.
 { G., slow, normal.
- { F., none.
 { G., slow, diminished.
- { F., slow, increased or diminished.
 { G., slow, increased.

(b) With prompt galvanic contraction from the nerve.

9. { F., slow, diminished or much diminished.
 { G., prompt, much or very much diminished.
10. { F., slow, much diminished.
 { G., prompt, normal.
- { F., slow, much or very much diminished.
 { G., slow, normal or diminished.
- { F., slow, very much diminished.
 { G., prompt, much diminished.

IV. Low degree. Reaction of degeneration with prompt contraction from the nerve. (Partial reaction of degeneration of Erb).

11. { F., prompt, diminished or very much diminished.
 { G., prompt, diminished or very much diminished.
12. { F., prompt, much diminished or normal.
 { G., prompt, diminished or normal.
13. { F., prompt, diminished.
 { G., prompt, diminished.
- { F., none. (increased.
 { G., slow, much diminished or
- { F., slow, diminished.
 { G., slow, increased or normal.
- { F., prompt, diminished.
 { G., slow, increased.

According to Stintzing, the quantitative changes of the polar contractions are of minor importance, although, as a rule, An SZ equals or exceeds Ka SZ only in the severer forms. Several of these forms may be found at the same time in the different nerves and muscles, according to the severity of the process; and, during the progress of the affection, a low form may change to a high one, and *vice versa*. The careful study of the forms of reaction of degeneration present in the individual case cannot fail to be of value in deciding the question of prognosis, and the papers under consideration afford us the fullest and most elaborate classification that has yet appeared.

Reports of Societies.

NEW YORK COUNTY MEDICAL ASSOCIATION.

STATED MEETING April 16, 1888.

DR. JOSEPH E. JANVRI read a paper on

THE PRIMARY REMOVAL BY ABDOMINAL SECTION OF THE TUBE AND ITS CONTAINED FETUS IN CASES IN WHICH PREGNANCY HAS BEEN DIAGNOSTICATED, BEFORE RUPTURE OF ANY PORTION OF THE TUBE HAS OCCURRED.

This operation in question, he said, was one performed with the expectation of delivering the tube and its contained foetus intact, and done before the end of

the fourth month of gestation. In a paper read by him before the American Gynecological Society in 1886, he had advocated early laparotomy, as a rule in cases of tubal pregnancy in which hemorrhage had occurred, (instead of resorting to the use of electricity); thus removing all possible danger of further hemorrhage. In December of that year he reported at a meeting of the New York Obstetrical Society a case in which he had diagnosed tubal pregnancy at the fifth week, and in which death had occurred at the end of the seventh week, from a second hemorrhage resulting from a ruptured artery on the peritoneal surface of the sac; the first hemorrhage, which was extremely small, having taken place from the same artery nine days previously, and galvanism having in the meantime been employed to destroy the fœtus.

At that time, he said, he was convinced from this case, and from the other similar ones, that the time to operate was when preliminary or partial rupture occurred, as evidenced by the first hemorrhage; the primary collapse symptoms constituting an almost certain indication both of the pathological condition and of the need of immediate interference. In speaking of the symptoms of tubal pregnancy he had stated that he believed that it was easier to recognize this condition than a case of hydro-salpinx, and that the presence of an irregular decidual discharge in a woman who had missed a period, associated with the normal signs of pregnancy and an enlarging, fluctuating and exquisitely sensitive mass on one side of the uterus, and followed subsequently by symptoms of shock, could hardly be referred to any other condition, even as early as the fifth week. In a case of this kind he had also said that he would certainly perform laparotomy whenever the first symptoms of internal hemorrhage occurred.

Again, in a discussion at the January meeting of the Obstetrical Section of the New York Academy of Medicine in 1887, he had stated that in any case in which from the rational and physical symptoms he became convinced that tubal pregnancy was present, even before symptoms of a rupture of the peritoneal covering of the tube occurred, he would most earnestly urge laparotomy, and perform it if he could obtain the consent of the patient.

Dr. Janvrin then went on to say that up to the present time he had been able to find but one case on record in which the operation was performed prior to a laceration, or partial laceration, of the tube, and before the fourth month of gestation. This was one reported by Dr. Joseph Price, of Philadelphia, in the *Annals of Gynecology* (Boston) for March, 1888; and in a recent letter to Dr. Janvrin, Dr. Price had said concerning it: "The history was simply that of a delayed bleeding two weeks, and constant pain and nausea. I operated for extra-uterine pregnancy or pus-tube." He next referred to cases of laparotomy performed in tubal pregnancy, after one or more decided hemorrhages, reported by Lawson Tait, Martin of Berlin, and others in Europe, and by Drs. A. W. Johnson, of Danville, Ky., Joseph Price, of Philadelphia, S. C. Gordon, of Portland, Me., William Gardner, of Montreal, G. W. Tuttle, of New York, and Charles B. Penrose, of Philadelphia.

All such operations, performed after there had been a rupture of some part of the tube, he thought should be classed as *secondary* operations. So far as he knew,

the credit of first advocating the propriety of resorting to abdominal section and removing the ruptured tube, with the fœtus and blood-clots, was due to an American surgeon, the late Dr. Stephen Rogers, of New York, who as long ago as 1867 urged the claims of this operation in such cases.

The advisability of enlarging this field, by removing the tube with its contained fœtus before any rupture has occurred, and during the early weeks of gestation, (instead of employing electricity for the purpose of destroying the life of the fœtus), Dr. Janvrin said he had advocated on every possible occasion during the past year and a half. Until very recently he believed that he stood almost, if not quite, alone on this point; but during the last few weeks he had found that other gynecologists also had come to the same conclusion. Thus, in the *American Journal of Obstetrics* for April, 1888, Mr. Lawson said that, although he had never as yet been called upon to operate until after the sac had ruptured, if in any instance there was a reasonable supposition that there existed a tubal pregnancy which had not yet ruptured, he should recommend immediate operation. Drs. Joseph Price and Howard A. Kelly, of Philadelphia, he believed, were also in accord with this proposition. In a recent letter to Dr. Janvrin, Dr. Kelly had said: "The history of fœtuses which have been destroyed by faradization has frequently been associated with protracted suffering to the mother, and with conditions of chronic invalidism." Dr. R. P. Harris, of Philadelphia, in the *American Journal of Obstetrics* for August, 1886, had referred to several cases in which attacks of peritonitis had occurred (when the fœtus had been killed by electricity), several years subsequent to the death of the fœtus, and due to its presence in the abdominal cavity. Mr. Tait had also very recently (*American Journal of Obstetrics* for April, 1888), pointed out the danger of the placenta's going on to develop enormously after the fœtus had died from natural causes.

Up to the present time, however, the weight of opinion among American gynecologists was decidedly in favor of destroying the fœtus by electricity in some form, in cases in which a diagnosis had been made prior to the fifth month, and in which there had been no decided hemorrhage from the sac wall. Among the advocates of this measure stood Thomas, Lusk, Garrigues, Mündé and others of New York, and M. D. Mann, of Buffalo; and each of these, as well as others throughout the country, had had excellent results with it. In the *Annals of Gynecology* for February, 1888, Dr. Mann had stated that Dr. Janvrin was able to find only three cases in literature, including his own, where rupture of a vessel caused death without rupture of the sac. Since the publication of his paper before the American Gynecological Society, however, he had seen one other case in which this condition was fully demonstrated at the autopsy. Two other important specimens he had recently seen in cases in which abdominal section was performed. In one of these the fœtus had died from pressure of blood-clots, at about the end of the third month, and several other attacks of hemorrhage had occurred between this date and the seventh month, when the tube, fœtus, clots, etc., were removed. In the second case, where laparotomy was performed at the seventh or eighth week, there was a history of slight hemorrhage from the sac wall and slight peritonitis for a week or ten days prior to its removal.

In the paper referred to, Dr. Mann had expressed the opinion that if rupture has not occurred electricity should take the place of laparotomy. To this proposition Dr. Janvrin said that he would assent, provided no experienced laparotomist could be found to operate, but not otherwise. With a capable operator at command he would urge abdominal section just as soon as the diagnosis had been made, and before any hemorrhage from the sac, with its subsequent attacks of peritonitis, could take place. These frequently recurring attacks of slight hemorrhage were exceedingly dangerous to the life of the mother, and when they had occurred, and the time came when laparotomy must be performed, the patient was in bad condition for the operation; while the procedure itself was much more complicated than at an earlier period. The same thing could be said in reference to waiting to perform laparotomy until serious symptoms had supervened, after the fetus had been killed by electricity. Then, too, there would be more or less adhesions to deal with, and the work to be done would be much more difficult than the removal of a simply enlarged and still unruptured tube containing the fetus, with no products of inflammatory processes to interfere with its early extraction.

DISCUSSION.

Dr. W. T. Lusk said that he wished he could be convinced by the arguments advanced in the paper that the time had come for the doing away with galvanism in the treatment of tubal pregnancy. It would certainly be very gratifying if we could always perform laparotomy as soon as this condition was diagnosed, as the operator would thus secure an amount of *relief* which was not possible when electricity was employed. Destruction of the fetus by the latter was a far less brilliant method of procedure, and when it was attended with successful results the operator was not infrequently subjected to insinuations that extra-uterine pregnancy had never existed at all. At the same time, he was so thoroughly convinced that these cases could be efficiently and safely treated with galvanism after the appearance of the characteristic colicky pains that he did not as yet feel justified in abandoning so satisfactory a method. The operation was a very simple one, requiring no special skill, so that it could be practiced by any one; and, as a rule, the results were all that could be desired.

Dr. Lusk went on to say that he had had two of his cases, occurring in private practice, under observation for a long period; one of them for six years and the other for four years. At the time the first of these patients was operated on it was thought that she was dying. After consultation with Dr. Thomas it was decided to employ electricity, and the result was entirely satisfactory. There had never been the slightest bad effect, and at the present time the mass remaining was about the size of a pigeon's egg. In the second case, in which there had been the colicky pains and other usual symptoms connected with tubal pregnancy, the tumor was now about the size of an English walnut. Since the operation the patient had given birth to a living child, and there had been no trouble whatever at the time it was born.

Now, if we had such an efficient method which was perfectly safe in the great majority of instances, he could see no good reason for giving it up. Even if inflammation, suppuration, or ulceration should ensue

we could usually perform laparotomy under such circumstances with satisfactory results. He was, therefore, convinced that in the present state of our knowledge this was the best mode of proceeding. As to performing laparotomy before rupture of any portion of the tube had occurred, the difficulty of diagnosis at this time was exceedingly great, and Lawson Tait had told him personally that he did not feel able to make it; or at least this was what Dr. Lusk understood him to say.

In regard to the other five cases which he had treated with electricity he could not speak with the same confidence as of the two just mentioned. The results were satisfactory at the time, but as the women were hospital patients he had not been able to follow up their subsequent history. If he could be convinced that laparotomy was just as safe as electricity he should certainly join the ranks of those who advocated this procedure. As to the danger of the growth of the placenta after the fetus had been destroyed, this seemed to him to be very slight, and, in fact, he questioned very much whether such a danger really existed at all.

Dr. GEORGE J. HARRISON said that his experience with galvanism had been very favorable. He had certainly destroyed the fetus by this means in three cases. He had examined one of these patients two years after the operation and had found the sac much shrunken. Since then the woman had given birth to a child in a normal manner. There had also been no evil results in his other cases. Notwithstanding this, however, he thought the experience of the profession was at present too limited to enable us to arrive at any definite conclusions and the tendency of modern gynecology was undoubtedly to advance in the line indicated by Dr. Janvrin. The results obtained by some of the German operators especially had been such as to have great weight in convincing him of the practicability of laparotomy in this connection. Still, at the present time he was not quite willing to declare himself in favor of the general adoption of the procedure in this class of cases. The statement of Dr. Janvrin in regard to the presence of extreme sensitiveness in the tumor of tubal pregnancy being one of the diagnostic signs of the condition he thought, should perhaps be somewhat modified, as he had himself observed instances in which this did not exist.

Dr. ANDREW F. CURNER said that his opinions on this subject were largely theoretical. It seemed to him one of the inconsistencies of modern gynecology that while the abdomen was constantly being opened for the removal of tumors which might be doing the patient no injury, operators should refuse to do the same for the relief of a condition which, if uninterfered with, was absolutely sure to prove fatal, and should leave the ease to the uncertainties of a method like electricity, although in many, perhaps most cases, the latter had proved successful. Men, he thought were apt to be influenced by their surroundings, and if some of those who were the strongest advocates of electricity should meet with a fatal result in any of their cases, they would not perhaps be so enthusiastic in its favor. Several years ago, the late Professor White, of Buffalo, had advanced the proposition (which he thought was a very sound one), that whenever there is in the abdominal cavity an extraneous body which is liable to cause fatal results, the proper surgical course is to open the abdomen and remove it.

Again, the possibility of the subsequent growth of parts connected with the fœtus ought not to be ignored, since such men as Tait and Knowsley Thornton had spoken of it as a very serious danger.

When gynecologists performed laparotomy so frequently for ordinary pyo-salpinx or hydro-salpinx, why should they hesitate to open the abdomen for so grave a condition as tubal pregnancy? Probably the reason why this matter had not attracted more attention than it had was because these cases were so seldom seen. If this were the case, it showed the importance of more fully warning those who were to become family practitioners, as well as those who were to become mothers, of the dangers of such an accident and the necessity for the early recognition of the condition. So far as he was aware, but little attention was paid to the subject in the medical schools.

Dr. Lusk said that in considering laparotomy in connection with pyo- or hydro-salpinx and with tubal pregnancy, it was important to remember that there was this difference, that while the former conditions could not be removed by electricity, it was, as a rule, entirely feasible to put an end to tubal pregnancy by this means. If this were practicable in the case of pyo-salpinx also, he did not think it would be right to resort to laparotomy until electricity had first been tried. He then spoke of the importance, in arriving at a correct diagnosis in many cases, of making a thorough examination of the patient under ether, and referred to two cases in his own experience illustrating this point.

Dr. A. PALMER DUDLEY said that the all-important point seemed to him to be the question of diagnosis; and he should very much like to know how to make the diagnosis. Even Mr. Tait, according to Dr. Lusk, had confessed his inability to do this before any rupture had taken place. If the diagnosis were once established, the matter of treatment was sufficiently easy, whether electricity or laparotomy were resorted to. Under the circumstances referred to by Dr. Janvrin, laparotomy was a comparatively simple operation, and no more dangerous than when it was done for hydro- or pyo-salpinx. Dr. Dudley then related a case which seemed to him to show very strongly the difficulty of making a correct diagnosis. The patient was a young married woman of seventeen, who was irregular in her monthly periods, and who had already had one child. The cervix uteri was soft, and she suffered from nausea and vomiting. There was a pulsating soft tumor, extremely sensitive to the touch, which Dr. Dudley thought was probably due to tubal pregnancy. He proposed laparotomy, but this was refused, and the patient passed from observation. Two months afterward she returned to the hospital clinic, still suffering from nausea and vomiting, and at this time she consented to the operation. This was performed two weeks ago, and on opening the abdominal cavity he found pyo-salpinx on the right side, while the tube was twisted around so that its fimbriated extremity was attached to the bladder, behind which the ovary was lodged. The fimbriated extremity of the other tube was attached to the rectum, while under the pyo-salpinx there was a parovarian cyst. There was a frightful hemorrhage during the operation, but the patient was now recovering. Here, then, was a condition other than tubal pregnancy, giving rise to the symptoms which Dr. Janvrin had mentioned as

characteristic of the latter. In conclusion, he said, that he would not hesitate to resort to laparotomy early if he was able to make the diagnosis of tubal pregnancy.

Dr. Dudley having stated, in reply to a question by Dr. Janvrin, that in the case which he had narrated he had not observed an irregular decidual discharge, Dr. Janvrin said that he regarded this as the most important point in the diagnosis of tubal pregnancy. If the symptoms which he had mentioned (leaving out those of shock, which were due to rupture) were noted in any case, he thought there would be no difficulty in making out the diagnosis before rupture of any portion of the tube had occurred. These, it would be remembered, were the presence of an irregular discharge in a woman who had missed a period, associated with the normal signs of pregnancy and an enlarging, fluctuating, and exquisitely sensitive mass on one side of the uterus.

Dr. Lusk had stated that after the employment of electricity there was very little danger of inflammation, ulceration, and other bad effects. This was no doubt true as a rule, but certain cases had been reported in which it had been followed by evil results. Thus, Dr. Mann had published in the article referred to in the *Annals of Gynecology*, two such cases. As to Mr. Tait's views on the diagnosis of tubal pregnancy before rupture, in the very last number of the *American Journal of Obstetrics* (April, 1888), he stated that he had never been able to make the diagnosis at this time because he had not been called in any case until after rupture had occurred. The German cases referred to by Dr. Harrison were all secondary operations, and, so far as he was aware, the only primary operation which had as yet ever been performed was that of Dr. Price, of Philadelphia, which was done in September last.

Recent Literature.

The Principles and Practice of Operative Surgery.

By STEPHEN SMITH, A.M., M.D., etc. New and thoroughly revised edition. Illustrated with 1,005 wood-cuts. Philadelphia: Lea Brothers & Co. 1887.

This excellent and very valuable book of 877 well-filled pages is one of the most satisfactory works on modern operative surgery yet published. Its author and publisher have apparently spared no pains to make it as far as possible an ideal, and their efforts have apparently given it a position prominent among the recent works in this department of surgery. The book is a compendium for the modern surgeon, and since the task in a field so comprehensive is by no means an easy one, the skill shown by the writer in the execution of his plan to produce his "hand-book" is much to be admired. He has recognized the impossibility of covering the entire subject in detail, and has adopted a method of giving only important facts and principles, unencumbered by a mass of theories, data, and statistics. This concise method of writing has necessitated many positive statements; but the exceedingly commendable system of references always gives the author's authority for his facts in the name of some eminent surgeon, thus furnishing also a ready clew to more extended information, should the reader wish further details.

These abundant foot-notes are ample testimony to the thoroughness and exhaustive efforts of the writer to obtain the data from which the volume is compiled. The present edition, the only revised edition since the first publication of the work in 1879, presents many changes from the original manual. The volume is much enlarged, and the text has been thoroughly revised, so as to give as far as possible the most approved methods in aseptic surgery, and the latest instruments known for operative work, the data for the former being derived from methods at present in vogue at three of the greatest surgical centres of the world; namely, Vienna, New York, and London. It is difficult to review in detail a work covering so broad a field, and containing such a vast amount of information. It would be phenomenal if, even in some minor details, such a work was found above criticism. For example, among intestinal sutures, it is rather surprising that Jobert's has found so conspicuous a place. Again, Gegenbauer is credited with the suture of Gussenbauer (page 493), but even so able a writer as Treves¹ makes similar errors, which are really of secondary importance.

Osteoclasis is also a subject where the writer has departed from the general rule, and the paragraph on this operation and its application is disappointingly brief. Strongly contrasted with this, however, is cerebral or abdominal surgery, where marked changes appear, and justly in accordance with the rapid improvements in these branches, cranio-cerebral topography being especially expanded. It can be truly said that as a hand-book for the student, a companion for the surgeon, and even as a book of reference for the physician not especially engaged in the practice of surgery, this volume will long hold a most conspicuous place, and seldom will its readers, no matter how unusual the subject, consult its pages in vain. Its compact form, excellent print, numerous illustrations, and especially its decidedly practical character, all combine to commend it.

Questions and Answers on the Essentials of Physiology. Prepared especially for Students of Medicine. By H. A. HARE, B.Sc., M.D., etc. Small 8°. pp. 170. Philadelphia: W. B. Saunders. 1888.

This appears to be the first of a series of "question books" or "quizzes," and is devoted to physiology proper. The principal facts of our present knowledge are well given, although, of course, with that exasperating brevity which the size of the book demands. In some points the information is surprisingly good and fresh; in fact, there are but few points on which serious exceptions need be taken. There is, we believe, also, an interleaved edition, in which the student may note those opinions of his special instructor; that is to say, examiner, when they differ from those of the various writers whose views are here collated. In short, those who like this sort of book will probably find it just the thing they wish to have.

—The *British Medical Journal* gives the following as the number of medical students in the following universities in the winter session just elapsed:—In Vienna, 2,287; Munich, 1,369; Berlin, 1,316; Würzburg, 956; Leipzig, 794; Prague, 566; Graz, 501; Griefswald, 471; Breslau, 382; Freiburg, 350.

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TREATMENT OF CHRONIC INFECTIOUS DISEASES.

In a recent "Conference" before the Faculty of Medicine, Paris, Professor Bouchard discusses the method of treating chronic infectious diseases, in the light of modern notions of etiology. He defines disease as "the sum of functional operations and secondarily of anatomical lesions which are produced in the economy under the influence of morbid causes, and the reaction of the organism against the latter." This definition, he says, assigns to the reaction its legitimate place, while avoiding the exaggeration of the Schools, according to which the disease consists altogether in the curative effort. Sometimes this reaction is reflex, nervous, as where the combined energies of the principal systems of functions are called forth to protect the organism as a whole, and to assist the suffering part; sometimes it is local and elemental, limited to the organic particles of the tissue which is suffering the attacks of the morbid agent, and which react, on their own account, without the aid of the nervous system. Such a reaction as the latter implies, can be witnessed in any tissue, as the cornea, whose nerves are divided, and in which an eschar is made with a caustic; a process of elimination and cicatrization takes place, and wholly without nerve-influence.

Besides those cases where the reaction is sufficient, and those where it is insufficient to bring about health, that is, those that terminate in recovery, and those that terminate in death, there is a third class of cases which seem to go on neither to the one nor to the other of these results, and constitute chronic diseases.

What is a chronic disease? A disease, says Professor Bouchard, becomes chronic, not because there is not a sufficient reactional effort, but because of the permanence of the perturbing agency. Despite the incessant struggles of the economy to return to the normal state, it ever exhausts itself in futile and ineffectual efforts against a persistent cause. This permanent cause may be the pathological sequel of an acute disease, for example, a valvular lesion of the heart, stenosis of the pylorus. Another example is seen in

¹ Manual of Surgery, Vol. III, p. 266.

diabetes, although this is generally classed as a diathetic disease, that is, a disease caused by a permanent vitiation of nutrition; the cells of the economy do not consume sufficiently the sugar in a given time. The glucose, which continues to be fabricated in normal quantity, accumulates in the economy, whence result hyperglycæmia and glycosuria. Here the reaction of the organism is apparent enough; it tries to get rid of the excess of saccharine matters, and does eliminate them by the urine, and without this elimination the patient would soon die of blood-poisoning; this curative effort is however insufficient, and the disease, being due to a permanent dynamic trouble, persists and becomes chronic.

Among other causes of chronic diseases, Bouchard refers to the influence of certain microbes which get possession of certain parts of the organism, and make their permanent habitat there. They are enabled to do this "because we renew incessantly the nutritive matter which they live upon, or because we destroy or eliminate certain matters which they secrete, and whose accumulation would soon compromise their activity and development." Bouchard regards the bacterial discoveries of our times as destined to revolutionize medicine as they have already revolutionized surgery. In fact, the triumphs of surgical antiseptics have made our epoch memorable in the annals of the healing art, and although the progress thereby achieved has been chiefly in the direction of prophylaxis, yet it may be affirmed that the antiseptic treatment of infections, as now incorporated in the practice of the day, has been a fruitful gain over past therapeutic methods. Favus has yielded to vigorous antiparasitic treatment, and lupus, a disease which formerly stuck fast to the individual all through his life, till he finally succumbed to general tuberculosis, has shown itself to be amenable to a suitable local medication, that is, scarifications and curetting. The same may be said of chronic abscesses, and especially the so-called "cold" abscesses, and ossifluent abscesses; free incisions, with thorough drainage and copious disinfectant washings, followed, if necessary, by curetting and topical applications of iodoform, often bring about a rapid cure, whereas, formerly, there was nothing for the patient to look forward to but interminable suppurations and general tubercular infection. The abdomen has been opened antiseptically for peritoneal tuberculosis, the diseased glands removed, and the patient has got well, and what has been done for the peritoneum has been done for the pleura and other serous cavities. The antiseptic treatment of empyema and chronic swellings of the joints has given especially brilliant results.

How is it with respect to cancer? This disease is already treated by surgeons as if it were an infectious disease, and we have seen the late Congress of Surgeons recommend, in order to prevent relapses, that thorough ablation should be performed before the end of the second month of the development of the disease and with the affected gland or organ all the glands in

the vicinity should be removed, even if they appear to be healthy.

Such has been the influence of microbiotic doctrines on surgical therapeutics, and we can but hope that internal pathology will ere long profit by improved knowledge of the human organism and its reactions, and of the causes of chronic maladies, whether these be animate or inanimate.

REPORT OF THE BOARD OF HEALTH OF THE CITY OF BOSTON FOR THE YEAR 1887.

If we are unwarrantably tardy in noticing this report it is not because we are indifferent to its great value. Comparatively few persons, we fear, are aware of the admirable summary which it gives of all matters relating to the health of Boston, and to its mortality during the past year; or of the importance of such a clear presentment of the facts relating to our sanitary condition as are to be found in this document.

The total death-rate for 1887 (25.18 per thousand) is larger than in any like period for several years past, which is partly accounted for by the unusual heat which prevailed during the summer months, and by the prevalence of measles or scarlatina during the latter half of the year. Moreover, no account was taken of the undoubted increase of the city's population since the census of 1880, and which alone is sufficient to account in great measure for the apparent excess of mortality over that of preceding years. "The Board of Health believes that an enumeration of the inhabitants undertaken by the police, as is done in several of our large cities, in the years which intervene between the census years, would show that our population has largely increased since the last census was taken, and that the city's death-rate is not actually so large as is here given."

A very convenient table is given on page 5, which shows at a glance the comparative mortality of twenty-five of the principal fatal diseases during the year 1887. As usual, pulmonary consumption heads the list, with 1,500 deaths, in round numbers. Since the same number of deaths from this disease occurred in 1884, when the total number of inhabitants must have been considerably less than at present, the result must be considered satisfactory. Pneumonia is the next most fatal disease, having caused 795 deaths, but it is fair to conclude that more or less of these were from other diseases which are often confounded with it, such as pulmonary œdema, from acute bronchitis, in aged persons, or patients with chronic renal and cardiac disease, and broncho-pneumonia, especially in puny children. Of 232 deaths from "pneumonia" in patients under five years of age, a considerable number were probably the result of broncho-pneumonia, a disease differing in its causes, its clinical history, its pathology, and its lesions, from genuine pneumonia.

It may surprise some of the readers of this report that "heart disease" was the third most frequent

cause of death, numbering 619 victims. Probably here, also, we must make allowance for errors in diagnosis.

The remarks on the subject of cholera infantum, emphasizing the important relation of this fatal disease to defective sanitary conditions and unwholesome diet, are most suggestive, and show the necessity of a better acquaintance with these matters among the poorer classes of the community, a want which the Massachusetts Emergency and Hygiene Association is endeavoring to supply. It is in vain to expect any great diminution of the mortality of our city until some notions, at least, of better ventilation, better cooking, and the value of cleanliness are more diffused among those who furnish the largest proportion of disease and of deaths.

There were four cases of small-pox during the year, which were removed to the hospital, and all recovered. It is somewhat remarkable that while the city maintains at a considerable expense a special building for this disease, the spread of which is preventable by vaccination, there is no hospital for the isolation of other contagious diseases, which, in the aggregate, destroyed 806 persons during the year. New wards for contagious diseases at the City Hospital, lately opened, in a measure supply this want.

We are surprised that pneumonia is not yet included among the zymotic diseases. It is now generally admitted that it is in a certain degree an infectious disease, in all probability caused by a micro-organism, even if the specific germ be not definitely settled; also that it is epidemic in certain localities and in dwellings of bad sanitary condition. Its clinical history shows it to be a zymotic. It has a definite cycle of duration. Its temperature curve is more specific than that of typhoid fever. If rheumatism be a zymotic, which we believe to be true, pneumonia should be included in the same category. One would think it could, at least, claim a better right than alcoholism.

Besides the statistics of death and of fatal diseases, there are many other subjects relating to the public health, especially in sanitary matters, which are presented in this valuable report, but which we have not space to allude to.

A GERMAN VIEW OF INTUBATION OF THE LARYNX.

At the Seventeenth Congress of the German Society of Surgery, held in Berlin April 4-7th ult., Thiersch, of Leipzig, gave his experience with O'Dwyer's method. He has performed intubation of the larynx in thirty-two cases of diphtheritic croup. In fourteen of these he was obliged to remove the tube and perform tracheotomy, on account of attacks of suffocation. Only three patients got well after intubation, and without tracheotomy. He attributed these rather discouraging results to the exceptional gravity of croup in Leipzig. Intubation, Thiersch

says, may be substituted for tracheotomy in cases of croup where there is only a limited neo-membranous formation and no swelling of the vestibule of the larynx. On the other hand, when the epiglottis is tumefied, or when there is swelling of the mucous membrane below the vocal cords, or when there is an abundant membranous formation, tracheotomy is obligatory, and intubation can do no good.

In favorable cases, amelioration appears immediately after placing the O'Dwyer cannula in the wind-pipe.

Some of the inconveniences of intubation (to say nothing of its difficulties) are as follows: Deglutition is badly performed; the child swallows the wrong way. This is due to the presence of a stiff, open tube in the larynx, and there is also danger of pneumonia by aspiration (Schluck pneumoniae). On this point he was disposed to lay some stress. Sometimes the child complains of pains, and indicates the seat; erosions are found in the trachea as the result of intubation, and may open the way to general infection. Sometimes the child expels the cannula in a fit of coughing. Children treated by this method need constant watching, for they are in perpetual danger of oedema of the glottis, or of being choked by the membranes, and in such cases the presence of the physician is necessary to remove the tube and false membranes, and, it may be, perform tracheotomy.

Rehn, of Frankfort-on-the-Main, was of the same opinion as Thiersch on the subject of intubation. He had treated fourteen cases of croup by this method; ten of them died. The most of his patients swallowed with such difficulty after intubation that he was obliged to feed them by the cesophageal sound or by lavements. In two instances the cannula was coughed up and swallowed by the patients, and afterwards passed by rectum.

Rose, of Berlin, said that he was not an advocate of intubation. He was an ardent tracheotomist, having performed the operation two thousand times, with a mortality of 71.6%. This gave him a percentage of 28.4 of cures, to offset 21% of recoveries under intubation in America.

REMOVAL OF BLOOMINGDALE ASYLUM.

SOME months ago an association interested in real estate in the upper part of the city of New York sent a memorial to the legislature requesting that streets should be cut through the grounds of the Bloomingdale Insane Asylum, (the insane department of the New York Hospital), which they claimed was not in reality a charitable institution. Since then a committee of the State Senate has been making an investigation of the charges brought against the asylum, and two reports, a majority and a minority report, have just been presented from it.

The former, signed by four members of the committee, states that after a full investigation the charge

that any denial of visitation has been made to the State Board of Charities cannot be sustained. As to the question whether or not the institution is in fact conducted as a public charity, and whether or not free patients are admitted there, the committee finds that the statement of the asylum authorities is accepted by the memorialists. The position assumed by the latter is that the system of charges adopted at the asylum takes the institution out of the category of charities and puts it on a footing with a private asylum conducted for gain. The committee is of the opinion that such cannot fairly be said to be the case. Of patients treated during the past year, eighty per cent., as appears by the report, were absolutely free patients. The report further states that it does not appear that worthy objects of charity have been excluded, so that pay patients could be received at higher cost, and that exemption from taxes bestowed upon the New York Hospital is of like character with that granted to similar institutions.

The committee visited the asylum grounds, and reached the conclusion that "under existing circumstances the public interest would not be subserved by cutting through streets to the injury, if not to the destruction, of buildings upon the asylum property, or by bringing the buildings of the asylum into close proximity to the public streets, and that in the present state of affairs there is no pressing need for the opening of the streets referred to in the memorial. . . . It would be unwise to compel a hasty abandonment of Bloomingdale Asylum even after a removal had been determined upon, which from appearance may soon be done, it will be necessary in view of the public interest, that time should be given for the completion of new buildings before the asylum is forced to abandon its present site."

A minority report, signed by two members of the committee, advises that the streets referred to should be opened within two years. This report states that if the asylum were removed its lots would be more valuable for other city purposes, recommends that it should be removed to the same relative distance from the thickly populated portion of the city as it was seventeen years ago, and furthermore claims that the city loses a large amount of taxes on account of the asylum lots being free from taxation, and that the citizens, as a rule, hesitate to have their residences near an institution of this character.

REGULATION OF HYPNOTISM.

At the recent meeting of the French Association for Advancement of Sciences at Oran, a motion was passed recommending the government to forbid the practice of hypnotism, except by physicians and as a therapeutic measure. The Belgian Academy of Medicine, at its regular session in Brussels (March 21st), had a similar resolution up for deliberation, but it will not be put to vote till the next meeting.

MEDICAL NOTES.

— The astonishing statement is made by an English contemporary that two hundred inquests were held in one year by the same English coroner on babies overlain by adults sleeping in the same bed with them. This, if true, of course indicates something worse than carelessness on the part of the parents. It is suggested that the system of infant life insurance so much in vogue in England may furnish a key to this singular mortality.

— The *Fort Wayne Medical Journal*, having indulged in the following reflections about microbes:

Some M.D.'s are downright skeptics.

Devoid of faith in antiseptics;

The very name of microbe hate,

The chief of whom is Lawson Tait.

the *Medical Standard* most pertinently remarks that this is the most severe cut Mr. Tait has had to endure; nobody previously had ventured to insinuate that he was a microbe.

— The following inducement to invalids to visit Florida is found in a Jacksonville newspaper:

"For the information of my acquaintances as well as strangers in this city, the surrounding villas, also throughout the State, I publish my system for embalming for the preservation of the dead in a manner life-like as an eminent success. My knowledge obtained from the required study with the practical operation, together with the undoubted excellence of the fluids employed and instruments used render failure an impossibility. My rooms are open all hours, day and night, hence personal calls or telegrams requiring my services either at home or any part of the State, are promptly answered. I am the oldest established undertaker in Jacksonville, with stock of metallic and wood caskets of large proportions, embracing the cheapest on up to the most expensive, and in all sizes. Bodies prepared with great care for shipment, regardless of time or distance."

BOSTON.

— A bill has been favorably reported to the State Senate from the Joint Committees on Water-Supply and Drainage to protect the purity of inland waters, and to require consultation with the State Board of Health regarding the establishment of systems of water-supply, drainage, and sewage.

— The State Legislature has, despite the advice of the State Board of Health that good oleomargarine was better than poor butter, passed a vote of discrimination and extermination against this invention, and rancid butter may now resume its sway on the tables of cheap boarding-houses, having proved itself too strong for even sweet and pure animal fat — a case of the survival of the unfittest.

— The Board of Overseers of Harvard College, after a full discussion, voted last week, 12 to 6, adopting substantially the minority report of the Committee on Athletics that, in its opinion, an undue prominence is now given to athletic contests in the College, and the exercises and abuses attending the same, and

mainly incidental to intercollegiate contests, should be checked and guarded against in the future; that intercollegiate contests should take place only in Cambridge, New Haven, or such other New England city or town as the Committee on Athletics may from time to time designate; that university teams alone should be permitted to take part in intercollegiate contests, and that students should be prohibited from taking part in contests with organizations not belonging to the university, except on Saturdays and holidays. Thus a matter of considerable practical importance seems likely to be settled on a basis which seems just and wise.

NEW YORK.

— The organization has been effected of a new charitable institution, to be known as the New Amsterdam Eye and Ear Hospital, the executive surgeon in charge of which will be Dr. T. R. Pooley.

Miscellany.

TYPHOID FEVER CAUSED BY DRINKING WATER.

ANOTHER instance has been added to the long list of epidemics of typhoid fever caused by drinking water. An epidemic broke out in February in a large boarding-school at Quimper, France, and one-sixth of all the inmates were attacked, with a mortality of one in eleven. The epidemic was confined to the Quimper boarding-school, the rest of the town being exempt.

An investigation by the health authorities showed that whereas the city in general is supplied with aqueduct water from a healthy source, the school in question obtains its drinking water from a well. Moreover the boarding-school is surmounted by a elevated plain which is a market; the washings of the excrements of human beings and animals can easily penetrate the sub-soil of the school-building premises, and contaminate the well. In fact, microscopic examinations of the water of the well are said to have revealed numbers of the characteristic typhoid bacillus.

One woman living some distance from the school, but who had been in the habit of obtaining her drinking water from the school well, took the fever and died.

DERMATOSES FOLLOWING MENTAL SHOCK.

DR. DEBOIS-HAVENITH, writing in *La Clinique*, adds some further instances of dermatoses following mental shock to the case of purpura hemorrhagica recently described by Professor E. de Smet. The *Lancet* quotes the following:

"1. An unmarried lady who had been present when a man armed with a spade violently attacked another man, was much upset by the sight, and did not regain her accustomed composure for some days. Three weeks later bullæ presented themselves on different parts of the body, and before long, the entire cutaneous surface was covered with an eruption, having the characters of foliaceous pemphigus, accompanied by

incessant pruritus. Arsenic, quinine and other remedies exercised but little effect, or at least only a temporary one, for the patient succumbed, after four years, to a state of marasmus. 2. A little girl of ten was with difficulty saved from a burning house. From that time her appetite became bad, and she was haunted by constant nightmares and visions of houses on fire. A month afterwards a pemphigoid eruption made its appearance on the nose. It spread to the mouth and then disappeared. Shortly, however, it again manifested itself, covering a large part of the body. Iron and quinine appeared to be of but little service, for in nine months' time the eruption was as copious as ever. Two or three drops of Fowler's solution of arsenic three times a day soon worked a marvellous improvement, which it was evident was really due to the arsenic, for twice when the medicine was intermitted for a time the eruption returned. 3. A married woman had a quarrel with her husband, who struck her on the cheek with a key. Four days afterwards an eruption came out on the wrists, the hands, and the feet. This eruption had the characters of Hebra's multiform exudative erythema, and was accompanied by intense itching. On the lips there was a vesicular tumefied eruption and patches on the tongue. The whole disappeared in three weeks.

PERMANGANATE OF POTASH AND AMMONIA IN COBRA BITE.

A CASE of cobra bite resulting in recovery is narrated by Mr. Percy A. Rigby, Surgeon at Sonthal Pergumnahs (see *Indian Medical Gazette*, Vol. xxii, No. 12, and *Practitioner*, April, 1888). A Hindu was bitten by a young cobra, two feet long, between the index and middle fingers, on the back of the hand, about 8.30 a.m. on October 21. He refused any treatment, and went home to take native medicines. At 12.30 p.m. the man was brought in a dying state to the dispensary. Though conscious, he could not stand, the respiration was gasping, and he could not raise his head. Saliva was flowing from his mouth and mucous râles obstructed respiration, the pulse was full and soft, the hand and forearm swollen, the palmar surface corresponding to the bite was livid. A hypodermic injection of permanganate of potassium (5 per cent.) was at once given in the situation of the bite; permanganate powder was rubbed into the wound; and a draught containing 20 minims of Liquor Ammonia was administered internally. At 1 p.m. the patient was gradually becoming worse. Saliva in great quantity poured from the mouth, the mucous râles were very marked, convulsive spasms occurred of body and especially of the extremities, respiration was spasmodic, the head had fallen forward on the chest, the pulse was softer. The draught of Liquor Ammonia was repeated. At 2 p.m. the symptoms had increased in severity. At 2.30 p.m. the case was seen by Mr. Rigby. The patient was apparently sinking fast: the mucus threatening suffocation, violent convulsive spasms affecting the body, respiration spasmodic, pulse 60, respiration 12 and abdominal; partial paralysis of the lower limbs, the surface of body covered with a cold clammy perspiration, the mind unimpaired. An injection of 15 minims of Liquor Ammonia in the same quantity of water was given hypodermically at the bend of the elbow, and a large mus-

tard pontice was placed over the heart. At 3 P.M. the convulsive spasms were more severe, the pulse was still more feeble, the breathing very catchy; urine and feces were passed in bed. The injection of Liquor Ammonia was repeated. Half an hour later breathing had almost ceased, although the *râles* seemed less, and the pulse had rallied in quantity, becoming firmer at 68. At 3.45 P.M. the respiration was 12, the pulse 70 and improved in tone, convulsive seizures were less frequent, the *râles* had diminished; general improvement. A draught of 20 minims of Liquor Ammoniz was swallowed with much difficulty. At this point a man of his caste, coming to pray over him, placed his mouth to his ear and commenced blowing into it with great violence. The patient at once had two or three violent convulsive seizures, all the improve-

ment vanished, the pulse became almost imperceptible, the respiration about 6, the jaw dropped, and he seemed *in articulo mortis*. At 4.20 P.M. the condition being unchanged, another ammonia draught was given. The patient became drowsy, the spasms less frequent. At 4.30 P.M. the respiration became very shallow, and coma appeared to set in; but suddenly he rallied, and from this time improvement steadily continued, the pulse gradually improving, being 68 at 6 P.M. By 8 P.M. dysphagia had passed off. The treatment now consisted of stimulants in the shape of country spirit every half-hour in a like quantity of water. Next day his temperature was 101.2°, the arm much swollen. There was no ulceration from the hypodermic injections of ammonia. The bite was a genuine cobra bite, the wounds of both fangs being visible.

REPORTED MORTALITY FOR THE WEEK ENDING APRIL 28, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diarrhoeal Diseases.	Diph. & Croup.	Scarlet Fever.
New York	1,526,081	782	289	20.41	16.51	2.08	6.76	4.68
Philadelphia	1,016,758	409	111	10.08	15.12	.72	1.92	.72
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	445,160	—	—	—	—	—	—	—
Baltimore	437,455	168	52	7.20	28.80	.60	.60	.60
Boston	407,024	186	45	8.64	18.90	—	4.86	1.08
New Orleans	248,000	121	32	13.28	19.09	5.81	4.98	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	210,000	109	33	13.80	17.84	.92	1.84	.92
Pittsburgh	210,000	88	37	11.36	17.10	1.14	—	1.14
Milwaukee	200,000	72	36	15.29	11.12	—	2.78	1.59
Providence	125,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	24	4	20.80	12.48	8.32	—	—
Charleston	60,115	36	11	11.12	22.24	8.34	—	—
Portland	40,000	16	1	—	12.50	—	—	—
Worcester	76,528	18	6	16.66	11.11	—	11.11	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	30	10	—	13.33	—	—	—
Fall River	61,203	22	10	36.95	9.10	4.55	—	13.65
Lynn	51,467	24	—	24.96	12.48	—	20.80	—
Lawrence	40,175	10	1	10.00	70.00	—	—	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36,298	—	—	—	—	—	—	—
Somerville	33,307	13	6	30.76	15.38	—	22.97	7.69
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	14	6	7.14	7.14	—	—	—
Chelsea	27,552	7	3	11.28	42.84	—	11.28	—
Taunton	24,979	15	5	46.66	6.66	6.66	6.66	33.33
Haverhill	24,796	15	1	—	13.33	—	—	—
Gloucester	21,784	—	—	—	—	—	—	—
Brockton	23,187	6	2	—	16.66	—	—	—
Newton	21,105	5	0	—	—	—	—	—
Malden	18,932	8	3	—	—	—	—	—
Fitchburg	17,534	2	1	—	—	—	—	—
Waltham	16,651	3	0	—	66.66	—	—	—
Newburyport	15,839	7	1	—	28.56	—	—	—
Northampton	15,419	—	—	—	—	—	—	—

Deaths reported 2,210; under five years of age 816; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 300, consumption 373, acute lung diseases 301, diphtheria and croup 92, scarlet fever 54, diarrhoeal diseases 36, typhoid fever 27, measles 21, erysipelas 17, small-pox 16, whooping-cough 16, cerebro-spinal meningitis 12, malarial fever 9. From typhoid fever, Philadelphia 13, Milwaukee four, New York, Boston, and Fall River two each, District of Columbia, Pittsburgh, Nashville, and Lawrence one each. From measles, New York 9, Pittsburgh four, Baltimore and District of Columbia three each, Boston and Fall River one each. From erysipelas, New York seven, Philadelphia three, Boston and District of Columbia two each, New Orleans, Pittsburgh, and Salem one each. From small-pox, New York and Philadelphia eight each. From whooping-cough, New York eight, Baltimore three, Philadelphia two, District of Columbia, Pittsburgh, and Charleston one each. From cerebro-spinal meningitis, New York three, Phila-

delphia two, Baltimore, District of Columbia, Pittsburgh, Milwaukee, Nashville, Worcester, and Fall River one each. From malarial fever, New York four, New Orleans two, Baltimore, Nashville, and Fall River one each.

In the 28 greater towns of England and Wales with an estimated population of 9,398,275, for the week ending April 14th, the death-rate was 21.9. Deaths reported 3,462; infants under one year of age 941; whooping-cough 173, scarlet fever 46, diarrhoea 38, diphtheria 33, measles 32, fevers 21, small-pox (Sheffield 11, Blackburn three, Manchester and Bristol one each) 16.

The death-rates ranged from 34.9 in Manchester to 16.8 in Portsmouth; Birmingham 20.5; Bradford 19.5; Brighton 21.3; Hull 18.8; Leeds 21.4; Leicester, 19.2; Liverpool 22.9; London 20.6; Newcastle-on-Tyne 23.0; Nottingham 24.9; Portsmouth 15.8; Sheffield 23.5; Sunderland 17.8.

In Edinburgh 20.7; Glasgow 22.3; Dublin 27.6.

The meteorological record for the week ending April 28, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barom-eter.	Thermometer.				Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Saturday, Apr. 28, 1888.																			
Sunday, ... 22	29.84	43.0	53.0	37.0	54.0	69.0	61.0	61.0	W.	N.W.	W.	18	9	12	C.	O.	C.		
Monday, ... 23	29.8	42.0	51.0	36.0	57.0	52.0	46.0	47.0	S.W.	E.	N.	14	10	14	C.	O.	C.		
Tuesday, ... 24	30.18	40.0	45.0	34.0	57.0	52.0	56.0	48.0	W.	N.W.	N.W.	14	12	12	C.	O.	C.		
Wednesday, ... 25	30.48	40.0	51.0	32.0	55.0	65.0	50.0	57.0	N.W.	E.	S.W.	12	12	12	C.	O.	C.		
Thursday, ... 26	30.49	53.0	61.0	36.0	58.0	60.0	50.0	57.0	N.W.	E.	S.E.	10	3	3	C.	O.	C.		
Friday, ... 27	30.45	50.0	56.0	44.0	39.0	51.0	56.0	49.0	W.	N.	N.E.	6	8	9	C.	O.	C.		
Saturday, ... 28	30.16	56.0	66.0	45.0	51.0	41.0	44.0	45.0	W.	S.E.	S.W.	12	6	8	C.	O.	C.		
Mean, the Week.		55.0	38.0																
¹ O., cloudy; C., clear; P., part.																			

O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 28, 1888, TO MAY 4, 1888.

By direction of the President, Surgeon Remus C. Persons, United States Navy, is assigned, temporarily, to the charge of the Army and Navy General Hospital, Hot Springs, Ark., during the absence, on leave, of Major Richard S. Vickery, Surgeon, United States Army, surgeon in charge. S. O. 96, A. G. O., April 26, 1888.

DE LOFFRE, A. A., captain and assistant surgeon. Granted leave of absence for six months on surgeon's certificate of disability, with permission to go beyond sea. S. O. 99, A. G. O., April 30, 1888.

ENIG, GUY L., first lieutenant and assistant surgeon. Now under orders to report for duty to the commanding officer, Fort Douglas, U. T., will accompany the 8th Cavalry from Department of Texas to Department Dakota, and upon completion of this duty will proceed to Fort Douglas. S. O. 99, A. G. O., April 30, 1888.

MCCAW, WM. D., first lieutenant and assistant surgeon. Relieved from duty at Fort Leavenworth, Kan., and ordered for duty at Fort Crawford, Colo. S. O. 48, Department of the Missouri, May 1, 1888.

RAPPEY, OGDEN, first lieutenant and assistant surgeon (recently appointed). Ordered for duty at Fort Clark, Tex. S. O. 98, A. G. O., April 28, 1888.

LAUDERDALE, ISO. V., captain and assistant surgeon. Ordered from Fort Clark, Tex., to Fort Davis, Tex. S. O. 98, A. G. O., April 28, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING MAY 5, 1888.

HORD, W. T., medical director, and WOOLVERTON, T., surgeon. Ordered as delegates to represent the Medical Department of the Navy at the meeting of the Medical Department Association, May 8th, at Cincinnati, Ohio.

BRADLEY, GEO. P., surgeon. Ordered to Navy Yard, Brooklyn, N. Y., without delay.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING MAY 5, 1888.

BAILHACHE, P. H., surgeon. To proceed to New York, N. Y., for temporary duty, May 1, 1888.

HUTTON, W. H. H., surgeon. Detailed as President of Board to report as to quarantine establishment at North Chandeleur Island, Gulf of Mexico, May 4, 1888.

WYMAN, WALTER, surgeon. Granted leave of absence for fourteen days, May 1, 1888.

STONER, G. W., surgeon. Detailed as Chairman of Board for the physical examination of candidates for appointment and promotion, Revenue Marine Service, May 4, 1888.

MEAD, F. W., passed assistant surgeon. Detailed as Recorder of Board for the physical examination of candidates for appointment and promotion, Revenue Marine Service, May 4, 1888.

CARTER, H. R., passed assistant surgeon. Detailed as Recorder of Board to report as to quarantine establishment at North Chandeleur Island, Gulf of Mexico, May 4, 1888.

DEVAN, S. C., passed assistant surgeon. Relieved from duty at Sapelo Quarantine, to assume charge of the Service at Savannah, Ga., May 3, 1888.

WHITE, J. H., passed assistant surgeon. Relieved from duty at Savannah, Ga., to assume charge of Sapelo Quarantine Station, May 3, 1888.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—The next regular meeting will be held at 19 Boylston Place, Monday, May 11th, at 7.45 p. m. Reader, Dr. J. J. Putnam; Subject: "Personal Observations on Multiple Neuritis." CHARLES HARRINGTON, M.D., Acting Secretary.

DR. E. G. LORING. RESOLUTIONS OF BOARD OF SURGEONS OF NEW YORK EYE AND EAR INFIRMARY.

NEW YORK, May 3, 1888.
At a special meeting of the Board of Surgeons, of the New York Eye and Ear Infirmary, held May 2, 1888, the following resolutions were adopted.

Resolved. That in the sudden death of Dr. Edward Greely Loring, the surgical Staff of the New York Eye and Ear Infirmary have lost an able and skilful colleague, who for nearly fourteen years has been a surgeon in the ophthalmic department were most attractive, and in his death we feel keenly the loss of a genial, frank and warm-hearted friend. In his professional attainments he was most eminent; enthusiastic in his devotion to his special field of work, and as one of his most distinguished exponents, he was justly esteemed an authority. We greatly deplore the cessation of his labors, while still in the full enjoyment of his powers, which were enriched by a large and carefully digested experience. As an author he was remarkable for his acute observation and logical reasoning, while the clearness of his style gave evidence of the correctness of his thought. By his death scientific ophthalmology has lost an ardent and successful disciple, while the community has been deprived of the services of a skilful counsellor and practitioner. The surgeons of the New York Eye and Ear Infirmary desire thus to give expression to their feeling of affection and respect for his memory, and sympathizing sincerely with his family in their loss, offer them their respectful condolences.

Resolved. That this minute be entered on the records of the Board of Surgeons of the Infirmary, and that a copy be sent to the family of Dr. Loring.

CHAS. STEDMAN BELL,
GERRHAM BACON,
MORRIS J. ASCH,
Committee.

DEATH.

Died, at Manchester, Mass., April 25, 1888, George Arthur Priest, M.D., M.M.S.S., aged sixty years.

BOOKS AND PAMPHLETS RECEIVED.

Muscular Hypertonicity in Paralysis. By A. Hughes Bennett, M.D., London, 1887.
Transactions of the Vermont State Medical Society for the Year 1887.

Original Articles.

ON AXIS-TRACTION FORCEPS, THE PRINCIPLES OF THEIR CONSTRUCTION AND THEIR VALUE IN PRACTICE, WITH A DESCRIPTION OF A NEW MODEL.¹

BY EDWARD REYNOLDS, M.D.

It is a well-known mechanical law that if extension and counter-extension be applied to the ends of a rigid curved rod, the resultant force is exerted in the direction of a straight line drawn between the extremities of the rod. Now, when the ordinary curved obstetric forceps is applied to the head at the brim, and traction made upon the handles, the forceps is exactly equivalent to such a curved rod, and the force of its traction is exerted along a straight line drawn between the point at which the hands are applied and that at which its grasp upon the head is centred; a line which lies so far forward and passes so close to the pubic arch that, in the attempt to follow it, the head is drawn forcibly against the symphysis, on which a large portion of the force employed is expended. The mathematical proof of this statement has been so frequently published² that it is unnecessary to repeat it here. It is enough to say that it can be easily shown that a large portion of the force exerted is employed in bruising and injuring the soft tissues of the parturient canal, and in opposing instead of favoring descent by grinding the head against the symphysis pubis.

It is evident at a glance that if the tractions could be exerted exactly in the axis of the pelvis, or rather in the line of least resistance in the individual case, the head could be extracted by a much less powerful force, and that, moreover, the portion of force saved would be just that part which is employed in doing harm, and in impeding delivery.

In surveying the conditions of the case, one's first impressions would be that the easiest way to secure axis-traction would be by bending the handles of the forceps backward until they crossed the axis of the superior strait; and it is interesting to see that some of the earliest axis-traction instruments³ were constructed upon this plan, but these instruments were failures, and in the light of our present knowledge it is easy to understand this fact, for when we consider that the axis of the pelvis is constantly changing its degree of curvature, and that its direction must vary with each variation in the inclination of the pelvic brim, and with each variation in the shape of the individual pelvis, whether flat, normal, or universally contracted; when we consider, moreover, that the line of least resistance is not necessarily coincident with the pelvic axis, but must vary, in addition, with every variation in the shape and dimensions of the individual head, and especially with every variation in the position by which that head presents, we see at once that no such rigid instrument could ever be exactly right, unless by chance; and, moreover, that it must frequently err as badly, if not worse, than do the simple curved forceps.

These considerations are, furthermore, supported by

the fact that the first successful axis-traction instrument, that of Tarnier (1877) was one in which the line of traction could be carried backward or forward at the will of the operator, and which, in addition, by the existence of a freely movable joint between the blades and traction handles, permitted the head to move freely in any direction in the line of least resistance, under the influence of the varying intra-pelvic pressures.

The recognition of the importance of this automatic adjustment and the invention of an instrument which secured it was, in reality, Tarnier's sole contribution to the principle which is now so widely associated with his name; but the improvement was so great that the principle of axis-traction became at once prominent; and the instrument was so well adapted to its end that all the many changes in its form which have been made since that time have been made, in the case of successful instruments at least, merely in the interests of increased simplicity, and without altering the fundamental principles of its construction.

[A variety of instruments were then shown and described as follows]:

The original Tarnier model has to-day a merely historical interest. It is an efficient instrument when once in position, but is so cumbersome and complicated and of such peculiar curves that it is an extremely difficult instrument to apply. It is also difficult to clean, and is to-day obsolete, Tarnier himself having produced some thirty other models.

Lusk's model is a simplification of the older Tarnier instruments, but still clings to the Tarnier curve, which Tarnier himself has discarded. This double curve may be useful, as Lusk claims, in some few difficult cases, but renders its application far less easy, and must decrease its value for general use; indeed, Lusk himself agrees⁴ that the Simpson axis-traction forceps is, for general use, the best form yet invented.

This instrument is simply a rather large and heavy Simpson's forceps, fitted with a compression-screw, and with traction-rods, which are attached to the blades by a screw and nut; and in this lies the one fault of the instrument. The necessary removal of the rods before and after use for purposes of cleanliness, is, as in most other models, a tedious and annoying process. This difficulty is done away with in Felsenreich's modification of this model, in which the rods are attached just behind the fenestra by button-hole joints, such as are generally used in attaching the blades of surgical scissors. In his forceps the compression screw is also a separable piece of apparatus, and is attached by slipping it into a groove in the handles. These changes make the instrument more easy to clean and more convenient for use as an ordinary forceps without axis-traction.

Believing that an attachment which could be applied to any forceps at a low price, and without in any way altering the forceps, would meet a widely felt want, I have had made an instrument which I think meets these conditions, and is at once thoroughly efficient, easily applied, and still more easily kept clean.

It consists of a pair of curved traction rods, terminating at each extremity in a hook. The upper hook is intended to fit into the extremity of the fenestrum, and ends in a flat button of the size and shape which

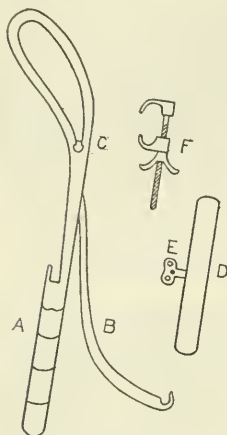
¹ Read before the Obstetrical Society of Boston, March 10, 1888.

² Geburts- und Geburtswunden zur extraction des in Beckenengezungen Kinds. Hermann, Bern, 1844. Cours d'accouchemens. Habert. Description des nouveaux forceps. Tarnier, Paris, 1877.

³ Those of H. ibert, 1863, and of Morale, 1871.

⁴ Science and Art of Midwifery, p. 371.

has been found by experiments in actual practice to be best adapted to allow of an easy application and to ensure its retention in position. The hooks at the lower ends of the rods slip into rings attached to a traction-handle, and fit loosely enough to allow considerable rotation. The handles of the forceps are fastened by a separate clamp of simple construction, somewhat resembling a monkey-wrench.



A, forceps; B, rod; C, button by which the rod is attached; D, traction-handle; E, swivel-bar to compensate for any difference in the length of the fenestra; F, clamp.

In cases in which a large head is free above the brim of a transversely contracted pelvis, it may be necessary to attach the rods before locking the forceps, but by this method I am sure that they can be attached in any case in which the head is within the reach of the ordinary forceps. They are made by Messrs. Codman & Shurtleff.

The remaining models are less widely accepted and less to be recommended; the high forceps of Brens have been enthusiastically received at Vienna, and are in general use there, but have not been much favored elsewhere.

They are constructed upon the principle that axis-traction is of but little importance, and that the superiority of such instruments is really due to the joint between the head and handles, and they are in reality nothing more than a large pair of Simpson forceps, in which the blades are hinged to the shanks, while a couple of light rods run down from the blades and are pinned together to ensure their moving in unison. As at present made, the instrument can only be cleaned by boiling or by prolonged immersion in an antiseptic.

The next pair of forceps is that which is now used in the Rotunda at Dublin, and is a praiseworthy attempt to attach axis-traction to the ordinary (Denham) forceps, but is rather an inferior instrument. The joint is too near the hand to allow free motion to the head, and the construction of the instrument is such that it can only be cleaned by boiling or by being kept in a jar of carbolic, as is the custom at Dublin.

The next two models are interesting in comparison

with the plates of the earliest axis-traction instruments on record,⁶ which they closely resemble.

My own experience in the use of axis-traction instruments is but small, amounting to only five cases. Of these, four were delivered by other methods after the forceps had failed, but the fifth illustrates well the value of axis-traction.

In a case of marked justo-minor pelvis⁶ I applied the Brens' forceps as a precautionary measure, and after satisfying myself that the delivery of a living child was impossible, did craniotomy. I found the forceps easy to apply, but have, of course, no knowledge of their value as extractors. In three subsequent cases, in each of which the head was movable, above the brim of a flat pelvis,⁷ I made a tentative application of my own axis-traction attachment before resorting to version, and was gratified to find that the attachment of the rods to the (Vienna) forceps was easily effected, in spite of the facts that in each case the application was a very high one, and that in two of the three cases it was complicated by a want of space, due to marked transverse contraction of the brim.

In two of these cases the child was extracted by version after the failure of the forceps, (one living, one stillborn), but in the third, though version was accomplished, it was followed by craniotomy to the after-coming head.

These cases are quoted only because they are the ground for my belief that these rods can be attached to the blades after their application, in any case which is at all suited for a forceps operation.

In a fifth case the head of a large (nine pound) child was engaged (O. L. A.) at the brim of a rather small normal pelvis, and circumstances rendered immediate delivery necessary. I applied the Vienna forceps and made three strong tractions without avail. I then made a fourth very powerful traction, using all the force which I dared apply, and again without effecting any descent; I then hooked on the traction rods, and governing the handles of the forceps with one hand, took a tentative pull on the traction-handle with the other, to assure myself that everything was in place, when to my surprise I felt the head start, and increasing the force, brought it through the pelvis and on to the perineum with a single strong one-handed traction, in spite of the fact that I had previously exerted almost my whole strength upon the simple forceps, without so much as starting it.

I do not wish to be understood as having from any one case become an enthusiastic advocate of axis-traction, nor a believer in the use of high forceps rather than version, for the majority of cases; but I do feel that I shall in the future give axis-traction a thorough trial in the comparatively few cases in which I believe that the use of high forceps is the preferable operation; and I wish to present my own appliance to your notice, not as a perfect instrument and one

⁶ Hermann, 1844; Hubert, 1869; and Morale, 1873: Trans. Amer. Gynec. Soc., 1881, p. 185.

⁷ Sphæc, 9 in.; Troch., 12½ in.; Crests, 10½ in.; Ext. Conj., 6½ in.; Diag. Conj., 4 in.; Depth of Symph., 2 in.; Incl. of Symph., decreased; From, very high; True Conj., estimated at 2½ in.

⁸ L. Spines, 9 in.; Troch., 12 in.; Crests, 10½ in.; Ext. Conj., 6½ in.; Diag. Conj., 4 in.; Symph., 2 in.; True Conj., estimated at 2½ in.; Diag., Universally contracted flat pelvis.

⁹ L. Spines, 9½ in.; Crests, 11 in.; Ext. Conj., 8 in.; Diag. Conj., 4½ in.; True Conj., estimated at 2½ in.; Diag., Universally contracted flat pelvis. Ext. measurements increased by fact that patient was extremely fat.

¹⁰ L. Spines, 10½ in.; Crests, 11½ in.; Ext. Conj., 8 in.; Diag. Conj., 4 in.; True Conj., estimated at 2½ in.; Diag., Simple flat pelvis.

sued to every emergency, but as a simple and efficient form of axis-traction, easily within the reach of the general practitioner, and well suited to his use because applicable to the individual forceps with which he is already familiar.

THE USE OF HEBRA'S CONTINUAL BATH OR WATER BED IN SURGERY.

BY OTIS K. NEWELL, M.D.,

Assistant Demonstrator of Anatomy in the Harvard Medical School, Surgeon to Out-Patients at the Massachusetts General Hospital.

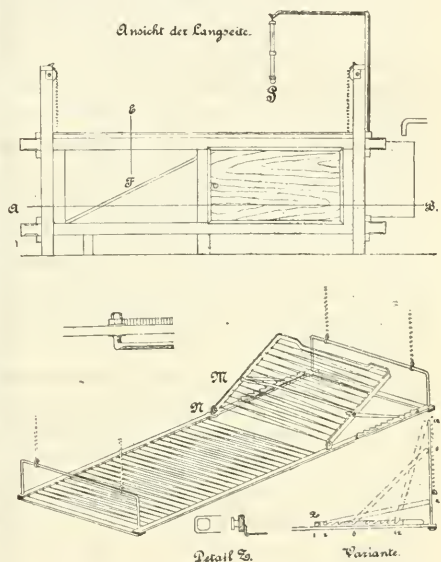
The subject to which I wish to call your attention to-night is one which appeared to me to be of great interest when I wrote the present paper, about three years ago. At the suggestion of Dr. H. H. A. Beach I referred the matter to the late superintendent of the Massachusetts General Hospital, Dr. Whittemore, who also took an active interest in it. Owing to his unfortunate illness, however, its further consideration at that time was postponed. For various reasons I have been unable to again attend to it until now, when, I am happy to say, Dr. Pratt, the present superintendent of the Hospital, has the construction of such a bed under consideration.

The continual bath, or water bed, of Hans Hebra had won such universal approval from those who had seen it in operation at the Vienna General Hospital that a plan and description of it was appended to the report of 1882, in order that other institutions might construct similar ones. It particularly interested me while I had opportunities of observing it in use, and after reading in regard to it, by the very great advantages which it presents for the treatment of certain surgical cases. The information given below has been obtained from the appendix to the hospital report, Kaposi's lectures, and my own observation and inquiry in regard to it. To Hebra's bed have been added improvements suggested from time to time, and the one shown in the plan has resulted. Seven such are now in use at the Vienna Hospital, and at times are simultaneously occupied. Their best use is perhaps in cases of severe burn, but they are also used to great advantage in gangrene, bed-sores, and in fact in many cases which a familiarity with the bed would show to be adapted to its use. I shall here speak particularly of extensive burns, as the great value of the bath is so apparent in their treatment. Any theoretical objections to its use are to be answered by the fact that patients have remained in the bath as long as 385 days and nights, and "taken nothing therefrom but their recovery."

There are many practical points in its favor. Severe cases of burn die here as elsewhere, but are relieved at once of their pain. If the case admits of recovery it progresses under the most favorable circumstances. Freed from his pain, the patient lies comfortably, and changes his position at will. Fever rapidly subsides. Sleep and appetite are acquired, and the system brought into condition to compensate for the great loss of pus. The dangers of erysipelas and sepsis are slight, and "pocketing" of pus is avoided. The severe nervous strain caused by the painful removal of more or less adherent dressings, and the necessary amount of equally painful lifting and turning are avoided. The wounds

granulate splendidly, and often so luxuriantly as to require "touching up." Pus is at once removed, instead of remaining to become putrid and fill the room with its odor. In fact, many disagreeable subjective and objective complications are obviated, and not only the patient but the attendants made comfortable. The cost of such a bed is, according to the superintendent during whose administration those in Vienna were introduced, about seventy dollars, and in addition to the outlay dependent on their use to be reckoned as slight compared with that of the dressings they replace.

The beds should be in a light, well-ventilated room, with cemented or tiled floor, and walls painted with oil colors to withstand the effects of moisture. The water-supply may be taken from the main boilers, and the waste conducted through ventilated pipes.



The bed consists of an ordinary zincked tub about .002 mm. thick, reinforced by iron bands and corner pieces, and supported by an oaken frame. At the head and foot is a windlass, to which the mattress frame is attached by chains, so as to be raised or lowered as needed. The mattress frame on which the patient has a swinging support in the water is of galvanized wrought iron, spanned with wire of similar material. To regulate the height of the patient's head and shoulders it is hinged at the upper end, so as to work like the ordinary bed rest, and may be modified to accommodate more than ordinary sized patients, as shown in figure at Z.

Filling of the tub is accomplished by a mixing vessel at the head of the bed, into which hot and cold water pipes are conducted. The water flows in through pipes at the bottom and out of waste pipes at the top. At the head of the bed is placed a strap for the patient to grasp in changing position. See figure at S.

¹ Read before the Surgical Section of the Suffolk District Medical Society, March 7, 1886.

The plans are here about one thirty-fourth natural size, the smaller details on a somewhat larger scale. Originally the water was allowed to flow continuously from a boiler heated by lamp flame. It has since been found that this is superfluous, and that the water is, in addition, on account of the existence of currents, unequally warmed and renewed. On this account it is the present custom to renew the water but three times daily, and regulate its temperature in the mean time by fresh additions. As the tubs are made to hold a large quantity, 6.75 hektolitres, and are surrounded by a wooden frame covered with cross-pieces and blankets, loss of heat is slight, and the addition of fresh water but little needed. The determination of the temperature is left mostly to the patient's feelings, and these indicate, as a rule, about that of the body. At first, water at about 30° C. feels much too warm, then too cool, and must soon be raised to about 35° or 37° C., which is afterwards adhered to. Patients remain constantly in the bath, and are only raised from it for use of the bed pan or urinal. They can thus pass days, weeks, and even months uninterruptedly, while all their functions and nourishment, as much as the disease makes it possible, go on normally.

The only somewhat disagreeable complication affects the palmar and plantar surfaces, which, similarly to those of washerwomen, shrink, become white and folded, and at times cause frequent and sharp pain. This tends to subside after applying any fatty substance, and will disappear spontaneously in from two to five days. The epidermis of the rest of the body suffers no important changes. In individual cases a papulous eczema occurs on those parts subject to frequent changes from wet to dry, principally the arms and sides of the thorax. This sort of water eczema heals without treatment.

The danger of drowning, although appearing at first thought to be considerable, is slight, and in spite of the frequent use of the beds, such an occurrence has never been known. Strong and self-dependent patients awake the moment their mouths touch the water. Weak or disabled ones may be kept from sliding down by a folded cloth passed under their shoulders and arms. In private practice an ordinary or portable bath tub may be used.

Instead of using, as is the present custom, the ordinary hair mattress, it would be much more cleanly and antiseptic to use a rubber-covered mattress attached to the frame.

THE TREATMENT OF FRACTURES OF THE EXTERNAL CONDYLE OF THE HUMERUS.¹

BY GEORGE W. GAY, M.D.
Visiting Surgeon, Boston City Hospital.

FRACTURE of the external condyle of the humerus, extending more or less deeply into the elbow-joint is often difficult to treat in such a manner as to prevent deformity and impaired motion. Dislocation of the head of the radius forwards causing it to impinge upon the shaft of the humerus in flexion of the forearm is a common occurrence, and unless corrected, flexion can never be made beyond a right angle, and seldom quite to it. Another complication not infrequently met with in this injury is dislocation of the radius and ulna

backwards and outwards, thereby preventing flexion beyond a very slight degree.

To prevent the forward displacement of the radius I have made use in several instances of the ordinary internal angular splint set at an acute angle. One case, that of a child, was treated without any splint by reducing the dislocation, and placing the forearm at an acute angle and securing it in position by adhesive straps and bandages. The result was satisfactory, but I do not recommend the method for general use, as pain and other mischief might readily follow the treatment, unless great care was taken to avoid it. It is impossible for anterior displacement to take place with the arm put up at a moderately acute angle, as there is no room for the head of the radius to slip on to the anterior surface of the humerus. The angle need only be acute enough to preclude the possibility of a forward displacement of the radius.

The lateral dislocation of the radius and ulna can be controlled very satisfactorily by means of lateral angular splints, one on either side of the arm. These splints, together with the anterior, or as it is usually called, the internal angular splint, applied to an arm, afford a very complete support to the elbow-joint. The bones are held firmly in position, the joint is well supported and with the arm in a well-fitting sling the patient is usually as comfortable as can be expected.

I have never treated this class of injuries to the elbow in a straight position, and cannot see any advantages to be derived from the method. Should any ankylosis result from the injury it is far better that the forearm should be at or near a right angle, as this position enables the patient to do very much more than any other in the way of dressing, eating, etc.

The broken arm is examined every three or four days. Gentle passive motion is used after ten days, and it is varied in degree according to the indication. Care is taken not to light up a fresh inflammation by this measure, as more is lost than gained by so doing. The joint often improves in mobility for a year or more, hence a too hasty opinion should not be given in these cases.

In conclusion, I would urge upon the younger members of the Society the importance of making the first examination and dressing with the patient under ether. A more careful diagnosis can thus be made and a better position can be secured for the broken bones. Guard against an anterior dislocation of the head of the radius with the fragment of the external condyle, and also of a backward or lateral displacement of both bones of the forearm. The arm once placed at an acute angle, and properly secured in that position, it is hardly possible for either of these complications to occur.

TUBERCULOSIS OF THE PERITONEUM; EVACUATION OF ASCITES BY LAPAROTOMY; CURE.¹

BY J. W. ELLIOT, M.D.

THE patient was a delicate-looking girl of fourteen years, with red hair. Her mother brought her to me on account of an enlargement of the abdomen. This enlargement had been noticed about a year previous, and had steadily increased. The child had lost health and strength, but complained of nothing else.

¹ Read at the meeting of the Surgical Section of the Suffolk District Medical Society, March 7, 1888.

¹ Read at the meeting of the Surgical Section of the Suffolk District Medical Society, March 7, 1888.

I found the abdomen greatly distended. The enlargement was uniform. Fluctuation was evident, and hard masses were to be felt at various points. On percussion, the left flank was dull, while the right was tympanitic: there was dullness over the whole of the rest of the abdomen. The percussion note did not change on change of position.

There was a chronic vaginitis. The uterus was small and in normal position. Douglas's fossa was not bulging into the vagina. There was an anemic heart-murmur and amenorrhœa for three months. I made the probable diagnosis of ascites due to tuberculosis of the peritoneum, and for further evidence drew off some fluid, which was sent to Dr. Gannett for chemical and microscopic examination. He reported that the fluid was undoubtedly ascitic, and suggested tuberculosis of the peritoneum, although he had failed to find the tubercle-bacillus. I advised laparotomy, with evacuation of the fluid, in the hope of curing the disease. A month later the abdomen was larger, and both loins were found tympanitic, while the rest of the abdomen was dull on percussion, and change in position did not change the percussion note. This evidence caused some of the gentlemen who saw the case with me to consider it a thin-walled ovarian cyst.

On December 12, 1887, I opened the abdomen and evacuated two pails full of ascitic fluid. The peritoneum was thickened and adherent to the subperitoneal fat. The omentum, intestines, and all the organs were studded with small, hard, grayish-white lumps, which felt like shot (tubercles). The intestines were drawn up by the diseased mesentery and held in the upper abdomen, so that they did not present at the opening, nor did they fall into the pelvis after the fluid was evacuated, but air was sucked in to fill the vacuum.

The omentum was rolled up and contracted into a long mass of tissue of the size and shape of a large sausage. The ovaries and tubes were not enlarged, but were studded like the rest of the organs with tubercles. A small amount of bloody fluid was left in the pelvis, as it seemed to form about as fast as it could be sponged out.

The abdomen was closed without drainage. The operation lasted twenty minutes. Recovery was uninterrupted, the wound healing by first intention. The patient went home at the end of three weeks.

Dr. R. H. Fitz, who was present at the operation, kindly examined a bit of the peritoneum microscopically, and reported that the case was peritoneal tuberculosis. Dr. Sears found a tubercle-bacillus in one of the sections of the hardened fragments.

Four months after the operation the patient was examined at my office. She had grown fat and rosy, and said that she was perfectly well. The abdomen was flat and soft, all the hard masses having disappeared. There was no ascitic fluid present. In short, the patient seemed to be cured.²

In looking over the reported cases of laparotomy for tuberculosis of the peritoneum, I find that almost all the operations have been done either as exploratory operations or from a mistake in diagnosis. It is only within the last year or so that the operation has been deliberately undertaken for the purpose of curing the disease. Dr. Cabot's second case and this case of mine are among the first reported where, the diagnosis being made, the operation followed for the

purpose of cure, and cure resulted. This, it seems to me, is an important step forward in abdominal surgery.

So far as I am able to learn, this disease appears clinically in three forms: In the first form there is a hard, circumscribed mass of tubercular tissue at one or more points in the peritoneal cavity, *without any ascitic fluid*. There is one such case reported, where a semi-solid mass was felt in the region of the ilio-cæcal valve, which was supposed to be malignant disease, but, on opening the abdominal cavity, the cæcum and vermiform appendix were found rolled up in a hard mass, and studded with tubercles. This patient recovered entirely, although this form of disease is not usually improved by the operation.

In the second form there is an encapsuled ascites usually just above the pelvis, and the diagnosis is difficult. Like other varieties of encapsuled peritonitis, there is a tumor, evidently fluctuating, but without a definite outline, with only a vague sense of limitation.

In the third form there is free ascitic fluid, with occasional hard masses to be felt.

Out of twenty-nine cases collected by Fehling,³ twenty-one were encapsuled ascites. Of these, fifteen were cured (eight over one year previous), six died. In five cases there was free ascitic fluid; of these, two were cured and two improved. He also found that out of forty cases collected, only two were men. He reasoned from this that, considering the frequency of genital tuberculosis in men, one would expect at least an equal frequency of peritoneal tuberculosis in men and women; therefore, he thought that peritoneal tuberculosis was probably secondary to tuberculosis of the Fallopian tubes in women, although it often seemed to be primary.

Some cases have recovered spontaneously; some have died of phthisis very soon after the operation.

Why recovery takes place after the operation is still a mystery. Ahlfeld⁴ reports a case of what appeared to be tubercular nodules on the peritoneum, where the patient died one and one-half years later of cancer of the uterus: at the autopsy the tubercles had disappeared, and only adhesions were found in their place.

We need more reported cases to be able to judge what proportion will be ultimately cured, but the immediate relief alone is sufficient to indicate the operation.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SURGICAL SECTION.

G. H. MONKS, M.D., SECRETARY.

MEETING, March 7th, 1888. In the absence of the chairman of the Section, Dr. J. J. MINOT was, on motion, chosen to preside.

Dr. O. K. NEWELL read a paper on

THE SURGICAL USE OF HEBRA'S CONTINUAL BATH OR WATER-BED.¹

Dr. D. W. CHEEVER said: I am very much interested in this subject. I remember a good many years ago, hearing that the late Dr. Hamilton, of New

² Five months after the operation the patient remains perfectly well.

³ Centb. f. Gynaecol., No. 45, 1887.

⁴ Centb. f. Gynaecol., No. 46, 1887.

York, had treated some severe injuries of the foot in this way, with great success. Although I have never seen the apparatus used, I should think it might be very practicable. As happens to most persons who have been in practice a good while, I have seen a great many bad burns, and one in particular that I will mention as being very well adapted to this mode of treatment. The patient recovered, much to my surprise; I thought he would die. His entire back was burned from the shoulders down to the nates, and until he got some degree of strength, he was forced to lie for a good many weeks in bed on his face; a position in which it is very hard to be non-rushed, very hard to sleep, very hard to digest, very hard to have the natural functions of the body carried on properly. As soon as he could possibly do so, he was encouraged to get up, and after that he passed many hours a day standing. He could not sit, and would stand until wearied out, and then lie down on his face again. He eventually recovered perfectly, but was some months in doing so.

It seems to me that this was exactly the case in which such a bath would have afforded great relief. As I understand it, this patient could have assumed almost any position in the water, and without troubling his back. No doubt his recovery with this treatment would have been much more rapid. With the modern modes of heating hospitals it would seem as if the requisite heat might be kept up in these appliances without much trouble, from the steam pipes and the hot water, and it would need only a moderate amount of mechanical construction to make a nice water-bath for the limb or the whole body. I hope it may be introduced here.

DR. CHADWICK: When I was in Vienna, Hebra was treating certain skin diseases with the perpetual bath, and I remember seeing one patient who had been three years in the bath, who came out for a month, but went back again. I cannot remember the disease.

DR. NEWELL: I remember at the time that I was there that there was a marked case of Psoriasis Universalis in which the man looked as red as a boiled lobster. He was under water for a month or two. He was taken out and powdered with oxide of zinc, or something of the sort, and was then put back again.

DR. VICKERY: Are bed-sores treated so?

DR. NEWELL: It is exactly in such cases that the bath is of most use. Patients with bed-sores are floated in the bath and do not bear any weight at all on the sore.

DR. A. T. CABOT read a paper on

TWO CASES OF LAPAROTOMY FOR TUBERCULAR PERITONITIS.²

DR. J. W. ELLIOT followed with a paper on

A CASE OF TUBERCULOSIS OF THE PERITONEUM: EVACUATION OF ASCITES BY LAPAROTOMY: CURE. (?)³

A considerable discussion followed the reading of these papers.

DR. G. W. GAY then presented a communication on THE TREATMENT OF FRACTURES OF THE EXTERNAL CONDYLE OF THE HUMERUS,⁴

and showed specimens, splints, etc.

DR. CHEEVER: Some years ago, Dr. Fifield called to my attention a mode of treating fractures of the external condyle which he had picked up from some French author and which he pursued for a while; but I believe he afterwards became convinced that although it was philosophically correct, it was not practical in its results. And that was to treat the fractures of the external condyle in the straight position, the same as you would treat fractures of the olecranon; the argument being that the extensors and the supinators which are attached in and above the outer condyle of the humerus are put in a state of relaxation by straightening the arm. Consequently, if the fracture was to be treated by relaxing the muscles, it could best be treated in the straight position. This was a very pretty theory; but it soon proved to be very fallacious, from the fact that whenever true fracture of the external condyle occurs the head of the radius necessarily travels with it in whatever direction the fracture goes. In a very large proportion of cases the radius is slipped up in front and held there; and consequently, when these cases are taken from the splint it is found that flexion is restricted by the head of the radius, precisely as Dr. Gay has described.

That being abandoned, we went back to the ordinary way of treating all fractures about the elbow joint, except those of the olecranon, with the internal rectangular splint. And here I would call to mind what Dr. Bigelow said in his lectures, and it was a very important direction; namely, always to go through the manipulation to reduce a dislocation of the elbow before you put on the internal angular splint.

In that way, of course you stand a very good chance of drawing all the displaced fragments into place.

I had supposed that, as a rule, when the ulna was displaced backwards, in these fractures, the shaft of the humerus must necessarily be broken off just above the condyles, in that familiar way which we know, when fracture of the humerus directly across the shaft above the condyles is not seldom mistaken for dislocation, or the dislocation for a fracture, (the deformity when you first see the patient being precisely similar), but if a case like this which Dr. Gay cites, when one fragment can be felt in place, proves that a different state can exist, then of course, we must look out for that.

I have had no experience in treating the arm at an acute angle. I have found, what I believe all authors agree to, that as to perfectness of results more depends upon the youth of the patient than upon anything else; and, as a rule children under puberty get pretty good results after fractures; and as a rule they get more and more stiffness as they approach adult years, after a break which fairly enters the elbow joint. The great advantage attending the use of ether I fully believe in. The precept of Dr. Bigelow, always forcibly to reduce a supposed dislocation, is also, it seems to me, a very important one.

Passive motion does not always do what you expect. A violent motion frightens the patient, and often leads him to run away from you; and, sometimes, if you are anxious about the case, you have to hunt him up, and see how he is getting on. Dr. Bigelow used to say that he was not much inclined to passive motion,

² Reserved for later publication.

³ See page 492 of the Journal.

⁴ See page 492 of the Journal.

on the ground that it lighted up trouble in the joint.

In a young child you can get good results, and they can be decoyed into passive motion by play-things, by carpenter's tools, by gimlets, by carrying weights, by various games, etc. You will find, I think, when you come to examine one of these stiff arms, when the child sets the muscles, that there are two sets of fibres, one the biceps, and the other the great supinator, which hold on as hard as possible. These two are solidly locked, and much passive motion is resisted. Of course, once in a while, we see a bad case where we give ether and try to break up adhesions, but very often this leads to a recurrence of inflammation.

To sum up, I should say, if the acute angle will give better results, I should be very glad to try it. It seems to me that after an early fracture in a young child it must be used with a good deal of caution so as not to interfere with the circulation in the hand. We know that if we use the right angle we have to watch it for the first day or two, on account of the effusion, and sometimes it is so great as to lead to thrombosis of the veins and interfere with the circulation. This position would be considerably harder for the circulation, and it seems to me we would have to be watched very carefully for the first few days. I suppose Dr. Gay would agree with me that the number of cases that he has as yet had would not be enough to fully establish its safety.

DR. GAY: I would like to say that I do fully realize the importance of being careful at how acute an angle you place the arm. In the case of a child with a thin arm you can place the arm at a pretty acute angle and fasten it there without a splint. I think in adults you cannot do that. I put one case up under ether without a splint, and I waited until the patient waked up, but I was obliged to put it up at a less acute angle with a splint. I had no trouble at all, and the patient did not require an opiate. I think the moderate acute angle is a safe one and does not produce any more trouble than the right angle. Of course if there is much swelling, the splint must be put on loosely.

I bring up this method of treatment more as a suggestion than as a recommendation of its being better than any other. I have tried it several times, and think it worth bringing to your notice. I did not touch upon the treatment in the straight position, because it is much more difficult by passive motion to get flexion than extension, and I believe all surgeons are agreed that the right angle is the best position for the ankylosed arm.

DR. MIXTER showed

A PUNCH FOR THE REMOVAL OF POWDER-GRAINS IMBEDDED IN THE SKIN.

DR. NEWELL exhibited

A SPRING RETRACTOR FOR TRACHEOTOMY.

The instrument was specially useful in deep tracheotomies in children, where one was working without an assistant. It is passed around the neck and the hooks fitted into the wound and, by its natural spring, holds the flaps apart.

DR. F. B. HARRINGTON then showed

O'DWYER'S NEW INTUBATION TUBES FOR ADULTS, which were made of hard rubber instead of metal.

The following is a fuller account of the case of

WIRING THE FRAGMENTS FOR UNUNITED FRACTURE OF THE FEMUR,

(the specimen in connection with which was shown by the chairman, Dr. J. C. Warren, at the meeting of the Section on February 1st), than that given in the published report of that meeting.

The specimen had been presented to the Warren Museum by Dr. George H. Jennings, of Jewett City, Conn., through Mr. Allen Greenwood, medical student.

DR. WARREN said: The bone has firmly united, and in a depression at the point of union on one side the wire can be seen completely buried in the bone except at this point.

The peculiar interest of the specimen lies in the fact that the wire with which the bone was sutured was cut short and left in the wound. It is usually customary to leave the ends projecting so that they can be untwisted and the wire removed. This specimen shows that those who have adopted the former method are quite justified in so doing.

The following is Dr. Jennings's account of the case.

I send this specimen with the accompanying history, thinking that Harvard might like to keep this evidence of the skill of one of her children in assisting Nature in her reparative process.

In June, 1875, the late Dr. Charles M. Carlton⁵ was called to see Mr. D., a man about fifty-five years old, with this history:

He was a ship carpenter; twelve weeks previously he fell from a steamboat wheel, a distance of about twenty-five feet, sustaining a fracture of the femur at about the juncture of the upper and middle thirds. He was treated by a "natural bone-setter" for twelve weeks by a straight posterior splint without extension. He then gave up the case, claiming that the bone would not unite.

Dr. Carlton was then called by the attending physician, a homœopath, to amputate the limb. At the request of the family he took charge of the case.

The patient was much emaciated and feeble. At the seat of fracture there was free motion, the sensation given was as though there was an extra joint in the limb.

The patient was etherized and the fracture exposed by an incision made on the outer side of the limb. The fracture was oblique, the ends of the bone overlapping each other about four inches; they were united by fibrous bands. The parts were very vascular. The adhesions were broken up, the ends of the bone turned out of the wound and sawn off square. A hole was drilled through each end and a heavy platinum wire passed through the holes. The bone was then placed in position and the wire tightened; the wound was cleansed with a carbolic acid solution and closed with silk sutures. The limb was placed on a straight posterior splint.

The loss of blood was considerable, and the patient was almost in a state of collapse, but rallied with heaters placed around him in bed and stimulants given hypodermically.

During convalescence he was sometimes delirious, and twice removed the splint, causing a partial sepa-

⁵ Dr. C. M. Carlton was born in Waterford, Maine, April 28, 1838; he graduated in the class of 1861 at Harvard Medical School; served with honor during the war and practised surgery at Norwich, Conn. He was at one time President of the Connecticut Medical Society. He died of pneumonia, Dec. 30, 1886.

ration of the fracture. He recovered, with about one inch shortening, and worked at his trade. Death occurred two and one-half years later from pneumonia.

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MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

STATED meeting at 19 Boylston Place, Wednesday, March 14, 1888.

NATIONAL CONTROL OF MARITIME QUARANTINE.

The first business in order was the Report of the Committee appointed at the last meeting to take action on a pamphlet sent by the College of Physicians and Surgeons of Philadelphia, which was as follows:

BOSTON, February 15, 1888.

The Committee to whom was referred the report of a Committee of the College of Physicians of Philadelphia on the necessity of National control of maritime quarantine, respectfully report that, in their opinion, such National control is inexpedient.

HENRY J. BARNES,
CHAS. F. FOLSOM,
SAMUEL H. DURGIN.

DR. H. J. BARNES: In presenting this report, Mr. Chairman, I will not attempt to give the reasons which governed the opinion of the other members of the Committee. For myself, after reviewing with care the address of the Committee of the College of Physicians of Philadelphia, and recognizing the deficiencies of inspection and provisions for care, at most of our ports of entry, which were shown by the Committee to amount to absolutely nothing in the way of protection, I cannot at the present time support the measures proposed by the Philadelphia Committee. The report contains no bill to be presented to Congress for enactment. We are, therefore, in doubt as to the scope of the desired legislation. Cumbersome machinery, falling into rust and decay from disuse, or destructive to commerce from too meddlesome activity, might be the fruits of our labor without full and complete knowledge as to what we are asking for. We may all favor general quarantine laws in the abstract, but it is doubtful if there exists sufficient unanimity of opinion to present a bill which would not invite defeat by exposing diversity of opinion as to how, when, and where the measures should be applied.

The legislation suggested by the report would probably antagonize the bill now before the House, presented by Dr. Davis, establishing a National Bureau of Health; and esteeming our internal sanitation of equal, if not of more, consequence than our maritime, and as this bill apparently covers both with an elastic authority only to be exercised where the exigencies demand, the success of this bill should not be jeopardized by advocating another. So far as I am informed, this bill places in central authority powers similar to those vested in the Local Government Board of Great Britain, the successful operations of which have proved sufficient to protect that country with far greater commercial relations than our own, from the importation of contagious diseases.

DR. BLODGETT: Does this Committee object to

the formation of any Government Board whatever, or only to the plan which was submitted in the pamphlet presented to the Society?

DR. BARNES: We discussed that, and considered only the plan in the pamphlet. We thought Dr. Davis's bill would be a wise one.

DR. S. H. DURGIN, another member of the Committee, who came in during the evening, was asked to give his views of the matter, and said: I don't know that I have anything to say in advocacy of any present change to National control. The Committee discussed the matter and came to the conclusion that we didn't need, at least here, any change. I don't know that I have anything particularly interesting to say to the Society. I should be very glad to answer any questions, if any member feels interested in the administration of the quarantine here. Some interest may have been aroused in the profession last week by the articles in the newspapers; if so, I would be very glad to explain matters.

In relation to the quarantine being administered by the National government, I don't see any advantage, myself, in such a course over that which we pursue now. I may be so near to it as to be blind to its faults, and may not be as good a critic as somebody a little farther off from the administration of the quarantine. I don't believe that our quarantine service is perfect, or that the accommodations are perfect. It would require a very large expense to make it such an institution as would enable us to meet an extraordinary emergency. But for such calls as we are likely to get, I think that we are fairly well provided, and I say this as the result of a rather long experience in handling the quarantine of our port.

We are not situated so as to expect an invasion of epidemic disease from abroad, as some of the other ports are. For instance, the difference between this city and New York is very marked. They have emigrants from sections which are epidemically or endemically infected with contagious diseases. We don't have them. It is a rare thing that we get any emigrant directly from these places. Some of the Southern cities are situated within a day or two of yellow fever infected ports. We are situated at a greater distance, so that in the case of a vessel arriving from Havana, one of the nearest ports for yellow fever, the period of incubation will be run out before they arrive here, except it be a steamer. We get very few passengers from there. They are mostly sailing vessels. The diseases may be contracted on board, as was the case with the small-pox patient the other day. In this case the exposure was about the Gulf Stream. We could not have prevented his exposure. This man who afterward took sick had been exposed for ten days to small-pox. The vessel was put through a course of disinfection; every rag of clothing, and everything which could be subjected to the same process, was subjected to steam at a temperature of 220° to 230° for fifteen minutes. Such things as cannot be treated by this are fumigated, and the deck of the vessel and the fore-castle are washed down with a solution containing one part in five hundred of corrosive sublimate. After a time the vessel was sent up town. The *Traveller* intimated that the vessel remained infected and conveyed the small-pox to this patient.

Our process is to examine every emigrant who arrives in Boston, and wherever there is any cause

for detention or disinfection it is carefully done. Formerly, vessels were kept forty days at quarantine, without any attempts at disinfection. Now we keep the vessel a short time, apply those means which are supposed to kill the germs of disease, and send the vessel away as quickly as possible.

Some ports of entry are wholly without the needful preparation for dealing with infected vessels, cargoes or passengers, and others are defective and for this reason some central order and direction may become useful when it can emanate from a properly constituted Health Bureau for the whole country.

DR. FOLSOM said: There were two points which the committee had to consider. One was whether it was practicable for the United States Government to assume medical inspection of the various ports; and the second was whether it was the best way of doing it, if practicable. Before considering these questions the committee were obliged to acknowledge two facts. First, that there are only two cities where the medical inspection and disinfection, if necessary, is at all reasonably well performed; and the other fact was that in the other cities the sanitary conditions were such that the arrival of cholera or yellow fever would be attended with danger not only to those cities, but to the rest of the country.

First, as to whether it was practicable. I think it is absolutely out of the question. And for this reason: In 1878 or 1879 we had the most severe epidemics that the country has ever had, and the most fatal in large cities that has occurred since the great plague in London a little more than two hundred years ago. The mortality in Memphis in two summers was pretty nearly the same as that in the plague in London in four or five years. There was no time when the country had been more thoroughly aroused and when it was willing to take more efficient remedies. At the same time the medical inspection at New Orleans was very inefficient. They had no accommodations. In view of that fact, in 1879 the National Board of Health did what had never been done before. That is to say, during this very severe epidemic of yellow fever they surrounded the city with a cordon and disinfected every letter that went out of the city, and had every single train stopped a short distance from the city and the passengers transferred to another train, and absolutely prevented the disease from spreading anywhere.

The National Board of Health at that time was thoroughly in favor throughout the country. They had done something that had saved the commerce of the country from great derangement. There could not have been any more favorable circumstances to secure a national control of medical inspection than at that time. Under these circumstances it was thought worth while to make the attempt. The United States spent something like forty or fifty thousand dollars for buildings, and the whole of the Northwest made an effort to have the matter brought under national control, and yet the opposition was so great that the measure was defeated. If defeated under those circumstances it would be useless to attempt the thing at the present time. The medical inspection of New Orleans has now been carried on in such a way as to justify the opinion that an ordinary epidemic could be prevented. There is a committee in New Orleans that spends thirty thousand dollars every summer in keeping the city clean by ordinary

sanitary measures. There can be no question that it would be an absolute waste of energy to attempt the change. The matter would be so opposed from all parts that it could not be done.

The next point is whether it would be wise, if it could be done. In 1879 it might have been wise. The National Board of Health was at that time in the height of its power. It was, on the whole, wisely managed, and it would have been a good place to put such power if it should be placed anywhere. At the present time there is no place where it could be put. The United States Marine Hospital service has under control infectious diseases at our ports of entry, and I think that everybody would say that placing so great power in their hands would be as unwise as anything could be. These were briefly the reasons, as I understood them, why the committee voted as they did. The question of feasibility of medical inspection at different ports, how far it is worth while to do it, and how far it would benefit commerce, were questions which didn't come up, and on which we did not report.

On motion it was voted that the report of the committee be accepted and placed on file.

DR. JOHN A. JEFFRIES read a paper on

THE STERILIZATION OF MILK FOR INFANTS,

of which the following is an abstract:

He pointed out that the ordinary milk of the city was, when first supplied to the consumers, beginning to swarm with bacteria, and, by the time of being fed to the infants, often sour. To avoid this he had, adopting the custom of housewives, made a long series of experiments on the effect of steaming, and used with favorable results only steamed milk in the treatment of a number of cases of green diarrhoea of infants. To summarize, he had found that if the following rules were followed the milk was rendered practically sterile for several days. Stopper the flasks with cotton wool, and heat them in the oven for thirty minutes at a mild baking heat, or until the cotton becomes brown. Pour the requisite amount of food into the flask, and then place in the heated steamer for fifteen minutes.

The first rule was an advantage, but not of great importance; the second was both easily done and went to the root of the subject.

Any cooking steamer with a perforated false bottom and a snug cover would do, as the lower part of a Chamberlain's steamer. The heat must be sufficient to keep the water in active ebullition. The milk should be steamed when first received, not just before feeding, as the object is not only to give sterile food, but also fresh food, and to avoid the products of decomposition quickly formed in milk after the bacteria have become numerous.

DR. H. C. HAVEN said: I suppose that it is an admitted fact that the sterilization of milk is one of the most important advances that have been made in regard not only to the treatment of digestive disorders of infancy, the so-called summer diarrhoea representing them especially, but also to artificial infant feeding, the success or failure of which depends upon the presence or absence of gross disturbances of nutrition.

Years ago the whole blame for the failure of cow's milk was thrown upon the casein, because it did not coagulate in exactly the same way as woman's milk. It was assumed that that was the only trouble. It seems

to me that now it is necessary to bear in mind that there may be other causes besides the simple presence of bacteria to which to attribute the failure of cow's milk as a successful food, and make it the actual cause of disease, as it undoubtedly is in the summer diarrhoea of children.

It is undoubtedly of advantage to destroy the bacteria in the milk at the time of consumption, and in that way to prevent any further fermentative changes, but it seems to me that it is too much overlooked that the fermentative changes which have already gone on in the milk before the time of its sterilization and consumption by the child may have been sufficient to give rise to products of albuminoid fermentation which may be in themselves sources of disease which cannot be prevented by the sterilization of the milk at the time of the consumption. It seems to me a very open question whether it is the bacteria themselves which are the cause of disease (no specific bacterium has yet been discovered, to my knowledge), or whether it is some product of albuminoid fermentation, which is not only the cause of the diarrhoeas and digestive disturbances, but also the cause of the lack of success of artificial feeding. And unless that distinction is borne clearly in mind, it seems to me that we may attach too much importance to the sterilization of milk at the time of consumption. But I question very much whether, in artificial feeding or in acute diarrhoeal diseases the mere sterilization of milk which has already been subjected to the atmosphere for a number of hours, any very great practical benefit is going to be derived.

Again, the question of sterilization is one which has got to be considered from a practical point of view. I question very much whether, in the classes of society where artificial infant feeding, and the diseases which result from its improper employment most commonly occur, any plan of sterilization has been or can be devised which is sufficiently simple to insure its proper application by the ordinary unintelligent mother of the poorer classes. There is where we must combat the evils which arise from improper infant feeding, and until we can secure a milk which is gotten to the mother in the sterile condition, I question, I say, whether any practical benefit will be derived, although a very considerable benefit does come, undoubtedly, from such a plan as has been spoken of, if properly employed.

I have used one or another method for the sterilization of milk with apparently a certain amount of advantage in a number of cases, but I must confess that it has also given me a certain amount of disappointment. Its routine use at the West End Nursery failed to show any advantage, and I do not believe that until we can secure milk which can be made sterile at the time of production, can be kept free from the products of albuminoid fermentation, we shall have made any great advance.

Dr. T. M. ROTCH said that Dr. Jeffries's paper is interesting and shows evidence of careful bacteriological work. There is, however, such a thing as making bacteriology too prominent in a clinical question. It makes little difference to us, when we are about to feed a baby, whether the food which has been sterilized remains sterile for days, provided it remains so long enough for the baby to drink it sterilized. The bacteria exist in large numbers in the baby's stomach, and the reason for giving sterile food is to destroy

the developed bacteria in the food and to copy from nature. I think that we in our ignorance should copy nature so far as possible. Woman's milk having been proved to be sterile, that is one factor which we may copy. Whether it is a factor which is going to be of extreme importance in the future, the future must decide. In feeding babies we have to take all the factors into consideration, and it is the sum total which gives us the result.

Now, admitting for the present that the sterilization of milk for infants is a good thing, and, so far as I can see, it probably will be proved to be so, we should adopt, of course, as simple a method as possible for the sterilization.

Professor SOXHLET, in Munich, has made a very careful study of this subject, and has published the result of his investigation on the sterilization of milk in the *Münchener Med. Wochenschrift*, No. 15-16, 1886. I have also received a letter from Dr. Caille, of New York, who studied with Professor Soxhlet, and who has recently read a paper before the New York Academy of Medicine on this subject, in which the same ground has been gone over, and he has sent me his results, which correspond closely with Dr. Jeffries's work. So far as I can see, the work of the bacteriologists shows very uniform results.

We, who engage in clinical work, must take advantage of these results. Dr. Caille's article will be published in the April number of the *Dietetic Gazette* for 1888. Dr. Jeffries's paper is valuable both in itself and as corroborating these results, and, of course, if they agree, we have certain facts to go by. As to the change in the color of the cream mixture, did I understand Dr. Jeffries to say that it began at once on exposure to the steam?

DR. JEFFRIES: I never saw any in which it did not take place. As soon as heated up, it commenced to turn brown. I could not say when it stops. I believe it is always present when the alkaline hydrates are boiled with sugar.

DR. ROTCH: My own work on sterilization was done in connection with my article on Artificial Feeding in the spring of 1887, and published later in the August number of the *Archives of Pediatrics*. The chemical analyses were made by Dr. Harrington. At that time it was recognized that the brown color was produced by the action of the lime-water upon the milk-sugar. What it is, I, of course, am not in a position to say. Whether it makes any especial difference whether it takes place or not, or whether it ever hurt a baby to drink the milk which was slightly colored in this way, I do not know; but I suppose that it does not.

In regard to the experiment that Dr. Jeffries speaks of, it was made with a cream mixture, which has to be changed according to the individual infant, as a rule. Sometimes it is successful with babies, and sometimes it is not. The reason that I especially spoke of it in my article was that the chemical analysis of this mixture corresponded more closely to the chemical analysis of the average woman's milk than any other that I have met with. That especial experiment was performed by Dr. Ernst. He placed in his sterilizer this mixture, and at the end of fifteen minutes it had not turned in color. He then placed it in the incubator, and found that it was sterile. Where the cream mixture was steamed for half an hour, it did change color. I have made experiments

myself since, and they entirely coincide with Dr. Jeffries's; that is, using the steamer and heating rapidly, I found that in ten minutes a certain change in the color took place. There is no doubt about it; the tubes show a decided change in color. As to whether it is neutral, acid, or alkaline, that, of course, can be determined by more delicate tests, perhaps, than test-paper. The paper which I used showed the mixture to be alkaline. I will present to the inspection of the Society the test-paper which I used, which, I think, is good. It makes a great deal of difference, of course, what test-paper is used. Will Dr. Harrington say what the results of the more delicate tests were.

DR. CHARLES HARRINGTON: I tested certain of the tubes which Dr. Rotch speaks of with turmeric paper, which gave a decided alkaline reaction, and also with the indicator phenolphthalein which also indicated that the sterilized milk was alkaline. It was not so alkaline as the milk that had not been sterilized. I notice Dr. Jeffries speaks of certain of these tubes having an acid reaction after boiling or steaming a solution of sugar with lime-water. We begin with an alkaline reaction, and it seems to me perfectly impossible to get an acid reaction. In fact, the very process of steaming, it seems to me, would prevent any acid formation. I have tested these solutions, and found them to be still alkaline. The alkalinity is, to be sure, somewhat reduced, which would indicate possibly a union of part of the lime with a part of the sugar. As to the color, I think it cannot be known by anybody what it is. It is one of the indefinite products generally spoken of as the brown products, which chemists know nothing about. It has been suggested that it might be due to caramel formation, but the temperature is not high enough for caramel formation, which is a result of dehydration. The test-paper which Dr. Jeffries used is, I think, open to very serious objections. The same paper which he uses, I find gives an acid reaction with distilled water and the ordinary service water, which, we all know, has a very faint alkaline reaction.

DR. ROTCH: There is one point that I am very glad Dr. Jeffries spoke of, and that is that while this mixture was decidedly alkaline before steaming, the alkalinity decreased after steaming; and that is an interesting point to me, because I have used this preparation a good deal in the last two years. For instance, in a lady who was partly feeding her baby with the breast and partly with this mixture, I tested the milk as it came from the breast, and found that it was slightly alkaline, and on testing the cream mixture I found that it was decidedly alkaline. After steaming, it was nearer the breast milk in degree of alkalinity.

I have not had an opportunity before of showing some nursing-tubes which I devised, not simply for sterilization of food, for that is only a part of the whole problem, but, recognizing that we should copy from nature so far as our knowledge goes, in cases where everything else has been tried and the fermentation still takes place, I devised these tubes in reference to the sterilization, as well as to the other factors. I believe that it is the quantity, as well as the quality, which will make a food agree or disagree, and I have, therefore, put in this factor. You can make the tubes correspond with the age of the child, using any food which you choose. They are made like test-tubes,

and have a round bottom, so that they can be easily washed — better than those which have angles. Having them in the shape of tubes, they can be sterilized, and they have a small hole in the side, to avoid the formation of a vacuum. I have also had a steam apparatus made, which is practically that which Dr. Jeffries describes. It is a covered pan with a perforated diaphragm, which stands upon legs and can be heated by a lamp below. The tubes simply stand in the steam. In order to get sterilized milk into the baby, I advise tubes of this kind, where a rubber nipple is used as in the nursing-bottle, and then a stout rubber cot is placed over the tube and the first nipple. It is then placed in the sterilizer, and all that you have to do to give it to the baby is to take the rubber cot off, and we have the milk swallowed sterilized, just as it is when it comes from the mother's breast. Whether that is of very great importance, I don't think we have determined. But we should copy from nature as far as possible. If nature's food is sterile, we should try to copy that sterility. If nature gives a certain amount, we should try to get that amount. If nature provides a certain amount of fat, we should try to introduce that amount of fat into our artificial food.

In regard to the Anglo-Swiss condensed milk, I have used it at the Infant Hospital. It varies in its analysis as do all the patent foods, and the last can which I had analyzed was decidedly deficient in fat. That can evidently was made up of skim-milk, and the per cent. of fat, instead of being about ten, was somewhere about seven, and was markedly deficient. Leaving out the other objections to the condensed milk, you can make up the proper amount of fat, by adding cream. I have sterilized condensed milk in the same way, and put in what I considered the proper amount of fat, and so far as the sterilization was concerned, it went very well indeed. The method of raising the fat was this, and I think it may be of some use to the profession when they wish to increase the fat in their artificial foods.

If you use a cream which is made by the centrifugal method, and which I hope in a very short time can be made with an almost exact per cent. of fat in it, you can take your hundred parts of condensed milk diluted 1 to 6 and make it almost exactly correspond to mother's milk, so far as the chemical analysis of the fat is concerned; for knowing the per cent. of fat in the diluted milk, and also in the cream, you can by simple rule of three add enough cream to obtain the requisite 4 per cent. You can take a half-teaspoonful or teaspoonful, or measure exactly in grammes, and have a certain proportion of fat in the mixture.

I stated in my article that it was best to sterilize for twenty minutes, and I think that is what bacteriologists agree to be the proper time to allow.

DR. E. G. CUTLER: I have had some experience with this method of sterilization, and certainly in my hands it has worked very well indeed. I noticed very early in the use of it the brown color which Dr. Jeffries has mentioned. At first I was, perhaps, somewhat apprehensive of it, and tried the sterilization over a second or third time. It happened every time, and finally I made use of the milk, and the child seemed to get along perfectly well. Since then I have used it a good many times, and have had no bad result whatsoever. The child would take it just as readily as any other milk. He speaks of the blowing

out of the rubber nipples which Dr. Rotch advocates. I have never had any trouble if they were placed carefully on and pinched a little to leave a certain amount of residual space so that it could distend a little. There might be danger where there was a lip, but in the straight bottles there has never been any danger in my experience.

In an ordinary bottle these same nipples, or similar ones, may be used without blowing out, provided the physician is careful to pinch up the rubber and blow out the water, and allow a certain amount of distension. With reference to this particular sterilizer that Dr. Rotch has invented, I have found some difficulty in keeping it heated with the alcohol lamp, so that I use an ordinary gas stove, or Bunsen burner, and find that it heats up very much quicker. I want to say one thing in reference to the centrifugal cream that Dr. Rotch speaks of. I found that the richest cream varied a great deal, and I have given up the use of it, because I found that I had to test each specimen every day, so that now I use the "strawberry cream." In my hands this has been more successful than the other kind. Otherwise I found that every day or two I had to go about and give directions about changing the amount of water. There is one question I should like to ask Dr. Jeffries, and that is in reference to the cotton stoppers. Do I understand that he advocates them in preference to the rubber nipples?

DR. JEFFRIES: These stoppers are regularly used in the bacteriological experiments. The glass is sterilized first, and then raised up to 150 degrees; at that temperature the stoppers would be blown out.

DR. CUTLER: I have several times had children who were eating ordinary mixtures of milk and water, and cream, for that matter, in various proportions in lime water, who have had more or less trouble with the bowels, and green stools—sometimes the motions would be creamy, with a good deal of green following or preceding—and I have had the cream carefully made and sterilized, and the child would get better, and the stools would look very well; and afterward they found it was so much easier to take care of the child that in several instances they made use of this method of sterilization. A sterilizer was improvised at one time at home by taking a pot and putting a cullender inside. It worked well.

DR. ROTCH: I would be very glad to get Dr. Jeffries's account of the changes which occur in the boiled milk; I believe he prefers the steamed. What are those changes?

DR. JEFFRIES: I said that the changes are more in the boiled than in the steamed.

I recommended steaming the milk when it was first received, before the bacteria were very numerous. The brown color was spoken of simply as a matter of observation. I used the mixture myself in one case, and found no injurious effect from it. It is a great deal better to know that it is there and does not do any harm, than to think that it should not be there and be afraid of it. As to the stopper, we use that in the previous heating. I heat all my tasks first in an oven. To make it safe these must be heated first in an oven before the food is taken in, because the bacteria might get inside, and these stoppers are not heated each time. Then putting in the food you may sterilize them. It makes a great difference.

DR. ROTCH: I have been told by Dr. Ernst that the

steam kills the bacteria and not the germs; and that it does not make any difference, so far as the feeding of the baby is concerned, whether you kill the germs or not.

DR. JEFFRIES: There are a good many ways of looking at it. It depends upon how long you wish to carry the milk. Sometimes you wish to carry it several days; and then it is better not to have spores in it. Many times the germs are not killed. The germs of the infectious diseases we know nothing about, but if they are like those we know, then reasoning by analogy they are killed.

DR. ROTCH: We must reduce this question, of course, to a practical basis. We must feed the baby, and we wish to give the food without the germs getting into it which can easily be done by means of the rubber nipple and cot.

DR. JEFFRIES: The germs are forming spores constantly. Most of them are killed in the stomach, and that makes very little of them. But where the milk has been standing a long time these products are injurious to the infant, and by this arrest of spore formation we can prevent that putrefaction and stop these changes which make the child sick. It is also according to the theory that many of these infectious diseases are spread from the milk. If the flask is first heated we guard against that. The first heating in the oven is to make the thing systematic and complete.

DR. F. H. DAVENPORT: I would like to ask whether the simple milk alone turns brown, or only that to which the lime water has been added.

DR. JEFFRIES: The only place where I noticed the brown color was where milk sugar and lime water was added to the cream and milk making the so-called cream mixture; there we saw the brown color. That is the only place where the lime-water was used.

DR. DAVENPORT: I think it probable, in the heating of sugar with either acids or alkalis, that invert sugar is formed; and color is always developed under those conditions; and it develops, ordinarily, at the temperature of 80° C., so that probably boiling is sufficient for that purpose.

DR. JEFFRIES: There is one thing that I forgot to speak of, and that is the reaction. I used litmus paper imported from London. I merely noted the color, because I understood that there were other things that would do better. Two or three days ago one of these other specimens of lime water was tested with (?) which failed to show alkaline, I understand. I hoped Dr. Harrington would be able to settle the question whether it was acid or alkali. I don't think it is really known, but I hope we shall know in a day or two, as I sent Dr. Harrington one of the tubes.

DR. HARRINGTON: I endeavored to take the reaction, but it was too late, as it was putrid. I would like to ask Dr. Davenport if he can conceive the possibility of an acid reaction from boiling lime water and sugar.

DR. DAVENPORT: It is outside my experience. There is sometimes a little confusion about the reaction of milk, because the salts which give the reaction are the acid and neutral phosphates, and you may get an amphoteric reaction; that is, have at the same time both an acid and an alkaline reaction, according to the way you made the test. If you look at the litmus paper while it is wet it may appear red or acid, and if dry it may have become blue; that is, neutral or alkali-

line. And so fresh milk, with the litmus paper still wet, has an acid reaction, usually considered to be due to the free carbonic acid. As that escapes it becomes neutral, and then, as fermentation progresses, becomes gradually more and more acid.

DR. VICKERY: There is one question I would like to ask, although a little apart from the subject. There are two kinds of Anglo-Swiss milk. One is put up in Switzerland and one in England. I would like to ask which Dr. Rotch prefers. I, myself, have preferred that put up in Switzerland.

DR. ROTCH: I think that the one Dr. Vickery speaks of is the one I had examined, and although it was found to be made of skimmed-milk, yet it is probably to be preferred to that which is put up in England.

DR. HAVEN: It seems to me that that prepared in Switzerland is the better. In the Anglo-Swiss milk prepared in England there was more bacteria, and also they developed quicker. It seems to me that there is no comparison as to the relative value of the two milks, whatever may be their chemical composition.

DR. VICKERY: My reason for wanting to know is that this is the cheapest condensed milk for sale. It is desirable to know if it is as good as any other; and still more if it is the best. There is one thing about the hole in the bottle. When it is made at the top the milk is apt to run out. I have made a hole at the foot of the bottle, which is covered with a piece of India rubber, which, when the baby begins to suck, is moved off the hole by the nurse's finger, and does not give any trouble at all.

Adjourned at 10.15 o'clock.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

C. M. GREEN, M.D., SECRETARY.

MARCH 10, 1888, the President, DR. WILLIAM L. RICHARDSON, in the chair.

DR. EDWARD REYNOLDS read a paper

ON AXIS-TRACTION FORCEPS, THE PRINCIPLES OF THEIR CONSTRUCTION, AND THEIR VALUE IN PRACTICE, WITH A DESCRIPTION OF A NEW MODEL.¹

DR. C. E. STEDMAN had always succeeded in delivery with ordinary forceps, and instanced two cases in which the head was high, wherein he had delivered by exerting traction far back against the coccyx: he might have operated with greater ease, however, with axis-traction forceps.

DR. HOSMER said that he had been practising medicine for over thirty years under difficulties which might perhaps have been greatly diminished by the use of axis-traction forceps; and he recalled cases in which such an instrument might have been used with great advantage. He had learned the value of traction far backward, when the head was high, and thought it an important addition to our facilities.

DR. BOARDMAN said there was a general ignorance in this vicinity of axis-traction forceps, and he himself had had very little experience with the instrument. As a rule he preferred version to forceps when the head was high; but he questioned whether, except in

expert hands, high forceps would not save more foetal life. Certainly with the head engaged and version ruled out, the axis-traction forceps has a useful application, and maternal soft parts may be the better saved by the improved direction of traction made possible by this instrument. The complicated character of most axis-traction forceps and the difficulty of their application was a great objection to their general use.

DR. BLAKE had always felt that with the ordinary forceps the force was applied at too long range from the point where it was desired, and he could now look back on cases wherein axis-traction forceps would have been serviceable. He had generally used Elliot's forceps, delivering with the patient on her side.

DR. J. P. REYNOLDS said that several years ago impressive testimony in favor of axis-traction forceps had been given by Ellwood Wilson, who two years before had spoken against the instrument. Dr. Wilson had based his change of opinion on his experience with axis traction in six cases, in which he thought he had saved foetal life by resort to axis-traction forceps.

DR. W. L. RICHARDSON said that Dr. Edward Reynolds had so fully explained the theory of axis-traction forceps that he could add nothing, except his own experience with them. He had only used Tarnier's original forceps, and in some cases had found a great deal of difficulty in applying them. A number of years ago he had believed very strongly in the superiority of high forceps over version, but as he had gained more experience in the Lying-in Hospital he had changed his mind, and now thought that in cases where interference was demanded, the head being at or above the superior pelvic strait, the operation of version was safer for both mother and child. The application of the axis-traction forceps, however, must be of value in cases where, from the condition of the uterus, the operation of version is either contraindicated or could only be done with an unwarranted risk to the mother. He had been struck by a remark contained in a manuscript lately received from Dr. Dôléris, of Paris, to the effect that the Obstetrical and Gynaecological Society of Paris has by a vote decided to hold to the former models of the forceps of Levret, Smellie, Simpson, Barnes, etc., believing that though the axis-traction forceps of Tarnier, Poullet, Breus, Braun, and Crozat may have some advantages, yet these are outweighed by their complications. The latest device from the application of axis-traction forceps is in the so-called Poullet-Levret forceps, by which the traction is applied by tapes passed through openings in the upper sides of the blades, and subsequently attached to the traction-handle by means of a steel rod, through the upper end of which the tapes pass. Dr. Richardson had had no experience with this last modification, but, theoretically, it seemed very ingenious and practical. The application of axis-traction, as suggested by Dr. Edward Reynolds, was very simple, and less likely to prove a vehicle for septic infection than most of the forceps now in use.

DR. HOSMER reported the following

CASE OF ACUTE MENINGITIS.

Notes of an autopsy made five hours *post mortem* March 8, 1887, by DR. J. A. MEAD: Bloodvessels of the pia and cortical substance injected, and clots in the vessels of the former. Both hemispheres presented a dull, glazed appearance, and their convolutions were

¹ See page 489 of the Journal.

adherent; between the two hemispheres, also, there was some adhesion. Fissure of Sylvius was closed. No tubercles at base of brain. No pus. Other organs normal.

The patient was nineteen months old, female. She had thirteen teeth, the last one cut being the left canine. In the summer of 1886 she had a diarrhoea, which, not very severe, was rather persistent. Otherwise the child had been a healthy one. During the night before her death she had been less quiet than usual, but her mental condition was perfectly normal. She was playful and bright until 6.30 o'clock, when there was a slight convulsive action. Consciousness was perfect until an hour later, from which time the symptoms became alarming. Death occurred at 12.30, six hours after the first significant symptom appeared.

Very early in the case laryngeal obstruction had become so marked that the family and neighbors supposed it to be an attack of croup, and with that idea sent for me. The absence of headache and of distinct nausea and vomiting should be noted. At 9 o'clock the temperature was 41.4° C. At 10 it had risen to 42° C., which is 107.6° F., a very high temperature. At 11 it had fallen to 41° C.

For a moment, the influence of some infection was suggested by the remarkable temperature which speedily attended a sudden and severe attack, but that suspicion was soon abandoned. That it was not extremely absurd is shown by a case reported by a German authority, in which scarlet fever was supposed to exist. While the appearance of the eruption was anxiously being waited for, death overtook the child. An autopsy made a diagnosis of acute meningitis.

Dr. C. E. STEDMAN spoke of the case of a child playing in the door-yard and who had had no previously observed symptoms, who was suddenly seized with convulsions and died: autopsy showed cerebrospinal meningitis.

Dr. HOSMER also spoke to the following query:

CAN UTERINE HÆMORRHAGE BE PRODUCED BY RENAL DISEASE?

Under this title I reported to the Society in June, 1886, the interesting case which suggested the foregoing question. That report may be found in print in the issue of the *Boston Medical and Surgical Journal* of 28th October, 1886. As a supplement thereto I wish to read the following note written to me by Dr. John W. Farlow, 20th May, 1887.

Apropos of the case of Mrs. B., I thought you might be interested in two cases reported in the *Revue des Sciences Médicales* for April, 1887, page 549. Trier reports two cases of women with Bright's disease, one forty-four and the other thirty-six years old, who entered the hospital for very profuse metrorrhagia. Both were very anæmic. One died in two days, and the diagnosis was not made until the autopsy. Both kidneys were affected with interstitial nephritis, and the heart was hypertrophied. The other patient presented all the signs of a sub-acute uræmia; and shortly before her death signs of pericarditis with exudation were discovered. She had nephritis both interstitial and parenchymatous, and the left verticle was enlarged. In both cases the uterus was healthy; at least presented no alterations capable themselves of explaining the metrorrhagia. The alterations were simply a slight thickening of the walls of the uterine arteries, of the same origin as that which existed in

the renal and cardiac arteries. In one case at least this arterio-sclerosis could be ascribed to alcoholism.

Dr. BOARDMAN asked Dr. Hosmer whether, in cases like the one reported the metrorrhagia was not due to cardiac disease, which latter may have ensued from the renal affection.

Dr. HOSMER believed that in cases of hypertrophied heart consequent upon kidney disease the hæmorrhage was due to changes in the vessel walls rather than to the cardiac affection.

Dr. Hosmer reported the following observation made in 1879: I was in attendance upon a young primipara. Having decided to use forceps, while a portion of the uterine neck still remained below the brim of the pelvis, I carried my finger within the os as far as possible, and swept it about the head. A full finger's length from the external os, the position of the internal os, as I suppose, was indicated, by a distinct projection which occupied the whole circumference of the organ, and without inequality at any point. Its edge was firm, sharp and well defined. Its section would be represented by an equilateral triangle. The amount of its projection was estimated at 8 millimetres; that is, about one-third of an inch.

HYDATIDIFORM MOLE.

Dr. BLAKE reported the following case, and Dr. W. L. RICHARDSON, at his request, exhibited the specimen:

Woman, twenty-six. Married two years. Five months after marriage had an abortion at third month; doctor called it a false conception, which means a blighted ovum.

Menstruated regularly for nine months. Last May menses ceased, and she supposed herself pregnant from that time. She states, however, that for several months following May 1st there was a very slight appearance, merely a stain, at menstrual periods till last September. Since that time until last Friday no bleeding of any kind. On Friday she had a severe hæmorrhage of a peculiar character, as if the blood was mixed with water, and accompanied with quite severe pain. Both ceased, however, and there was no recurrence till Thursday morning. On Wednesday she called to engage me to attend her in labor, which she expected soon.

The history as above, together with her size, which was not more than between the fifth and sixth month, led me to examine her per vaginam. I easily made a diagnosis between the condition found and placenta previa. The following morning I was sent for, as the pain and bleeding had recurred. I dilated the os with my hand, and after a tedious time succeeded in removing the entire mass. There was but little hæmorrhage. Woman has since done perfectly well.

AMERICAN MEDICAL ASSOCIATION. CINCINNATI, OHIO.

GENERAL SESSIONS.

FIRST DAY. — TUESDAY, MAY 8, 1888.

At eleven o'clock, A.M., the meeting was called to order by Dr. W. W. DAWSON, Chairman of the Committee of Arrangements, in the Music Hall. Prayer by Rev. R. A. GIBSON.

Dr. DAWSON introduced Hon. AMOS SMITH, mayor

of the city, who delivered a most felicitous address of welcome.

The address of the mayor was followed by that of welcome by Dr. C. G. COMEGYS, who, as one of the oldest and most distinguished practitioners of Cincinnati, added the greeting of the profession to that extended by the mayor. The following were the opening sentences:

"On the part of the medical profession of this city I am happy to welcome you to Cincinnati, and to assure you that we, with all of the citizens, feel greatly honored that you have selected this, the most central city of the nation, for this annual congress. Twice before, to wit: in 1850 and in 1867, the Association has held its annual councils here, and your professional brethren and the people cordially united to make those occasions encouraging and profitable.

"These large assemblies of medical men, in increasing numbers every year, prove undubitably that the value of the Association is no longer a question. To say nothing of the scientific discussions involved, it is clear that the gatherings of the Association give immense satisfaction to all. It is, certainly, a great pleasure for men who are engaged in common duties and modes of life in widely separated areas to be thus brought together for the establishment of acquaintanceship and friendship that promote community of action for a higher performance of their beneficent work among the people."

ANNUAL ADDRESS OF THE PRESIDENT,

DR. A. Y. P. GARNETT, of Washington, of which we publish the following extracts.

"... In casting about for a subject, concrete in its nature and directly useful in its application, I have determined to submit for your consideration a few practical reflections upon the mission of the American Medical Association.

I am especially moved to select this subject at this time by the fact that at no period since the formation of the American Medical Association have its enemies been so bold, so reckless, and so insuperable in their efforts to destroy its influence and power with the medical men of this country.

The paternal relation held by this organization to the entire medical profession of the United States imposes upon it duties and responsibilities of the gravest character. It stands out before the world as the chosen custodian of all that pertains to the preservation and advancement of professional interests, as well as to medical science *per se*; it is intrusted with the delicate and difficult task of elevating and maintaining the medical character of this country upon the highest moral and intellectual plane.

Taking a retrospective view through the almost half-century of its existence, we have no reason to be discouraged when we consider what has been accomplished; indeed, we have cause for congratulation as we recognize the many evidences of progress due directly to its influence, important results which could only have been achieved by combined and co-operative effort. The crystallizing at its very birth of the hitherto segregated elements of medical strength into one compact organization gave to it a power and authority recognized and felt by the entire medical profession of this country.

But while we may well feel gratified by a contemplation of the fruits of our labors in the past, it is obviously important that we should not be flattered into the belief that we have accomplished our mission, and permit ourselves to lapse into supine indifference with regard to the pre-eminent important object which yet remains to be worked out, I trust, through the instrumentality of this body. I refer, gentlemen, to a radical and thorough

reform in the present system of medical education of the United States—the subject which, at this moment, presses itself more urgently than all others upon our attention.

It is but natural that those of us who have at heart the true interests of the medical profession, and who desire to encourage such progress and effect such reforms as must permeate and influence each section of our country, should make every endeavor to elevate our system of medical education to a standard equal in dignity and attainment to that which obtains in Europe, and hopefully look to this great representative body as the only central, dominating power through which such reforms are to be accomplished and perfected.

Our annual meetings must not be regarded solely for the purpose of considering the science of medicine either in its theoretical or practical aspect and supplemented by the pleasures of social intercourse. While we have ample cause to be gratified with the rapid progress made by some departments of medicine in this country within the last decade under the direction and stimulus of this association, we are still confronted by the fact that very little has been effected in the direction of a general reform in the medical schools.

We all know that this subject of medical education and medical license has been an almost endless theme for discussion, coeval, indeed, with the establishment of medical schools in America, and more particularly has it been earnestly and ably considered since the organization of this association; yet the question still presents itself, What can the American Medical Association do to further raise and promote a higher standard of medical education in the United States, to curtail the number of medical schools, and thereby gradually restrict to a conservative limit the annual hosts of graduates turned loose upon the public by those institutions? It will be borne in mind that in order to effect these desirable ends the initial step must be taken by this body in some mandatory form—experience has demonstrated that separate state societies and individual college regulations looking to such reformation have so far proved conspicuously futile. For a long period all measures brought before this association having for their object an interference with or material modification of the systems pursued by the medical colleges were met by a determined and successful opposition on the part of those members who represented such institutions.

So manifest did it become that no important change could ever be effected in this direction while these schools were permitted to be represented as such in this body by their own officers that an amendment to the constitution was adopted abolishing this feature of representation in order, as it was hoped, that the proceedings of the association might not be trammelled or embarrassed by the misguided efforts of such delegates.

Whilst the purpose and intent of this move was, as already stated, to free the association from the predominant power of the schools and permit it to legislate in a fair, unprejudiced and conservative spirit upon this important question, it has so far unquestionably failed to do so. It occurs to me that an explanation of this may be found in the fact that a large proportion of those who now attend our annual meetings are directly or indirectly connected with medical institutions, and no doubt are to a large extent, unconsciously, perhaps, influenced in their conduct on this floor by the supposed interests of their respective schools.

While it cannot be denied that there are medical colleges in this country unsurpassed by those of Europe in their essential appointments and facilities for the education of medical students, the equally undeniable fact remains that we fall far behind them in the systems of study pursued.

These views were elaborated and illustrated at some length, and led up to the following conclusions:—

Entertaining the views above expressed, based in part upon these tabulated expositions, and inspired by the hope of initiating some practical move in the direction of educational reform, I respectfully submit for your consideration the following suggestions:

Proposition I. That a standing committee, to be called a committee on legislation, be appointed for each State, Territory, and the District of Columbia, to consist of five members of the medical profession in good standing, three of whom shall have no official connection with any medical school or college, whose duty it shall be to carry out as far as possible the following instructions:

First. That each one of said committees, or a majority thereof, shall attend the sessions of their respective legislatures, or from time to time as their duties may require, for the purpose of using all honorable means looking to the reduction of the number of medical schools in the United States, and a consequent diminution in the annual number of medical graduates; that as a practical measure to this end they urge the passage of a law requiring that in the future granting of charters for creating medical schools there shall be a clause in every such charter requiring that all schools or colleges thus created shall demand a full term of four years' study before granting a diploma to any student thereof, and that no student shall be admitted to matriculate who has not passed a satisfactory examination, both oral and written, in the ordinary branches of academic study; and, further, that any college failing to show a greater number than fifty matriculates annually for three consecutive years shall forfeit its charter and be abolished.

Second. That they use all diligent effort to secure an ordinance creating in each State and Territory where no such board at present exists, and the District of Columbia, a board of medical examiners, which shall have no connection with any medical school, and which shall be required to examine all applicants for license to practice medicine in their respective States, Territories, and the District of Columbia; and that any person who may be detected in practicing any branch of the healing art without a license granted by said board shall be subject to such penalties as the law may provide. That this committee may be authorized by statute to select and nominate to the governors of the States, Territories, and the District of Columbia, seven competent and learned members of the medical profession to constitute said board of examiners, who shall have the exclusive power to issue licenses to practice the art and science of medicine and surgery.

Third. That the chairman of said committee of five be required to submit at each annual meeting of this association a report embracing a full statement of what has been accomplished by each.

Proposition II. That the faculties of the several medical schools within the limits of the United States be once more urgently requested to call a convention at some central point for the purpose of consultation and adopting some general and uniform system of medical education more comprehensive and rigid in its requirements, and more in accord with the spirit of the age and the advanced progress of medical science, suggesting a four years' term of study, the requirements of a preliminary education, including some knowledge of the classics.

That any college or school which shall refuse to enter into such an arrangement as may be decided upon by said convention shall be excluded from all connection with the American Medical Association, and its alumni not recognized as members of the regular profession.

I am aware that these suggestions embrace some very radical and seemingly impracticable changes; but as they point, in my judgment, to the right direction, I trust that they may not prove to be seeds sown upon barren soil. Be that as it may, I shall at least enjoy the consciousness of having honestly, conscientiously, and fearlessly met the great and pressing issue of the day within the domain of our profession, and of having ex-

cuted, to the best of my ability the most important duty imposed by the responsible position to which you have elevated me. . . .

On motion of DR. W. W. DAWSON the address was referred to Committee on Publication.

DR. N. S. DAVIS presented a proposition on behalf of a number of gentlemen from various sections, that, inasmuch as a larger number of papers are to be read before the Sections than can be well disposed of in the time assigned to their sessions, be it resolved that Sections so desiring may meet at eleven o'clock, A.M. for their special work. Seconded by DR. REYNOLDS, of Louisville, and carried.

Letters of invitation to the visiting members were received from the Chamber of Commerce and the Technical School.

SECOND DAY. — WEDNESDAY, MAY 9TH.

Opened with a report of the Committee of Arrangements.

ADDRESS ON GENERAL MEDICINE,

by PROF. ROBERTS BARTHOLOW, of Philadelphia.

DR. HOLLISTER, of the Board of Trustees for the publication of the journal of the Association, submitted the following report: Weekly circulation, 4,572; receipts for year ending March 31, 1888, \$11,897.98; disbursements, \$16,261.47. Increased receipts, however, exceed increased disbursements, so that the journal is self-sustaining, and a source of revenue to the Association. It is proposed to enlarge the editorial corps. It is requested that the Association shall place at the command of the editor-in-chief the exchanges of the *Journal*, references and book and monographs for review.

DR. WOOD read the report of the Committee on Dietetics, and DR. FRANK WOODBURY that of the Sub-Committee on Infant-Feeding, to the following effect:

REPORT OF SUB-COMMITTEE ON INFANT-FEEDING.

Your Sub-Committee on Infant-Feeding respectfully reports that it has only had the subject under consideration for about two months, and during this time it has opened correspondence with some of the leading authorities both in this country and in Europe, upon the very important questions submitted to it, especially with reference to the proper diet of infants. Though not prepared to make a final report upon the subject at present, it believes that some facts have been elicited which are valuable and which are of sufficient interest to bring before this Association.

Thus far, replies have been received from Dr. Eustace Smith, of London; Dr. J. Lewis Smith, of New York; Dr. Victor C. Vaughan, of Ann Arbor, Michigan; Dr. George F. Rohé, of Baltimore; Dr. F. Forchheimer, of Cincinnati, and others to whom we desire to return thanks for their assistance and courtesy. (The correspondence and replies to queries submitted are appended to this report.)

The leading facts thus far obtained may be very briefly stated as follows:

(1) In the case of an infant, or a child under ten months of age deprived of breast-milk, the artificial substitute provided should be made to correspond with human milk as closely as possible, both in its chemical constitution and in its physical characters.

(2) Fresh, unacidulated cow's milk, when properly prepared is an acceptable substitute for breast-milk. But since the casein of cow's milk coagulates in a heavy, dense mass, while breast-milk curd is light and flocculent, some expedient must be resorted to in order to make the former resemble the latter, so that the digestive powers of the infant shall not be unduly taxed. The casein of cow's milk, according to Dr. Eustace Smith, as a rule traverses the infant's alimentary tract and may be found unchanged in the fecal discharges. It is, therefore, a constant source of irritation, and often gives rise to diarrhoea and entero-colitis. One of the most decided advances in dietetics, in modern times, is the preparation of cow's milk with the aid of digestive agents, as in the method recommended by Professor Frankland. In this method the casein of a por-

tion of the milk is first peptonized by fresh calf's rennet, and to this is added a portion of fresh milk, after heat has been applied to check the process and to prevent complete predigestion; some milk-sugar is finally added, and thus a mixture is obtained which closely approximates human milk in its chemical composition. It has, moreover, been found to serve as an efficient substitute, where the mother's milk is of poor quality, is inadequate in quantity, or is entirely wanting. The special feature of this method is the peptonizing of only a part of the casein, with the employment of heat at a certain stage to arrest the process so that the food shall not be completely digested. The addition of the carbo-hydrate (milk-sugar in this case) is necessary, in order that the food shall closely resemble human milk. The employment of stale, foul-smelling, partially decomposed digestive ferments, for the purpose of comparing cow's milk for infant's food is condemned. The necessary skill and intelligence required to insure uniformity of result for the extemporaneous peptonizing of milk rarely is to be found in the household, and where this process is adopted, the experiment often turns out to be unfortunate and is injurious to the child.

(3) As the rule, raw starch is inadmissible in the diet of young infants, because the digestive powers of the infant are rarely sufficiently active to convert crule starch into a soluble form. The plan advocated by some, of adding starch to the milk in order to mechanically break up the curd, is unphysiological and very objectionable. The products of the complete digestion of starch are glucose and saccharose (maltose), and these, in various forms, have been recommended to be used as additions to the milk, under the name of "Liebig" foods. When in excess, these substances cause diarrhoea, and do not sufficiently nourish the child. Dr. J. Lewis Smith speaks favorably of dextrine, which is a partially digested starch, as a good substitute for glucose and saccharose in such artificial foods. The fact cannot be too strongly insisted upon, which is taught both by clinical experience and by physiological investigation, that the food of either infants or adults, except in special emergencies, should never be fully pre-digested, for fear of permanently weakening or destroying the digestive functions of the stomach.

(4) A great part of the large mortality of infants in all our cities is due to the bad quality of the milk supply, particularly that going to the poorer classes. Professor Vaughan declares that many deaths from so-called cholera infantum are really caused by milk containing tyrotoxin. Authorities are almost unanimous upon the point that in large cities, at least during hot weather, all milk for the nursing-bottle should be boiled several times a day in order to destroy ferment-germs. It is better, at such time, that the food should be freshly prepared for each feeding. In some cases, owing to the variability in the quality of the milk-supply, it may be advisable to resort, for a short time, to condensed or to evaporated milk; in either case diluting and adding cream, or an equivalent soluble carbo-hydrate, in order to make an artificial breast-milk. Desiccated partly peptonized milk, in the form of a milk-fool, containing partly converted starch, (soluble starch, dextrine, and a small proportion of lactose) is a convenient (and when well-made, a very efficient) substitute for the mother's milk.

(5) Where the child is a premature birth, or is feeble from other causes, as great care should be observed in preparing its food as in prescribing its medicine. Experience has demonstrated that success in infant-feeding is dependent upon the ability to individualize the patient, and to select the proper food for each case. For very delicate infants the mother's milk is often found not only inadequate to properly nourish the child, but also positively injurious. This is generally admitted where some obvious dyscrasia exists, as the tuberculous or syphilitic. It is for such delicate infants that artificial mixtures can be made which will agree with the weak digestive functions and satisfactorily nourish the child.

In conclusion, your Sub-Committee would direct attention to the remote and far-reaching effects of the mal-nutrition resulting from improper feeding in early life, to be witnessed in chronic invalids or in premature death of the individual, and to the inevitable physical degeneracy threatening the race where the principles of infant dietetics are neglected. In view of the importance of the subject, the Sub-Committee respectfully asks to be continued in order to further investigate the matter, and to report to the next meeting.

DR. SAYRES offered a resolution that the Committee on Diet be continued, and empowered to enlarge its number, and that the Committee of Arrangements be authorized to give its work a proper place in the programme of the next meeting.

Dr. Sayres accepted as an addition to the resolution, "That the Committee is hereby instructed to present a report at the next meeting of the Association, embodying the general principles to be observed in a rational system of dietetics. Carried.

DR. N. S. DAVIS called attention to three amendments offered at the last meeting.

First amendment, to Section II of Constitution, relating to membership. The substitute proposes that members, by application, shall consist of such members of State, county and district societies as shall make application in writing to the Treasurer, accompanied by a certificate of membership in good standing of their society, signed by its president and secretary, and the annual dues, \$5.00. Such a member shall have all the privileges of a permanent member. Carried.

Second amendment, to Section V. That the Board of Trustees shall consist of nine members, three members to be elected every year, and term of service three years. It shall be the duty of the Secretary of the Association and the various Sections to furnish the Board with all proceedings in their departments. The Board shall have power to appoint the editor, pay salaries, etc. Carried.

Third amendment, which is to supersede the first clause under the head of Standing Committees: "Delegations from each State shall choose two members, registered at the meeting to act as representatives upon the Nominating Committee. At the first election one shall be chosen for one year, the other for two years, and thereafter one member every year, term of office being two years. The duty of the General Committee shall be to meet at the place of and on previous to the meeting of the Association: they shall select Chairman, Secretary, and other general officers, and such sub-committees as will facilitate the proceedings of the Association. If any member fail to be present, the Chairman shall select a substitute from the delegation of his State present at the meeting.

After considerable discussion, an amendment by DR. MURDOCH, of Pennsylvania, that the report be recommitted to the Committee, and amended by DR. JOHNSON, that it be made the special order of business at 12 o'clock, Thursday, was carried.

The Nominating Committee was then announced.

THIRD DAY.—THURSDAY, MAY 10TH.

Opened by the Chairman, DR. KARNETT.

A resolution was offered by the Kansas State Medical Society, denouncing the practice of advertising proprietary medicines in newspapers and religious journals, and the endorsement of editors, both secular and church. The resolution was, on motion, indorsed by the Association.

An invitation from the Philadelphia delegation to the American Medical Association, to hold its next annual meeting in this city, was received.

Committee on Nominations reported as follows:

President, Dr. W. W. Dawson, of Ohio; First Vice-President, Dr. W. L. Schenck, of Kansas; Second Vice-President, Dr. Frank Woodbury, of Pennsylvania; Third Vice-President, Dr. H. O. Walker, of Michigan; Fourth Vice-President, Dr. J. W. Bailey, of Georgia; Treasurer, Dr. Richard J. Duglison, of Pennsylvania; Secretary, Dr. Wm. B. Atkinson, of Pennsylvania; Librarian, Dr. C. H. A. Kleinschmidt, of the District of Columbia.

Trustees to fill vacancies: Dr. E. M. Moore, of New York; Dr. J. H. Hollister, of Illinois; and Dr. J. M. Toner, of the District of Columbia.

Vacancies in Judicial Council filled by Dr. W. A.

Phillips, Kansas; Dr. A. M. Pollock, Pennsylvania; Dr. W. C. Van Bibber, Maryland; Dr. J. F. Hibbard, Indiana; Dr. Chas. S. Wood, New York; Dr. J. McF. Gaston, Georgia; Dr. W. H. O. Taylor, New York; Dr. Geo. L. Porter, Connecticut.

To deliver the address on General Medicine, Dr. Win. Pepper, of Pennsylvania; on Surgery, Dr. P. S. Conner, of Ohio; on State Medicine, Dr. W. H. Welch, of Maryland.

One member of the delegation from each State was chosen to act upon the Committee on State Medicine, and another to act upon the Committee on Neurology.

In case the gentlemen appointed to deliver the general addresses should be unable to serve, a Committee consisting of Drs. J. B. Hamilton, Wm. Brodie, and A. Garcelon were appointed to select a substitute.

Newport, R. I., was chosen as the place of meeting for the Association, on the first Tuesday in June, 1889. Dr. H. R. Storer, of Newport, was elected Chairman of the Committee of Arrangements.

Dr. E. M. MOORE, of Rochester, delivered the address on General Surgery, in which he reviewed the progress of that department of medical science from the time of Hippocrates to the present day, dwelling especially upon the astonishing benefits derived from antiseptics. The paper was very interesting from a historical point of view.

The report of the Committee on Rush Monument reported slow progress, and that the available funds now amounted to \$709.00. There is promised (but not as yet paid) by the Pennsylvania State Society \$100.00, and by the Michigan State Society \$100.00. Funds are deposited in Riggs & Co.'s Bank in Washington, D. C. Report referred to Dr. Garcelon, of the Auditory Committee.

Treasurer's report read, showing receipts for year, \$25,649.90; disbursements, \$23,242.07; balance on hand, \$2,407.83.

Librarian's report received, stating that 7,500 volumes, representing 2,850 titles, were in possession of the Association.

Dr. N. S. DAVIS called for the consideration of the following amendment, which had been made the special order of to-day's session:

The General Committee or Council shall be composed of *two members* from each State and Territorial Medical Society, etc., entitled to representation by delegates in the Association, and from the Medical Departments of the U. S. Army, Navy, and Marine Hospital Service. They shall be chosen by the members registered and present at each annual meeting, from each State, Territory, etc., and from the Medical Corps of the U. S. Army, Navy, and Marine Hospital Service, acting separately on the third day of each annual meeting; each delegation reporting the names of the members chosen to the Permanent Secretary of the Association on the same day, that they may be announced by him at the opening of the morning session of the fourth day. At the first election each delegation shall choose *two* members of the General Committee, one of them shall serve *one* year and the other *two* years, and at each annual election thereafter, one member shall be chosen to serve *two* years, thus making the term of office of members of the General Committee *two* years. It shall be the duty of the General Committee, thus constituted, to organize by choosing annually a Chairman and Secretary, and such sub-committees as may be found necessary to facilitate the work that may be assigned to it; to meet annually at the place and on the day preceding each annual meeting of this Association, and as often during that week as may be necessary; to nominate, on the third day of each annual meeting, all the general officers of the Association (none of them shall be members of its own body), the members of the Committee of Arrangements, the Committee on Neurology, seven Members of the Judicial Council, and three members of the Board of Trustees for Publication for election by the Association; to recommend the place and time of holding the next annual meeting; and to consider and report upon all subjects that may be referred to it by vote of the Association. The

presence of one-third of the whole number of members elected to the General Committee shall constitute a quorum for the transaction of business. If, at any annual meeting of the Association, it shall be found at the close of the General meeting of the first day that a quorum of the General Committee is not present, it shall be the duty of the President and Permanent Secretary to fill the vacancies in the Committee temporarily by selections from the lists of delegates registered as present from the States to which the vacancies belong.

Dr. Davis moved to lay the amendment on the table until the next annual meeting, subject to final action at that time. Carried.

Dr. N. S. DAVIS offered an amendment relating to the affixing of names to the Constitution and Regulations of the Association, and that it be laid upon the table until the next meeting.

Dr. KELLER, of Arkansas, offered the following resolution: "That in future each delegate or permanent member shall, when he registers, also record the name of the Section, if any, that he will attend, and in which he will cast his vote for Section officers." Carried.

Dr. DALY moved to rescind the motion carried at yesterday's meeting, in reference to fixing the time of Section meetings at 11 A. M. Carried.

Dr. BRODIE moved, that hereafter the Committee of Arrangements be instructed not to provide space for pharmaceutical and surgical instruments and book displays at the meeting of this Association.

Met with decided opposition, voiced by Drs. QUIMBY, LUTZ, WOOD, JENKINS, and SCHWAB. On motion, the resolution was tabled.

Adjourned.

Officers elected in the various Sections:

Practical Medicine, etc.: President, Dr. F. C. Shattuck, Massachusetts; Secretary, Dr. G. A. Fackler, Ohio.

Surgery: President, Dr. N. P. Dandridge, Ohio; Secretary, Dr. W. O. Roberts, Kentucky.

State Medicine: President, Dr. J. B. Lindsay, Tennessee; Secretary, Dr. S. Armstrong, Massachusetts.

Ophthalmology, Otology, and Laryngology: President, Dr. G. E. Frothingham, Michigan; Secretary, Dr. G. C. Savage, Tennessee.

Diseases of Children: President, Dr. J. A. Larabee, Kentucky; Secretary, Dr. C. J. Jennings, Michigan.

Medical Jurisprudence: President, Dr. W. Kiernan, Illinois; Secretary, Dr. Evans, Maryland.

Obstetrics and Gynecology: President, Dr. W. H. Wathen, Kentucky; Secretary, Dr. A. B. Carpenter, Ohio.

Dentistry: President, Dr. F. H. Rehwinkel, Ohio; Secretary, Dr. E. S. Talbot, Illinois.

(To be continued.)

—The *Cincinnati Lancet and Clinic* thus translates two epitaphs from *Le Parnasse Hippocratique*, a collection of medical rhymes, which is just now amusing the Parisian doctors:

ON CIVILIAE, THE LITHOTOMIST. — BY DR. MOTET.

Here, where the dead are laid,
In this cemetery lone;
No monument on his grave's displayed,
For he'd rise and crush the stone.

ON VELPEAU. — BY DR. PETER.

Here lies penurious Velpeau, who
A surgeon was in days of yore;
He'd skillfully cut men in two,
He'd cut a farthing into four.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, MAY 17, 1888.

A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.

SUBSCRIPTION TERMS: \$5.00 per year, in advance, postage paid, for the United States and Canada; \$6.00 per year for all foreign countries belonging to the Postal Union.

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THIRTY-NINTH ANNUAL MEETING OF THE
AMERICAN MEDICAL ASSOCIATION.

THE annual meeting of the American Medical Association, held in Cincinnati the past week, was an industrious and harmonious occasion. Some 1,500 delegates were in attendance, of whom the large majority, of course, were from the West and South. Philadelphia sent a considerable deputation, and Boston was better represented than of late years. New York names were comparatively conspicuous by their absence.

The General Sessions were not marred by any wrangles over codes of ethics or organizations of Congresses. The Sections brought out some good work, and some of very exceptional value and interest. In the latter category we must specify Dr. N. Senn's presentation of "Rectal Insufflation of Hydrogen Gas as an Infalible Diagnostic Measure in Ascertaining the Existence of Visceral Injury of the Gastro-Intestinal Canal in Penetrating Wounds of the Abdomen."

Dr. Senn's experiments and conclusions are likely to earn and to deserve the appreciation and gratitude of surgeons who may in future be called upon to deal with the perplexing class of cases which he has been studying.

The paper presented by Dr. V. C. Vaughan, of Ann Arbor, before the Medical Section on the Etiology of Typhoid Fever was also of unusual interest. Dr. Vaughan took advantage of an epidemic of typhoid fever in northern Michigan to examine the water-supply of a family in which thirteen or fourteen members had the disease. The characteristic bacillus was found in the water, was cultivated, dogs were inoculated with the cultures, and there resulted a disease resembling typhoid fever as known in man, in the febrile movement, the clinical symptoms and the pathology. One of the dogs died of perforation of the intestine. If Dr. Vaughan's experiments and observations are substantiated and supported, conclusions of the utmost importance as to etiology and possibly as to treatment must result. Dr. Vaughan was disposed

to explain previous failures to inoculate the lower animals with the disease to the use of bacilli taken from the body and not from external media, as water.

The president of the Association, Dr. A. Y. P. Garnet, of Washington, devoted himself in his address to a consideration of the mission of the American Medical Association. The immediate and most important mission, he thinks, should be a regulation of medical education and the granting of medical degrees. The means which he proposes are set forth in our report of the general sessions.

Dr. Comegys, Chairman of the Reception Committee, in his address of welcome on the part of the local profession, gave an interesting sketch of Drake and Dudley, pioneers from the second decade of this century in medical practice and medical education in Cincinnati and Lexington, Kentucky. He showed Drake to have been a man of broad, far-reaching views, to whom his city and State owe much in many ways.

The next meeting of the Association is to be held at Newport, R. I., the first Tuesday in June, 1889. The last time the Association met in New England was in Boston, in 1865. The only drawback at Cincinnati was the warmth and closeness of the weather, and in this respect, at least, Newport should offer better conditions.

A CONTRIBUTION TO THE STUDY OF GASTRO-
INTESTINAL ANTISEPSIS.

In a paper read at the recent meeting of German physicians at Wiesbaden, Escherich discusses the different antiseptics in use at the present day, which he divides into three groups: soluble antiseptics (corrosive sublimate, phenic acid, boric, salicylic, benzoic, lactic acid, creasote, thymol, resorcin); antiseptics having little solubility (calomel, iodoform, naphthalin); insoluble antiseptics (salicylate of bismuth, salol, betol). While assigning to the medicines of the first group, if they are taken into the stomach in a sufficient state of concentration, a decided microbicide action, it is none the less true that by reason of their ready absorption from the stomach their disinfectant action on the intestine is almost nil. Hence, where intestinal antiseptics are really demanded, the insoluble agents should be chosen; of these, salicylate of bismuth is the type.

Escherich attributes to disinfectant lavages of the stomach a great value in gastric dyspepsia with stasis and fermentation of the food. After syphoning out the contents of the stomach, he performs a thorough lavage with a solution of resorcin, one-half per cent., or benzoate of sodium, three per cent.

In gastro-intestinal fermentations, great pains should be taken to ascertain the quality of the fermentation. In acid fermentation, Escherich forbids cow's milk and all sweet substances, substituting saccharine and glycerine for sugar; peptones, juice of meat and albuminous water for milk. In alkaloid fermentations, he counsels dextrine and the starches in preference to cane

sugar or grape sugar, which are almost wholly absorbed from the stomach. *Appropos* of the treatment of putrid decompositions of the intestinal canal by hydro-carbons, he recalls to mind the case of Moore, who caused disappearance of the putridity of the stools in an infant of sixteen months by the administration every two hours of teaspoonful doses of powdered sugar.

THE MONOPOLY OF ANTIPIRYNE.

THE French Board of Hospital Charities (Administration de l'Assistance publique) has decided to institute the manufacture of and supply the hospitals of Paris with antipyrine, which will henceforth be dispensed under the name *analgesine*.

This move will tend to break the monopoly in this valuable medicine, with whose chemical composition and methods of fabrication manufacturing pharmacists are sufficiently familiar.

The firm that has hitherto had the monopoly of the manufacture and supply of dimethoxyquinizine, because of the patent on the name *antipyrine*, has become immensely rich out of the large profits accruing from this monopoly. Attention has frequently been directed in these columns to that objectionable feature of antipyrine—that, although its chemical composition was known, it was a patent and proprietary drug.

MEDICAL NOTES.

—We learn from English exchanges that the heart disease from which Mr. Matthew Arnold died was hereditary in his family to a marked degree. Not only did the Mr. Arnold's grandfather and his father, the late master of Rugby, die from this cause, but he had also lost a brother from heart disease. A possible explanation of his rashness in jumping as he did, lies in the fact that when a student at Oxford he was nearly the champion at a high jump.

—Dr. T. E. Chatard, Jr., recently read before the Obstetrical Society of Baltimore, the statistics of his father's midwifery practice in Baltimore, between the years 1828 and 1883. The cases numbered 5,265, and were entirely in private practice and mostly in the well-to-do classes. He used no antiseptic precautions whatever, further than ordinary cleanliness, went from puerperal fever direct to other confinements, and attended labor cases while taking care of all sorts of infectious diseases. He had in all 26 cases of puerperal fever with eighteen deaths. During the last 18 years of his practice with 1,200 births, he had no case of the disease. The only period in which there seemed to be any epidemic was in 1845, when he had 10 cases, five in one month. Yet in this same month he attended eight other women who had no sign of the fever.

—The circular of the Marine Hospital Service, under date of April 26th, which happens by a curious coincidence to be about the close of the season of

Northern travel and sojourn in Florida, contains numerous despatches, dated as far back as February 10th, giving particulars of yellow fever in various parts of Florida, at Sanford, Tampa, Plant City, and elsewhere. A lady, wife of a physician, died of yellow fever at Tampa, January 20th, and it was reported as acute Bright's disease. At Plant City, 120 cases and 9 deaths have occurred since October 5th, and the "cleaning up" has not been sufficiently thorough to satisfy Dr. Murray, who was detailed to investigate the epidemic, and who says that the lines of railroad from Tampa to Jacksonville are at various points infested by fomites, which will at the proper time give a good deal of trouble. At Jacksonville, itself, a continued fever, "affecting the highest circle of society only," was prevalent in February and March, with a mortality of 6 to 8%, and presenting the characteristics, according to the attending physician, of enteric fever. But some other physicians have entertained the idea of its being yellow fever.

BOSTON.

—Dr. Durgin, Chairman of the Boston Board of Health, issued May 10th the following circular through the daily press. "The Board of Health estimates that there are not less than 100,000 persons in this city who, if exposed to smallpox, would probably contract the disease, and in view of the fact that several cases have lately been found in the city, the board earnestly advises all persons to apply at once to their family physician for vaccination, or at the city building on Chardon Street, where free vaccination is done from 9 to 11 A. M. No person should trust to a vaccination in childhood for protection through life." The suggestions of the circular are meeting with immediate response.

NEW YORK.

—The commencement exercises of the College of Physicians and Surgeons were held in one of the large lecture-rooms of the new College building on May 10th. The graduates numbered 120, and the address to the class was delivered by the President of the College, Dr. John C. Dalton. The first Harson prize of \$500, for the best examination in all branches, was awarded to Robert A. Sands, a son of Professor Henry B. Sands.

—At the last meeting of the New York Medico-Legal Society, held at the Hotel Buckingham, May 9th, the President, Mr. Clark Bell, announced that the preliminary Committee of Arrangements appointed at the April meeting to take the initial steps for an International Congress of Medical Jurisprudence in New York, had proposed the first Tuesday in June, 1889, as the date for the opening of the Congress. This recommendation having been approved by the Society, the Chair stated that a permanent Committee of Arrangements would be appointed at an early day.

—The commencement exercises of the Mount Sinai Hospital Training School for Nurses, were held May 10th, at the Home on Lexington Avenue, near the

Hospital. There were seven graduates, and prizes were awarded for excellence in ward duty and for the best essay on nursing.

— A meeting was held at Delmonico's on Thursday evening, May 10th, for the purpose of enlisting increased interest on the part of the public in the summer work of St. John's Guild. Among the speakers was President Bayles, of the Board of Health, who said that it was his experience and that of the Sanitary Inspectors, that nothing in the way of organized charity in New York, had done so much to protect infant life from the dangers which beset it in warm weather in the tenement-house districts, as the floating hospital and seaside nursery at New Dorp, Staten Island, maintained by the Guild.

Miscellany.

HEMI-CHOREA FOLLOWING PARTURITION.

A very interesting case was lately presented at Dr. Osler's clinic at the Philadelphia Orthopaedic Hospital, as reported in the *Medical Times*. Mrs. X., the mother of three children, had an attack of inflammatory rheumatism four months after the birth of her last child. From this she recovered, but four months afterward chorea appeared, commencing in the right thumb, and the twitching extended up the entire arm, and subsequently appeared in the right leg, in which the motion was more marked than in the upper extremity. The choreic movements were confined to the right side. When she applied to the dispensary the above condition was noted; examination of the heart revealed a systolic basic murmur. No valvular lesion was detected. The movements were much worse in damp or stormy weather, so that at times she was not able to walk across her room. She was treated by Fowler's solution, five drops three times daily, and increased until doses of ten or twelve drops were taken, or half a drachm daily. An interesting point in the case consisted in the fact that the patient had never had chorea in childhood, and none of her family had been similarly affected.

DIRECT MEDICATION OF THE SPINAL CORD.

In the *New York Medical Journal* for October 31, 1885, and also in the *Boston Medical and Surgical Journal* for December 9, 1886, Dr. J. Leonard Corning, of New York, describes a method of influencing the functions of the cord by injecting medicinal substances of various kinds into its immediate vicinity. Since the publication of the above papers, he has introduced a variety of improvements in the technique of the procedure, which, he thinks, render it at once safe and practical. In the *Medical Record* for March 17, 1888, he gives a detailed description of the various steps involved in the operation. Having examined the vertebrae of the lower portion of the spinal column, Dr. Corning found that the posterior surface of the transverse process, even at its greatest depression, though almost on a level with the posterior aspect of the foramen vertebrae, did not fall at all, or, in rare cases, very slightly below it. Appropriating this

anatomical coincidence, he has formulated a mode of procedure described in the article referred to above.

This is certainly a radical departure in the therapeutics of the cord, and one, too, which cannot fail to attract the attention of the practitioner.

ALBUMINURIA FROM SEWAGE-POISONING.

DR. GEORGE JOHNSON (*British Medical Journal*, March 3, 1888, and *Practitioner*, April, 1888) directs attention to the fact that amongst the many causes of blood-contamination and consequent albuminuria, sewage-poisoning is a by no means an infrequent one. In addition to other forms of disease the result of drain-poisoning, he has met with a number of cases of *albuminuria* which have been clearly traceable to this cause. Just as the occurrence of a case of typhoid or diphtheria in a house would, as a matter of course, excite attention to the drainage and the water and milk supply, so, in the absence of other probable exciting causes of albuminuria, the possibility of sewer-poisoning should be constantly borne in mind. He describes the following as a typical instance of this connection: A gentleman of forty had been ailing on and off for some four or five months, but had been worse during the last month. There had been soreness of the throat and neck, occasional rigors, and a temperature of 102°. A week before the urine had been tested, and found highly albuminous; it was now scanty, turbid with urates, specific gravity 1030. It contained seven grammes per litre of albumen, and when it was cleared by warmth, small hyaline, epithelial, and leucocyte casts were seen. The pulse was full and throbbing. No oedema. The patient was of temperate habits; he had not been exposed to cold; and, in the absence of other apparent exciting cause, Dr. Johnson expressed his conviction that drain-poisoning had been the cause of the sore throat, occasional rigors, and albuminuria. On inquiry, it was found that sewer-gases had been escaping into his house from two untrapped waste-pipes, the one connected with a washing basin in a lavatory, the other with a bath, and both going direct into the drain. The patient remained at the house of a relative until he recovered. He was treated in the usual way by rest in bed, milk diet, warm baths, and purgatives. In about a week the albumen began to decrease; in three weeks it had entirely disappeared, and it has not recurred, the urine being quite normal. It is highly probable that if the cause of this man's illness had not been discovered and removed, continued exposure to the sewer poison would have resulted in an incurable disorganization of the kidneys, as has happened in several cases that have come under Dr. Johnson's observation.

THE TREATMENTS OF COLDS AND BRONCHITIS.

The variations which have taken place in the treatment of this important class of affections, and the most approved treatment of the present time, are referred to in an interesting editorial in the April number of the *Therapeutic Gazette*, from which we make the following extracts:

When the cold is a widespread, general one, involv-

ing the whole body in a condition which, according to our own thinking, is a form of subacute rheumatism, with aching pains and general wretchedness, a free laborant sweat, followed by a few full doses of quinine, will often liberate the sufferer at once, especially if the sweats be aided by a mercurial or other purgation. Coryza has long been a bugbear to the family doctor, but, thanks to bismuth and cocaine, we are now enabled to view it without tremor. We learnt also quite recently a curious lesson from an old barber: Happening to be in the shop when suffering from a violent cold in the head, the grizzled remnant of a colored regiment, now Junior Vice-Commander (Brigadier-General) of the Grand Army of the Republic, offered at once to cure us by manipulation. After much banter and the agreement of no cure, no pay, the editorial head was well manipulated by the mysterious procedure known as dry shampooing, and the result certainly was that the coryza disappeared. Bismuth and cocaine injections into the nose, we think, almost invariably, however, bring relief without calling in the assistance of the manipulator.

A mixture which we have often used with great advantage, and which is readily prepared in the household without the intervention of the apothecary, is made by adding a dessertspoonful each of whiskey, paregoric, and glycerin, and thirty minims of chloroform; the whole to be well shaken, and to be taken in teaspoonful doses *pro re nata*. In our earliest medical teaching was inculcated a profound faith in the value of hydrocyanic acid and wild cherry bark as a means of quieting a cough. Wild cherry bark preparations contain scarcely more than a trace of the prussic acid, and certainly are useless.

The ordinary depressing expectorants of our boyhood and of the text-books have in our practice been replaced very largely by the citrate of potassium. If tartar emetic or ipecacuanha be given in such dose as to produce prolonged nausea and vomiting, it will undoubtedly usually bring about free secretion in the early stages of acute bronchitis, but the method is so disagreeable and so exhausting that it is only to be tolerated when the patient is a robust man, to whom time is so important that it is essential that he be cured in the most speedy manner possible, even at great bodily inconvenience and some risk. Unless the older depressant expectorants be given in nauseating doses they have comparatively little power, and we think that any of our readers who will use the following cough-mixture in the first stages of bronchitis will never depart from its employment, unless some new remedy of greater power be discovered. The dose of it, of course, must be varied according to the strength and peculiarities of the individual patient. That which we indicate is for a robust man:

R. Potass. citrat.,	℥i.
Sue limonis,	f 3 iss.
Syr. ipecac.,	f 3 ss.
Tr. opil camphor.,	f 3 iii.
Syrupl. q.s. ad	f 3 iii.
S. Dessertspoonful every two hours.	

Of the older stimulating expectorants, the only ones which still retain our confidence are the muriate of ammonium and the syrup of garlic. The ammonia salt does seem to have a very peculiar influence upon the respiratory mucous membrane. It is valuable in acute bronchitis when free secretion has once been established, but in some cases it seems also to have the power of bringing about secretion. In the

rare instances in which the citrate of potassium mixture fails, we habitually resort to the muriate of ammonium, and have often seen very good results.

RESOLUTIONS OF WORCESTER DISTRICT MEDICAL SOCIETY ON THE LATE DR. R. R. CLARKE.

Whereas, The Worcester District Medical Society has received with sincere sorrow the intelligence of the decease of our late respected friend and associate, Dr. R. R. Clarke:

Resolved, That by the death of Dr. Clarke, this Society has lost one of its most worthy members, a man of most excellent judgment and skill in his profession, and always interested in all movements looking towards its advancement.

Resolved, That the community among whom he walked, has been deprived of a physician who formed in a rare degree all the duties and obligations belonging to that profession, and one who endeavored throughout his forty years of active practice among them to be a true representative of the noblest and highest principles governing the medical profession.

Resolved, That in our sorrow we appreciate the fact that one of our profession and a member of our Society should have been so prominent in, and should have served so faithfully his country, his state, his district, and his town; and that through him we have contributed so largely, not only to that which pertains to the physical welfare of Society, but also to its educational and moral interests.

Resolved, That the proceedings of the Worcester District Medical Society this day in honor of our late lamented brother, be engrossed upon the records and have been read to the family of the deceased, with the assurance of our deep sympathy in their bereavement; also that a copy be transmitted to the *Boston Medical and Surgical Journal* for publication.

(Signed) W. H. LINCOLN.
O. H. EVERETT.
LEONARD WHEELER.

WILLIAM B. GOLDSMITH, M.D.

At the meeting of the Boston Medico-Psychological Society held April 19th, special reference was made to the recent death of Dr. W. B. Goldsmith, and a committee was appointed to prepare resolutions, to be reported to the Society at a subsequent meeting.

This Committee reported as follows:—

"The Boston Medico-Psychological Society, deeply impressed with the loss it has sustained by the death of its beloved member, Dr. William B. Goldsmith, Superintendent of the Butler Hospital, at Providence, R. I., wishes to place on record its testimony to his exalted character, his great ability as a physician and a superintendent, and his genial and generous nature as an associate.

Dying at the early age of thirty-four, when it seemed that a long life of usefulness had only just begun, he had already accomplished, by his great attainments and faithful, conscientious work, that of which older men might well be proud; and had made his influence felt, not only in the hospitals, but also in the community, in wider knowledge of mental disease, and more intelligent and liberal treatment of the insane.

Resolved, That by his death this Society has lost one of its most distinguished members, a valued contributor, and each of us a tried and cordial friend.

Resolved, That the Secretary of the Society, in communicating to the family of Dr. Goldsmith this expression of its esteem, and its sorrow at his death, be requested to extend to them our heartfelt sympathy in their grief.

GEORGE F. JELLY,
WALTER CHANNING,
PHILIP COOMBS KNAPP, } Committee.

Correspondence.

DIABETIC FOOD.

BOSTON, May 12, 1888.

MR. EDITOR,—The readers of the JOURNAL will remember the well-timed article by Dr. Chas. Harrington, showing the utter worthlessness of so-called diabetic breads and flours, and giving the results of his analysis of the same, also the able discussion which followed.

Neither this exposure nor the fear of Chap. 208, Sec. 3, Public Statutes, which says: "Whoever fraudulently adulterates for the purpose of sale bread or any substitute intended for food with any substance injurious to health shall be punished by imprisonment, or fined not exceeding

¹ Journal, Vol. cxvii, No. 12, pp. 286 and 291.

three hundred dollars, and the article so adulterated shall be forfeited and destroyed under the direction of the court," seem to deter these parties from continuing their fraudulent practices of foisting upon the public diabetic breads and flours, which are so in name only.

It appears that Dr. Pavy² found even a worse state of affairs in relation to diabetic foods than did Dr. Harrington, for while the analysis of the latter gentleman shows the several foods in question to contain as follows: 30 per cent. starch = 35 per cent. sugar; 36 per cent. starch = 40 per cent. sugar; 40 per cent. starch = 44 per cent. sugar; 66.96 per cent. starch = 74.40 per cent. sugar; those analysed by Dr. Pavy are said by him to yield as high as 84 per cent. and 89 per cent. starch.

It will be conceded on all sides that the chief obstacle in the treatment of diabetes when the diet must be restricted

is the difficulty of obtaining a proper substitute for bread, or in other words, a food practically minus starch. The above facts, therefore, taken in connection with the increase of diabetes, has prompted the writer to give some thought to the preparation of a diabetic bread and flour, and the result demonstrates that a palatable, nutritious and inexpensive bread can be made from the following; viz. chemically pure gluten flour, lignose and cellulose from potato, etc., etc. Bread prepared from this formula gives, at the hands of Dr. B. F. Davenport, dextrose, 17 per cent.; anhydrous starch, 15.28 per cent. = 16 per cent. sugar.

The reader will kindly compare with the analysis above quoted. In conclusion, I would state that the American Health Supply Company, of Boston, has agreed to supply physicians and their patients with preparations from this formula.

Very truly yours,

A. GASTON ROETH, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING MAY 5, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diarrhæal Diseases.	Diph. & Croup.	Scarlet Fever.
New York	1,526,081	892	306	17.38	30.36	1.76	7.26	3.08
Philadelphia	1,016,738	480	150	12.48	9.15	1.66	3.12	.42
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,100	—	—	—	—	—	—	—
Baltimore	437,135	146	52	12.42	8.97	2.07	1.38	.69
Boston	407,024	220	69	13.50	18.60	2.25	7.20	1.80
New Orleans	248,000	—	—	—	—	—	—	—
Buffalo	230,000	—	—	—	—	—	—	—
District of Columbia	225,000	89	31	20.91	7.38	2.46	1.26	—
Pittsburgh	210,000	66	24	13.68	22.80	—	3.04	—
Milwaukee	200,000	73	38	50.69	11.16	27.40	5.48	1.38
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	—	—	—	—	—	—	—
Charleston	60,415	34	17	14.70	5.88	8.82	—	—
Portland	40,000	14	4	6.25	12.50	—	6.25	—
Worcester	76,328	32	15	9.39	25.00	—	—	—
Lowell	69,530	34	12	20.58	11.76	11.76	5.88	—
Cambridge	64,079	21	7	19.04	3.52	4.76	14.28	—
Fall River	61,203	22	5	9.10	13.15	—	—	4.55
Lynn	51,467	24	—	29.12	8.32	—	20.80	—
Lawrence	40,173	23	5	8.70	21.95	—	—	—
Springfield	38,952	—	—	—	—	—	—	—
New Bedford	36,298	12	1	8.33	8.33	—	8.33	—
Somerville	33,307	5	1	—	20.00	—	—	—
Holyoke	32,887	16	9	25.00	25.00	12.50	6.25	—
Salem	28,751	14	3	7.14	14.28	—	—	—
Chelsea	27,532	9	—	—	—	—	—	—
Taunton	24,979	13	5	38.45	7.69	—	7.69	30.76
Haverhill	24,796	6	1	—	16.66	—	—	—
Gloucester	24,784	—	—	—	—	—	—	—
Brockton	23,187	5	2	20.00	—	—	—	—
Newton	21,105	7	2	28.50	14.28	14.28	14.28	—
Malden	18,932	6	4	16.66	—	—	16.66	—
Fitchburg	17,534	6	—	16.66	—	16.66	—	—
Waltham	16,651	12	1	—	33.33	—	—	—
Newburyport	13,839	4	2	—	25.00	—	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 2,224; under five years of age 760; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhæal diseases, whooping-cough, erysipelas and fevers) 374, acute lung diseases 447, consumption 325, diphtheria and croup 122, diarrhæal diseases 66, scarlet fever 41, typhoid fever 34, measles 32, cerebro-spinal-meningitis 19, whooping-cough 17, erysipelas 14, small-pox 13, malarial fever 9, puerperal fever 7. From typhoid fever, Philadelphia 16, New York six, Baltimore, Washington, Pittsburgh and Milwaukee two each, Lowell, Fall River, Lawrence and Gloucester one each. From measles, Washington 11, Baltimore seven, New York and Milwaukee five each, Pittsburgh three, Holyoke one. From cerebro-spinal meningitis, New York nine, Philadelphia three, Worcester two, Baltimore, Boston, Milwaukee, Lynn and Salem one each. From whooping-cough, New York seven, Philadelphia four, Baltimore and Charleston two each, Boston and Washington one each. From small-pox, Philadelphia seven, New York six. From erysipelas, New York five, Philadelphia, Boston and Mil-

waukee two each, Pittsburgh, Worcester and Lynn one each. From malarial fever, New York eight, Philadelphia one. From puerperal fever, Philadelphia and Milwaukee two each, Boston, Pittsburgh and Lawrence one each.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending April 21st, the death-rate was 19.9. Deaths reported 3,585; infants under one year of age 813; acute diseases of the respiratory organs 363, whooping-cough 151, scarlet fever 48, diarrhæa 44, fevers 40, measles 37, diphtheria 25, small-pox (Sheffield 12, Hull three, Oldham two, Bristol and Manchester one each) 19.

The death-rates ranged from 29.6 in Plymouth to 45.7 in Brighton; Birmingham 21.3; Bolton 19.8; Bradford 17.9; Hull 17.0; Leeds 22.4; Leicester 17.8; Liverpool 19.7; London 18.9; Manchester 13.9; Nottingham 18.8; Sheffield 21.1; Sunderland 16.2.

In Edinburgh 20.1; Glasgow 22.6; Dublin 24.8.

The meteorological record for the week ending May 5, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, May, 5, 1888.	Barom- eter.	Thermometer.				Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	5.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	5.00 P. M.	10.00 P. M.	7.00 A. M.	5.00 P. M.	10.00 P. M.	7.00 A. M.	5.00 P. M.	10.00 P. M.	Duration, Hrs. & Min.	Amount in inches.
Sunday, ... 29	29.98	55.0	65.0	47.0	55.0	73.0	70.0	66.0	N.W.	E.	S.W.	5	12	10	C.	C.	C.		
Monday, ... 30	29.95	44.0	54.0	40.0	79.0	85.0	92.0	85.0	N.W.	E.	N.E.	5	14	16	F.	H.	H.		.03
Tuesday, ... 1	29.90	42.0	47.0	39.0	84.0	92.0	96.0	91.0	N.	S.E.	E.	13	12	12	O.	O.	R.		.03
Wednesday, ... 2	30.06	38.0	41.0	35.0	82.0	68.0	71.0	71.0	N.	N.E.	N.E.	14	16	8	S.	O.	O.		
Thursday, ... 3	30.23	45.0	59.0	35.0	61.0	56.0	61.0	58.0	N.W.	E.	N.W.	9	12	12	C.	O.	C.		
Friday, ... 4	30.26	45.0	48.0	43.0	49.0	70.0	60.0	40.0	N.	E.	S.E.	7	8	6	O.	O.	O.		
Saturday, ... 5	30.10	48.0	56.0	42.0	96.0	73.0	93.0	87.0	S.	N.W.	N.E.	6	5	6	R.	O.	R.	11	.25
Mean, the Week.		53.0	40.0																

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 5, 1888, TO MAY 11, 1888.

McKEE, JAMES C., lieutenant colonel and surgeon. Granted leave of absence for one month. S. O. 107, A. G. O., May 9, 1888.

GREENLEAF, CHAS. R., major and surgeon.

O'REILLY, ROBERT M., major and surgeon.

SKINNER, JNO. O., captain and assistant surgeon. Detailed as members of a Board of medical officers to assemble at the United States Military Academy, West Point, N. Y., on June 1, 1888, to examine into the physical qualifications of members of the graduating class and of the candidates for admission to the Academy. S. O. 104, A. G. O., May 5, 1888.

BROWN, HARRY E., major and surgeon. The leave of absence for seven days granted by Order No. 68, Fort Barrancas, Fla., May 2, 1888, is extended twelve days. S. O. 90, Division of the Atlantic, May 8, 1888.

LORING, LEONARD Y., captain and assistant surgeon. Granted leave of absence for three months on surgeon's certificate of disability. S. O. 100, A. G. O., May 7, 1888.

BROWN, PAUL E., captain and assistant surgeon. Granted leave of absence for six months on surgeon's certificate of disability, with permission to leave the Division of the Atlantic. S. O. 107, A. G. O., May 9, 1888.

BENHAM, ROBERT B., captain and assistant surgeon. To proceed from Fort Du Chesne, to Fort Douglas, Utah, and report to commanding officer of that post, not later than 25th inst., to accompany battalion of Sixth Infantry to Fort Lewis, Colo. Upon completion of this duty, will return to his station, Fort Du Chesne, Utah. S. O. 33, Department of the Platte, May 3, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING MAY 12, 1888.

CABELL, A. G., passed assistant surgeon. Detached from "Adams," proceed home and wait orders.

SIMONS, M. H., surgeon. Detached from Naval Academy and to practice ship "Constellation."

HOLWITZ, P. J., medical director. Leave of absence for six months to leave the United States.

A Naval Medical Examining Board is now in session at the Naval Hospital, Philadelphia, for the examination of candidates for admission to the Medical Corps of the Navy. There are eleven vacancies in the list of Assistant Surgeons. Permits for examination can be obtained on application to the Secretary of the Navy.

SOCIETY NOTICE.

MASSACHUSETTS MEDICAL SOCIETY.—One Hundred and Seventh Anniversary. The Annual Meeting will be held at 9 o'clock, A. M., Wednesday, June 13, 1888, in Huntington Hall, at the Institute of Technology, Boylston Street (between Berkeley and Clarendon), Boston. Twelve o'clock, M., the Annual Discourse, by B. Joy Jeffries, M.D., of Boston. One o'clock, P. M., the Anniversary Chairman and Invited Guests will meet the Fellows of the Society at a Reception and Banquet to be held at Hotel Vendome. The Fellows, in order of seniority, will walk in procession to the entrance on Commonwealth Ave-

nue. To enable the Committee to make suitable arrangements, it is earnestly requested that Fellows procure tickets before noon on Wednesday. The usual arrangements have been made for the preceding day, Tuesday, June 12th. By order of the President. FRANCIS W. GOSS, Recording Secretary. Roxbury, May 14, 1888.

PRELIMINARY ANNOUNCEMENT OF THE COMMITTEE OF ARRANGEMENTS OF THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

This Association will hold its first triennial session in the city of Washington, during the 18th, 19th and 20th of September next. The meetings of the Congress will be held in the evenings, beginning at 8 P. M., and those of the Societies composing the Congress will be held during the day-time, according to the programme each may respectively provide. The sessions will be open to the profession.

The Local Committee of Arrangements of the Congress has secured places of meeting for the Congress and each Society in close proximity, so that the members of the respective societies can interchange attendance at pleasure, without inconvenience.

It is the purpose of the Executive Committee of the Congress to print the programmes of all of the societies, provided copies be supplied on or before August 15.

The Local Committee requests the secretaries of the societies to forward the names of those of their invited guests who have accepted their invitation, designating them as Foreign and American.

The Committee of Arrangements is composed of one member of each society represented in the Congress, as follows:

SAM'L C. HURSEY, Association of Am. Physicians, Washington.
J. FORD THOMPSON, Am. Surgical Association, Washington.
R. T. EDGS, Am. Neurological Association, Washington.
E. C. MORGAN, Am. Laryngological Association, Washington.
W. W. JOHNSON, Am. Climatological Association, Washington.
J. E. ATKINSON, Am. Dermatological Association, Baltimore.
A. SYDNEY ROBERTS, Am. Orthopedic Association, Philadelphia.
H. NEWELL MARTIN, Am. Physiological Society, Baltimore.
SAMUEL THOROLD, Am. Ophthalmological Society, Baltimore.
S. O. RICHES, Am. Otolaryngological Society, Washington.
A. T. CABOT, Am. Association of Genito-Urinary Surgery, Boston.

Inquiries may be addressed to the Chairman, Dr. Bussey, at Washington, or to the representative member of each Society on the Committee.

It may also be stated that the Committee of Arrangements of the American Gynecological Society, which will hold its next annual meeting in Washington at the same time, is composed of Drs. Bussey, Taber, Johnson, and King.

BOOKS AND PAMPHLETS RECEIVED.

Reports of the Home for Sick Children, Cincinnati. October 1, 1883, to October 1, 1887.

Lectures on Certain Diseases of the Jaws. Delivered at the Royal College of Surgeons of England, 1887. By Christopher Heath, F.R.C.S. 64 illustrations. Philadelphia: P. Blakiston, Son & Co.

Quiz Compend: No. IV. A Compend of Human Physiology. Especially adapted for the Use of Medical Students. By Albert P. Brubaker, A.M., M.D., Demonstrator of Physiology in the Jefferson Medical College, etc. Fourth Edition, revised and enlarged, with illustrations and a table of physiological constants. Philadelphia: P. Blakiston, Son & Co. 1888.

Original Articles.

THE ORIGIN OF TYPHOID FEVER IN HOSPITALS, AND THE MEANS SUGGESTED FOR ITS PREVENTION. A CONTRIBUTION.¹

BY REGINALD H. FITZ, M.D.,
Visiting Physician to the Massachusetts General Hospital.

IN his article on "Typhoid Fever" in Pepper's "System of Medicine" (1885, I, 248), Dr. James H. Hutchinson says: "During the past twenty-four years I have been almost uninterruptedly connected with large general hospitals, and during that time have had a large number of cases of typhoid fever under my care, and a still larger number more or less under my observation. During all this time I have never known but one case to originate within a hospital, and that occurred in a servant whose duties did not bring her in immediate contact with the sick."

During my service in the wards of the Massachusetts General Hospital in the summer of 1887, there was admitted a young girl, suffering from debility and hysterical paraplegia. After a stay of four weeks, in which time she had greatly improved, she was transferred to the Convalescent Home in Belmont. On the day following her arrival, symptoms of typhoid fever made their appearance. Three days later she returned to the Hospital, and remained there till her recovery from the attack. The suggestion was so direct that her disease owed its origin to causes existing within the Hospital, that it seemed desirable to make an inquiry into the frequency of such cases, with the view of preventing their occurrence. The visiting physicians appointed Dr. Tarbell and the writer a committee for the above purposes, and the present communication is the outcome of their research.

It is obvious that the discovery of a small number of isolated cases, extending over a given period of years, is of as much importance in demanding a remedy as the occurrence of many cases in the same length of time or in a shorter period. Some of the visiting physicians were able to recall solitary instances, and letters were written to the several gentlemen who had served as medical house-officers during the past ten years. From their intimate relations to the patients, it was thought they would be most likely to remember the class of cases under consideration. Ward-tenders, nurses, and other employés were also asked to assist in the search.

The names of a number of patients were thus secured, and the records of the Hospital were examined for the detailed description of their symptoms. The following abstracts were made from these records:

CASE I. October 24, 1882, medical externe. In charge of the Convalescent Home, but came each day to the Hospital, where he stayed some six hours. Has not felt perfectly well for a week, but his disease began five days before he entered the Hospital as a patient. The symptoms were those of typhoid fever; he died on the eleventh day, and the characteristic lesions were present.

The home at Belmont is designed solely for convalescents, especially for those able to take care of themselves. It contained no cases of typhoid fever. On the contrary, numerous patients with this disease are to be found during the autumn in the Hospital. Although the evidence is insufficient to warrant the as-

sumption that this case arose from causes existing within the Hospital, the possibility of such an origin is obvious.

CASE II. September 11, 1883, medical nurse. She has been a hospital nurse in Lynn for several months, but has been employed at the Massachusetts General Hospital for the past nineteen days. Has felt tired for some time, and for the past two weeks has had nausea and dizziness in the morning. Four days ago was attacked with chills, headache, and pain in the bowels. There is now some tenderness on pressure at the right of the abdomen. The temperature rose gradually during the first week to 105° F., then descended, day by day, for nine days, till it reached the normal point. It remained in the vicinity of 99° F. for several days, and she was discharged well nearly two months after her admission as a patient.

The evidence afforded by this case is rather one of possibility than of probability. If she had become infected with the typhoid poison before her presence in the Hospital as nurse, a period of fifteen days elapsed before suggestive symptoms were apparent. It is evident that with such a period of incubation, the disease may have been contracted before she became employed at the Hospital. On the other hand, an interval of fifteen days is quite sufficient to permit the infection to have occurred from conditions existing within the Hospital, in which case her debilitated state may have acted as a favoring cause.

CASE III. October 26, 1883, medical and surgical nurse. She has been on duty in the Hospital for seven months. During the past three weeks has felt very tired at night, and has suffered from occasional headache. These symptoms have been much worse during the past three days. Two sharp chills to-day, and intense pain in the head. Temperature 103° F. The temperature rose to 105° F. during the first three days, and gradually fell to the normal, being 101° F. at the end of the third week. She was discharged well, 13th of December. The conspicuous symptoms of her attack were headache, nocturnal delirium, and prostration. An eruption resembling rose-spots and sudamina were observed.

The above is regarded as a case of probable intrahospital origin. It is, of course, possible that the morbid poison may have been obtained from sources without the Hospital. The presence of typhoid patients, and the constant exposure of the nurse to the influences emanating from them, offer a more direct explanation of the origin of the attack.

CASE IV. November 20, 1884, medical ward-tender. For two weeks he has had malaise, with increasing anorexia. Headache for several days. Diarrhoea and chills in the past two days. Temperature 102° F. From this point the temperature rapidly rose to the maximum, 105° F., and gradually fell to normal, which it reached in the fifth week. Recovery then took place. Rose-spots and gurgling in the right iliac fossa are recorded; also diarrhoea, sordes, delirium, and twitching of tendons of wrist.

This patient is reported to have been not over-cleanly in his habits. He is said to have eaten his meals without any preliminary hand-washing, immediately after giving the bed-pan to a typhoid patient. In the light of his habits and exposure, it seems fair to regard this case as having originated within the Hospital.

CASE V. August 10, 1885, medical and surgical

¹ Read before the Boston Society for Medical Improvement, April 22, 1888.

ward-servant. For the past eight days she has had headache, loss of appetite, epigastric pain and malaise. Five days ago she went into the country but has felt hot and weak. There have been free movements of the bowels during the past three days. She returns to the hospital for treatment with tenderness and gurgling in the right hypogastrium. Temperature 102.4° F. At the end of twelve days the temperature became normal and recovery then took place. Doubtful rose-spots were noted.

The ward in which this person was employed is filled with private rooms, in one of which was a typhoid patient at the time she was taken sick. There seems no reason to suppose that she was infected during her brief absence from the Hospital. She left on account of illness, and was away too short a time for typhoid fever to have been acquired, except in the most violent cases.

CASE VI. November 15, 1886, medical interne. Restless five days ago, since when has had headache, backache and malaise. Death occurred at the end of the third week. The symptoms observed during life and the lesions found after death were characteristic of typhoid fever.

CASE VII. May 24, 1887, medical nurse. She has had several cases of typhoid fever under her care during the past month. In this time she has suffered from headache, general malaise and gradual loss of appetite. Three days ago the headache became very intense; there was severe backache and general weakness. Took her bed yesterday; temperature 103.4° F. Tenderness and gurgling are now present in the right iliac fossa. Rose-spots subsequently made their appearance. The temperature became normal at the end of the fourth week and she recovered.

The last two cases require no comment as the probability is direct that their origin was due to exposure in the hospital.

CASE VIII. June 20, 1887, medical patient. She entered May 18th, suffering from debility, and was sent to the Convalescent Home, June 1st. She remained there ten days, and, when discharged, never felt so well in her life. Three days later she went to a hotel as chambermaid, but after three days' service lost her appetite, was dizzy and chilly. On the following day she had persistent vomiting and the onset of a diarrhoea, which has since continued. There is now tenderness and gurgling in the right iliac fossa. Temperature 104.4° F. Rose-spots subsequently appeared. The temperature reached 105° F., on the second day in the Hospital, and fell to 99° F. at the end of the fifth week. She was discharged well.

It seems probable that the origin of the disease in this case is to be sought rather in influences existing in the hospital than in those at the Convalescent Home, or in the hotel. A period of incubation of at least sixteen days is necessary to support the first assumption. The experience of the hospital in connection with the cases of typhoid fever received from the steamship *Prussian*, shows that infection within this limit is quite possible. This ship landed her passengers in Boston May 10, 1887, having been ten or twelve days on her voyage from Glasgow. Two days later cases of typhoid fever arose among her passengers and eventually, as I am informed by Dr. S. H. Durgin, of the Board of Health, about one-sixth suffered from the disease. Many of the patients were admitted to the hospital. In two of these the symp-

toms did not appear until the 24th and 25th of May respectively. It is, of course, impossible to say at what time the infection of these cases took place. But as an interval of fifteen days occurred between the arrival of the ship and the outbreak of the disease in one case, a period of incubation of sixteen days is evidently quite possible.

The infection of Case VIII is also more likely to have taken place at the Hospital than at the Home, because the latter contains no acute cases. It is least likely to have taken place in the hotel on account of the then necessarily brief period of incubation. The case is classified, however, as one of possible, not of probable, origin in the hospital.

CASE IX. September 18, 1887, medical patient. She entered the Hospital a month ago with hysterical paraplegia, improved rapidly, and was sent to the Convalescent Home September 6th. On the day after arrival she had headache and dizziness, soon followed by diarrhoea, and on the following day she was obliged to take to her bed. She is re-admitted to the hospital with a temperature of 104.2° F., tenderness on pressure in both iliac regions, rose-spots and enlarged spleen. The temperature was at its maximum on the sixth day and remained at the normal point from the twelfth to the nineteenth day. A relapse then took place lasting some five days. She was discharged well. There seems no room for doubt that this case owed its origin to causes existing within the Hospital.

CASE X. September 19, 1887, medical patient. This woman entered without any history of previous illness, on the fifth day of an apparent attack of acute articular rheumatism. A systolic souffle was heard at the apex on the fifth day after admission, and two days later a friction-sound was recognized at the base of the heart. The temperature was 101.8° F. It remained between 100° F., and 101° F., till the sixteenth day when it rose for four days, reached its maximum 104.4° F., then gradually fell to the normal. Defervescence extended over a period of nearly six weeks. Two days after the rise began the abdomen is found to be "full and tympanitic, slightly tender in the right iliac region. Tongue dry, with thick brownish coat, sordes on teeth, mental condition dull. A few hyperemic papules, redness disappearing on pressure, are present." On the next day "the wrists are tender on pressure," and several movements of the bowels occurred during forty-eight hours. Two days later a systolic souffle is distinctly heard in the pulmonic area and the pulmonic second sound is accentuated.

"The abdomen is covered and the posterior aspect sprinkled with nearly circular spots varying in size from a large pin's head to size of a cent, with intervening healthy skin. These patches are raised above the surface, the larger ones more so at the periphery than at centre. Smaller ones pretty uniformly raised. They have dull red margins, redness disappearing on pressure. 'Annular Roseola.'"

Twelve days later, the general condition of the patient progressing satisfactorily, it is noted, "wrists somewhat painful on motion. An indistinct souffle can be heard over base of heart."

During the rest of her stay in the Hospital, the slight pain and tenderness in the joints persisted for some time. The souffle near the pulmonic area disappeared, but marked pulmonic accentuation persisted.

Although this case is registered as one of typhoid

fever, the possibility of its being one of rheumatism is admitted. Many of its characteristics will be recognized as those occurring in acute ulcerative endocarditis. If the case be regarded as one eventually of typhoid fever, it is obvious that the latter disease may have originated, as a complication, from causes within the Hospital. A period of eleven days had elapsed after her admission before the existence of possible typhoid fever seemed probable. The case is, therefore, included as an illustration of possible typhoid of intra-hospital origin, although this possibility is regarded as doubly remote.

CASE XI. November 28, 1887, medical ward-tender. Well till three days of failing appetite; pain in the back and limbs and cough were followed by pain and tenderness in the right inguinal region, and fever. There was splenic enlargement, crops of doubtful rose-spots, and a continued fever, lasting four to five weeks. Recovery then took place.

The following table summarizes the results of this inquiry: Eleven cases of typhoid fever, of which seven probably and four possibly originated in the Hospital.

		Medical Officers.	Ward-Tenders.	Nurses.	Ward-Servants.	Patients.
1882	Probable Possible	1	..	..	..	..
1883	Probable Possible	..	..	1	..	..
1884	Probable Possible	..	1	..	..	..
1885	Probable Possible	..	..	..	1	..
1886	Probable Possible	1	..	..	..	..
1887	Probable Possible	..	1	1	..	1
Total		2	2	3	1	3

The degree of probability that these seven cases were infected in the Hospital may present itself differently to each of a number of interested persons. It is impossible that the evidence obtainable in such cases can have more than a relative value.

It being admitted that the diagnosis is correct, the data which must lead towards conviction are based on the known variations in the period of incubation, the presence of typhoid cases in the wards, the occurrence of isolated cases during a period of years, and their exclusive limitation to persons connected with the medical or mixed medical and surgical wards.

In Hutchinson's paper, already referred to (p. 260), the following statement is the result of a consideration of the length of the period of incubation: "The conclusion would seem to be justifiable that the period of incubation in typhoid fever is usually between two and three weeks, but that in many cases it does not exceed ten days, and in rare instances has unquestionably been very much less. On the other hand, there are authentic cases on record in which it is said to have reached, or even exceeded, twenty-eight days."

Of the eleven cases considered in this paper, seven were constantly associated with typhoid patients for months. The remaining four were exposed during periods varying from eleven days to one month. It is thus apparent that all the above cases may have been infected within the Hospital.

If the causes of infection were introduced from without, as by impure water or milk, or by contaminated articles of food, an epidemic of the disease would be expected, not isolated cases. Neither would they at all times be limited to the medical service of the Hospital. The same argument holds here with reference to the possible origin of the disease from leaky drains and sewers. The origin of the poison is, then, to be sought for in those typhoid patients who are regularly brought to the Hospital from Boston and the surrounding country.

The most prolific, if not the sole source of typhoid fever is to be found in the patient himself. His dejections are almost absolutely proven to contain the poison of the disease, and it is possible that secretions from the air-passages may also be infectious. The most thorough-going preventive measures are those which shall destroy the influence of both these agents. The more we regard typhoid fever as contagious in the sense of small-pox and scarlet fever, the more efficient will be our preventive measures. Dried faeces and dried sputum are readily diffused by drafts of air. They are as readily inhaled or swallowed as the emanations from the most contagious of diseases. Prevention is best accomplished by destroying the emanations and burying the remains.

Such views are in no way novel, and, of late years, have been preached and practised more or less generally and with more or less vigor. I am indebted to Dr. H. B. Jacobs, medical house-officer, for the following account of the prophylactic measures used in a female ward of the Massachusetts General Hospital during the year 1887. They relate especially to the disposal of the dejections of typhoid patients. An empty, dry bed-pan is taken to the patient, and, after use, is covered and carried out of the ward to the hopper, where it is emptied. It is then rinsed with corrosive sublimate (1-1000) or with carbolic acid (1-20), and subsequently rinsed with water and dried with a cloth which hangs near the hopper. The latter is rinsed with the corrosive or carbolic solution, and water is allowed to run freely for several minutes. The hopper is scoured every morning with soap and sand. The cloth used in drying the bed-pan is changed every few hours; when wet or soiled, it is taken to the rinse-house with the soiled clothes. The patient is wiped with toilet-paper after the use of the bed-pan, and if unusually soiled, is washed with soap and water. If the dejections are involuntary, the patient is immediately washed, and the bed-clothes are changed. The soiled linen, including the gauze used in washing the patient, is carried to the rinse-house as soon as possible. If the bed-linen is particularly soiled it is sprinkled with a disinfectant before its removal.

Notwithstanding these precautions, which were carried out by intelligent, neat and conscientious nurses, two cases of typhoid fever apparently originated in this ward during the summer of 1887. Either the precautions were insufficient or the cases originated outside the hospital. The former alternative alone is under the control of the hospital authorities.

The requirements of disinfection consist in the ab-

solute cleanliness of the patient and his surroundings. This is accomplished by fresh air, daily baths, frequent changes of bed and body linen, the immediate changing of soiled clothes, and the rapid removal and destruction of all infective matter.

Until the researches instituted by Robert Koch,¹ concerning the relative value of disinfectants, our knowledge of the subject was very inexact. Disinfectants and deodorizers were essentially one and the deodorizer was usually the one. It was found that sulphur fumes are not to be relied upon to destroy anthrax-spores, the well-known cause for a sharply defined infective disease, namely, malignant pustule. It is, therefore, obvious that they should not be depended upon to destroy the unknown germs supposed to produce other diseases of the same group.

Bromine and chlorine are capable of destroying anthrax-spores with which they are in sufficiently prolonged contact and in sufficient concentration. But their specific gravity is such that as ordinarily used, they cannot reach all parts of the rooms which they are supposed to disinfect.

Even now the recommendations, and, perhaps, requirements, of our boards of health, contain directions which have little in their favor even if they are not worse than useless. In Berlin, according to Pistor² it was not till 1881 that any essential change was made in methods of public disinfection from those prescribed in 1835. In 1886 a further revision was made.

According to these regulations the use of bromine and chlorine is discontinued on account of the previously stated objections. Sulphur fumigations are not recognized as a trustworthy disinfectant, even when the conditions for their use appear to be most favorable. Corrosive sublimate is not employed in consequence of its poisonous qualities, and because it forms insoluble compounds with sulphuretted hydrogen, ammonia and albumen. In the disinfection of the city of Boston, in 1887, according to the sixteenth annual report of the Board of Health, there were used 16,592 pounds of sulphur in fumigation and 2,250 pounds of corrosive sublimate in solution.

The following suggestions for the prevention of the origin of typhoid fever in hospitals are based upon these revised Police-Regulations for Disinfection in Contagious Diseases. They are presented in the form of special directions to nurses in cases of typhoid fever. They have been examined by Dr. Pratt, the superintendent of the hospital, and have been amended and approved by him. They apply equally well to cases in private practice, and may be employed in all contagious diseases. The knowledge and experience of the physician will lead him to make such deviations from these rules as the individual case seems to demand or permit.

SPECIAL DIRECTIONS IN TYPHOID FEVER.

1. Mattresses and pillows (when liable to become soiled) are to be protected by close fitting rubber covers.
2. Bed and body linen are to be changed daily. Bedspreads, blankets, rubber sheets and rubber covers are to be changed at once, when soiled by the patient. Avoid shaking any of these articles.
3. All changed linen, bath-towels, rubber sheets and covers are to be immediately wrapped in a sheet soaked in carbolic acid (1-40). Remove to the rinse-house as soon as possible, and soak six hours in carbolic acid (1-40). Then boil the linen for a half-hour, and wash with soft soap. The rubber sheets and

covers are to be rinsed in cold water, dried, and aired for eight hours. The bedspreads and blankets are to be aired eight hours daily.

4. Feeding utensils are to be thoroughly cleansed in boiling water immediately after being used.

5. Dejections are to be received in a bed-pan containing half a pint of carbolic acid (1-20). The nates are to be cleansed with paper, and finally with compress cloth wet in carbolic acid (1-40).

6. The bed-pan and cloths are to be carried to the tower. Add two quarts of carbolic acid (1-20) in divided portions to the contents of the bed-pan, mix thoroughly by shaking, and throw the liquid into the hopper. The bed-pan and hopper are to be cleansed with carbolic acid (1-20), and wiped dry. The compress-cloths used for the above purposes are to be burned at once.

7. The corpse is to be covered with a sheet wet with carbolic acid (1-40), and removed to the Allen Street House.

8. After the discharge of the patient, mattresses are to be thoroughly beaten and aired every day for a week. The bedstead is to be washed with corrosive sublimate (1-1000).

9. These directions are to be followed until the patient is free from fever.

PROPER AND IMPROPER METHODS OF DISINFECTION.³

BY CHARLES HARRINGTON, M.D.,
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FOR the proper practice of disinfection it is first of all necessary to discriminate between true disinfectants and antiseptics, the former of which destroy the vitality of micro-organisms, while the latter merely prevent or retard their development. This distinction is unfortunately not always borne in mind, and many processes of supposed disinfection are for this reason utterly valueless.

It is also of the very greatest importance that of the many agents recommended as true disinfectants none should be employed except those which have been thoroughly tried and proven by the most reliable and scientific methods, and any agent which fails to pass the requirements based on modern scientific research, should, without regard to its popularity, ease of application, cheapness, or long record of supposed efficacy, be abandoned.

Previous to the investigations of Koch and others of the Imperial Board of Health of Germany, the processes used in disinfection were very numerous, and, owing to a lack of definite knowledge of the subject, were applied in a hap-hazard manner. The list of supposed disinfectants was very long, and included many compounds which owed their supposed value to penetrating odors. The most valuable agent for the disinfection of rooms and furniture, ships and cargoes, was for many years considered to be the fumes of burning sulphur, the efficacy of which was demonstrated as early as 1771, though they had been employed many centuries. Fumigation by means of chlorine, bromine, etc., were regarded as valuable, but of rather minor importance compared with sulphur. In the employment of agents which have since been proved to be valuable, no rules were followed as to proper amount or strength.

In 1881 Koch² demonstrated the unreliability of sulphur fumigations by a long series of careful experiments, begun in 1879, and conducted under the most scientific conditions by himself, Hnepp, Proskauer, Westphal, von Koorre, Platt and Seyde. They proved

¹ Read before the Boston Society for Medical Improvement, April 23, 1888.

² Wolffhügel. Ueber den Werth der Schwefelgase als Desinfectionsmittel. Mittheilungen aus dem kaiserlichen Gesundheitsamte. Bd. 1.

³ Mitth. aus d. Kaiserl. Gesundheitsamte, 1881, I, 234.

⁴ Deutsche, Vrtlsschr. f. off. Gesundheitspf., 1887, xix, 318.

that the gas is not given off in practice anything like what it should be according to theory, that it is not diffused homogeneously, that it does not penetrate large packages beyond the surface, or the ordinary folds of clothing, and that it does not destroy the vitality of all micro-organisms even under the most favorable conditions when moisture is supplied, in which latter case, too, the articles acted on suffer more or less damage. Their conclusions, published in 1881, were that sulphur fumigations are thoroughly unreliable where there are spores, in whatever manner the process is carried out, nor are they effective against micro-organisms not on the outer surface of infected articles, and that their further employment should be wholly abandoned in favor of such agents and processes only as will destroy all infectious matter without exception.

These conclusions have been endorsed repeatedly by other experimenters, and by scientific societies and sanitary conventions. In spite of all this, however, the sulphur fumigation process still has some friends, and it is even prescribed by at least one municipal board of health. An occasional writer contributes an article in favor of this process, but it is usually to be noticed that he writes not from experiments performed, but from older writings of others, and that he rarely alludes to the fact that the value of the process has been even disputed. Koch² showed also that zinc chloride, which has been and is now by some regarded as very active and efficient, is absolutely worthless as a disinfectant. Many other agents were shown to be worthless, and others proved to have a much diminished value. In short, the list of effective chemical disinfectants has been narrowed down to a very small number, some of which, for one reason or another, are ruled out for practical work.

At present about the only chemical disinfectants recommended by scientific men for practical purposes are carbolic acid, chloride of lime and corrosive sublimate, and the employment of these agents requires good judgment and a consideration of individual conditions. The value of these compounds has been repeatedly demonstrated, but their use is naturally somewhat restricted, in that many articles, such, for instance, as stuffed furniture, mattresses, outside clothing, etc., cannot always be treated chemically. Fortunately, however, there is a physical means, which, in its place, is of equal or greater value than the chemical agents. I refer, of course, to heat.

The researches of Koch, Wölffhügel, Gaffky, Löffler, Merke, Hueppe and Lussar, published in 1881,³ and repeated and endorsed by many others, show that steam is more effective in every way than hot air at 140° C., with much longer exposure. It penetrates bulky articles much more quickly, kills all known micro-organisms and spores within fifteen minutes, and does no damage except to a limited number of articles, such as leather, furs, and veneered furniture.

Heat and the few chemicals mentioned have the approval of the leading scientists of the world, who have abandoned the clumsy, unscientific and ineffective processes long in vogue.

The cholera conference at Rome in 1885⁴ agreed on

the following (among other) rules regarding disinfection. The best disinfectants are steam at 100° C., carbolic acid, chloride of lime, and aeration. (Carbolic acid in solutions of two and five per cent., chloride of lime, one and four per cent.) For disinfection of persons, washing and baths of the weaker solutions. For disinfection of the body, bed linen, etc., the following: 1. Destruction by fire; 2. steam; 3. boiling for thirty minutes; 4. soaking in the weak solutions for twenty-four hours; 5. airing for three or four weeks, but only when other means are not available. Leather articles, boots, trunks, etc., to be destroyed or washed repeatedly with the chemical disinfectants. Vomitus and dejections to be immediately treated with the stronger solutions. Soiled linen, etc., which cannot be immediately exposed to steam, to be soaked at least twenty-four hours in the stronger solutions. These and other rules were adopted for yellow fever and other epidemic diseases. No mention was made of fumigations.

Besides thorough disinfection of the patient, the excreta, the linen, etc., etc., during and after cases of infectious diseases, there remains as a very important part of the process the disinfection of the sick room itself. Fumigations being unreliable and valueless, and steaming being naturally impossible, we must have recourse to some other means. Some experimenters recommend washing and sprinkling of the walls, floors and furniture with corrosive sublimate, or, as recommended by Krupin and Wassilieff,⁵ of St. Petersburg, corrosive sublimate and carbolic acid together. Others have suggested corrosive sublimate fumigations, which for obvious reasons are objectionable and dangerous. Others recommend potash soap and carbolic acid for washing floors, and carbolic spray for the walls and furniture. Esmarch,⁷ however, shows that for walls the best method for the removal of infectious material is rubbing them thoroughly with pieces of bread, which process he shows to be efficient, not difficult of application, and unattended by danger. The micro-organisms adhere with great tenacity to the bread, which, with any crumbs which break off and fall to the floor, must be carefully removed and destroyed by fire.

For proper disinfection by steam it is essential that the proper apparatus be somewhere at hand, for without special apparatus the process cannot be carried out. By whom should the apparatus be supplied, and by whom should the process be conducted? Disinfection is more a matter of public than of private interest, and the thoroughness of the operation can best be guaranteed when the process is carried out by competent public authority. It is far better to spend the public money for the prevention of disease than for its treatment. The direct cost may, in many cases, it is true, be less in the treatment than in the prevention of the disease, but in the long run as is shown by statisticians, sickness and death of individuals are a distinct loss to the State. Disinfection should be free to the public, for expense to the individual will always be an obstacle to thorough work. It is true that when a privilege is free it will be abused, and, as has been remarked by Professor Hofmann,⁸ of Leipzig,

² Koch. Ueber Desinfection. Mittheilungen aus dem kaiserlichen Gesundheitsamte. Bd. I.

³ (1) Versuche über die Verwerthbarkeit heisser Wasserdämpfe zu Desinfectionszwecken. (2) Untersuchungen über die Desinfection mit heisser Luft. Mittheilungen aus dem kaiserlichen Gesundheitsamte. Bd. I.

⁴ Deutsche medicinische Wochenschrift, July 23, 1885.

⁵ Ueber Desinfection von Wohnräumen. Zeitschrift für Hygiene. Bd. III., p. 219.

⁷ Der Keimgehalt der Wände und ihre Desinfection. Zeitschrift für Hygiene. Bd. II., p. 491.

⁸ Moderne Desinfectionstechnik mit besonderer Beziehung auf öffentlichen Desinfectionsanstalten. Bericht der xii. Versammlung der deutschen Vereins für öffentliche Gesundheitspflege zu Breslau.

dirty clothes not infected may be brought for the sake of the improvement in appearance, and feather beds for the renovation which the steam gives them, but the abuse of the privilege might be very easily kept under control by simple regulations.

Of the apparatus for steam disinfection I will presently speak in detail.

With the few necessary chemical and physical means of disinfection, and the proper apparatus, and with a proper observance of simple rules, there is no reason why disinfection should not be carried out on scientific principles in every city and town. No public health authorities have any right to retain old abandoned processes whose utter unreliability has been proven by the highest scientific authority. If the retention of obsolete processes is owing to ignorance, such ignorance is more than unpardonable; if not due to ignorance, then it must be owing to a disbelief in what every leading sanitarian in Europe and elsewhere has endorsed.

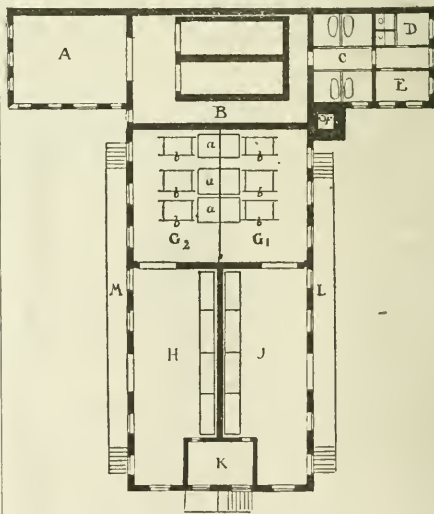
Considering the great strides that have been taken in this subject within the past ten years, it is wrong—and I might with justice use a stronger term—to teach the public a process of disinfection that is worse than useless, in that it leads to a false sense of security, and to compel its employment under heavy penalties. The public should be taught true disinfection, or none. It is difficult at best to educate the public in sanitary matters, but far more so to root out the results of improper teaching.

As a proper method of disinfection, I will instance that adopted by the authorities of Berlin. Disinfection is required absolutely in certain diseases, and conditionally in certain others. The public are taught that thorough cleanliness, frequent airings, speedy removal and destruction of infectious material are most important parts of a whole. It is recommended that the patient be washed daily, and that the body and bed linen be changed as often as once a day if possible. Soiled linen must be changed immediately. The room should be cleansed daily by wiping down with moist cloths, which afterwards must be treated with boiling water for half an hour. The room should be aired frequently and thoroughly by opening the windows. Steam, boiling water, burning, and solutions of carbolic acid, two and five per cent., are adopted as proper disinfectants. All bed and body linen, and all cloths used for wiping down, must be soaked twenty-four hours in two per cent. carbolic, then boiled a half-hour in water, and finally washed with soft-soap solution (twenty grams to ten litres). Infectious dejections, sputa, etc., must be received in vessels a quarter full of carbolic acid five per cent. If the patient should use the water-closet the seat and receiver must be scoured with five per cent. carbolic acid and thoroughly rinsed. Food and drink are not allowed in the sick-room, except as required for the patient alone. Old dressings, etc., are burned, instruments washed in five per cent. carbolic acid, and bad smells got rid of by removal of their causes.

On the cessation of the sickness all unwashable clothing, beds, pillows, mattresses, coverlets, silks, carpets, etc., etc., are tied up in sheets wet with two per cent. carbolic, and taken by the authorities to the public disinfecting station. Valueless material is burned forthwith. Certain articles of ornament and furniture may be wiped down with cloths; and tapestries, hangings, etc., with bread, but the floor must first be

wetted with five per cent. carbolic acid. Any soiled places on the walls (from excreta) are moistened with five per cent. carbolic acid, and scraped off. Floors, doors, windows, etc., are washed thoroughly with carbolic solution, five per cent. The bread and rags used must be burned. When the room with its contents have been well cleansed it must be aired for twenty-four hours. Other rules have reference to the disposal of the dead, and to the attire and personal habits of the attendants, etc., etc.

The articles to be carried to the public disinfection station are called for and returned by the authorities. They are taken away in a closed wagon by experienced men, who during the handling and packing are attired in long linen coats reaching to the feet. On leaving the infected house these coats are sprinkled with carbolic five per cent., folded, and packed with the other infected articles in the wagon. The articles removed are incased in linen wrappers and sacks well moistened with carbolic. Carpets are rolled and not folded, thus avoiding permanent creases which would be caused by steaming. When everything has been packed in the wagon the driver takes the shortest road to the station, and enters the yard on the right (see cut). The infected articles are then unloaded at the platform L, after which the wagon itself is washed with five per cent. carbolic, or corrosive sublimate 1:6000, and stowed in a shed.



Before proceeding to a description of the manner in which the work is done, a brief explanation of the plan of the building will not be out of place.^a A is a store-room for coal and a repair shop. B is the boiler room, containing two boilers, in which the steam is kept under a moderate pressure. C and D are bath-rooms and water-closets for the attendants. E is a store-room for chemicals. The steam passes from the boilers to the apparatuses a, a, a, from which it es-

^a I am indebted for the plan, description, etc., to the article by H. Merke. Die erste öffentliche Desinfections-Anstalt der Stadt Berlin. Vierteljahrsschrift für gerichtliche Medizin und öffentliches Sanitätswesen. Bd. XLV., p. 127.

capas to the chimney F. The articles to be subjected to steam are loaded into the apparatus in the room G 1; previous to this operation they are stored in the room J, which is well provided with racks, shelves, hooks, etc. After the operation of steaming is finished the articles are unloaded from the apparatus in the room G 2, and are stored in H, which is similar to J. There is no possibility of re-infection of the disinfected articles in H by infectious material in J or G 1, as there is no communication between the two sides of the building. K is an office, which is shut off from H and J excepting by two windows, of which the one looking into the store-room for infected articles (J) is hermetically sealed. Communication between J and K is by means of a telephone. Disinfected articles are loaded into another special wagon, at the platform M, and are carried away through the yard on the left.

The process of steaming as carried out is briefly as follows. The articles are loaded into trucks or cages which run into the apparatus a, a, a, the doors of the latter are then tightly closed. The steam is turned on for thirty-five minutes, at the end of which time the apparatus is ventilated for ten more. The attendants in G 2 are then notified by means of a bell that the apparatus is ready for unloading. This is done, the doors of the apparatus opening into G 1 remaining closed until the bell again rings, which is a signal that the trucks have been replaced, that the doors into G 2 are shut, and that the next loading may be begun. When steaming is in any case contraindicated the disinfection is carried on in the usual way with chemical washes.

Many other cities of Europe have these stations for steam disinfection, and there is no reason why we should not have them in this country. It would, of course, be unreasonable to require small towns to provide such elaborate systems, and it would be also unnecessary. Portable steaming apparatuses have been devised for use in small towns and thinly-settled localities, so that proper disinfection is everywhere possible at a very moderate expenditure for transportation, labor and fuel.

REPORT OF PROGRESS IN ORTHOPÆDIC SURGERY.

BY E. H. BRADFORD, M.D., AND B. W. LOVETT, M.D.

POTT'S DISEASE.

DR. ALEXANDER's paper¹ upon "Some Points in the Pathology and Treatment of Caries of the Vertebrae," is a careful study based upon the post-mortem observation of 53 cases of Pott's disease, 5 were cervical in location, 20 dorsal, 20 lumbar, and 8 dorso-lumbar; of the 28 dorso-lumbar cases it was the lower part of that region that was affected. From his cases he concludes that the origin of most cases is either traumatic or pyemic. Half of these cases appear to him to have been traumatic. To the word pyemic he attaches rather a peculiar significance. When spinal disease comes on secondarily to hip disease, to scrofulous abscesses or bone caries, etc., he believes it due to purulent infection, and these are the cases which he calls pyemic.

Cure takes place sometimes by true anchy-

losis between the bodies of the vertebrae; this, unless it occurs at a very early stage of the disease, before much deformity has taken place, is not to be desired, because, a case with great deformity means a shortened life oftener. 22 of these 53 cases died at adolescence, and the average age of cured cases is not twenty years. But oftener than by anchylosis of the bodies a cure takes place by anchylosis of the abnormally pressed together articular processes and the approximated pedicles, and in all cases the first out-pouring of inflammatory tissue takes place here; and he speaks of a case where the bodies were only partially anchylosed, but where the pedicles, laminae and spinous processes were so finally anchylosed that they had to be removed in a solid mass. And this latter is the anchylosis that Dr. Alexander considers the more desirable by far, and the one to be aimed at by antero posterior splints and fixation. He comments upon the very long time necessary for a cure, and speaks of the great harm done by accepting a cessation of symptoms as an indication for discontinuing treatment.

Fleming² advocates the treatment by rest in bed and extension of a certain number of cases of Pott's disease "not suitable for any of the varieties of jacket treatment." His particular method deserves a word of description. The patient wears a Sayre head sling, attached to the head of the bed by rubber tubes which are constantly on the stretch. Counter extension is obtained by a broad towel tightly pinned or sewn around the pelvis, to the middle of which behind is attached a stout calico bandage, and this is fastened to a weight and pulley extension at the foot of the bed. The patient lies on a smooth rubber sheet dusted with boracic acid.

HIP DISEASE.

H. L. Taylor³ describes for the first time a very efficient splint for overcoming adduction in hip disease, either when in the acute stage of the disease it is produced by muscular spasm, or after a cure has resulted, it returns and makes locomotion difficult. The splint is an inside extension hip splint, with the usual foot-piece, applied along the inside of the diseased leg, bearing, however, in the opposite groin by means of a perineal band hung from properly shaped arms. When applied and tightened adduction is necessarily counteracted, and the reduction of a very considerable deformity should be only the matter of a few days or weeks. Extension is obtained, as in the ordinary hip splint, by adhesive plaster applied to the leg. The apparatus is to be worn in bed, and after the reduction of the deformity a retaining abduction crutch is to be added to the ordinary walking splint.

OPERATIVE TREATMENT OF JOINT TUBERCULOSIS.

Gerster⁴ writes of "The Modern Operative Treatment of Tubercular Joint Affections," and first, speaking of the importance of the ice bag as an adjunct to fixation and rest, he says that not only does it give relief to a hot and tender joint, but that even the progress of the disease may be retarded by its use; and Koch has demonstrated by experiment that extraordinary sensitiveness of the tubercle bacilli to temperature changes, so slight a change as two degrees centigrade below the normal of the body being enough to arrest

¹ Alexander. *Liv. Medico Chir. Journal*, July, 1887, p. 367.

² W. J. Fleming. *Glasgow Med. Jour.*, Nov., 1887.

³ H. L. Taylor. *N. Y. Med. Jour.*, Nov. 19, 1887.

⁴ Gerster. *Ann. of Surg.*, April, 1888, 241.

their propagation. It would not, of course, affect the spores, it would only arrest the progress of the disease temporarily, so that one might, in the meantime, give effective local and general treatment.

"The other form of curative and preventative therapy consists in the early ferretting out and surgical evacuation of tuberculous cheesy foci located in the epiphyses of the bones entering into the formation of this or that joint." And discussing the field of mechanical treatment of these affections, it seems as if in tuberculous affections of the joints of adults (mostly in bad circumstances and very likely with phthisis) early excisions were indicated to the exclusion of other treatment as a rule. In children, however, mechanical treatment should be faithfully tried, abscesses should be tapped and injected with iodoform and ether, and finally, if all these measures prove useless on account of inefficient care or virulent disease, operative treatment must be resorted to.

And some of the chief precautions laid down are that all tissue diseased or even morbidly altered should be most conscientiously removed, that in children where the trouble is circumscribed and limited to certain parts of the joint only, the diseased parts should be removed, and that so far as possible the risk should be avoided of what König calls the "operative dissemination of tuberculosis" through the circulation; which means that the Esmarch bandage should be used when possible, that the knife should do the work of the elevator and curette, and that irrigation should wash away the debris.

The after-treatment is determined by the factor whether one wishes mobility or ankylosis in a given case. If the former is desired the splints should be removed, as in the elbow, for example, as soon as the incisions are healed, and the gentlest of passive motions begun at four or five weeks after operation. In the hip a Taylor splint should be worn at least a year, and many other details of after-treatment are given. And, finally, in unsuccessful cases, amputation should not be delayed until it is too late.

ARTHRECTOMY.

Tilling⁶ has attempted to resect the joints saving the joint ligaments as far as possible, chiselling out the muscular insertions and the ligaments, and after resection of the bone securing by nails the separated ligaments again on to the bone.

The reporter has operated five times on the knee. A cross-incision is made down to the ligament of the patella, and this is freed not by cutting but by chiselling off the tuberosity of the tibia. The same thing is done with the epicondylis. The crucial ligaments are then divided, and the diseased portion of the bone removed. The separated fragments of bone, with the adherent ligament are then secured to the sound bone by means of ivory pegs.

In the hip-joint the trochanter major and the adherent tendons are chiselled off and again nailed to the shortened shaft.

In resecting the ankle-joint the malleoli are removed by chiselling from above downward, and the ligaments and tendons spared, the incision through the skin being a curved incision with the convexity upward, arching obliquely over the tips of the malleoli. The shoulder and elbow joint are resected in the same way.

⁶ Centralblatt f. Chirurgie, Jan. 28, 1888.

RESECTION OF THE WRIST.

Gangolphe⁶ reports an autopsy on a case dying of tubercular meningitis three years after excision of the wrist. A perfect recovery had taken place at the wrist. The space between the metacarpus and upper arm was composed of fibrous tissue, with a few bony substances scattered through the tissue. The joint was during life quite useful. The results are, according to Gangolphe, most satisfactory between the ages of thirteen and eighteen.

LATERAL CURVATURE.

The mechanical theory of the production of scoliosis is vigorously attacked by Mr. Keetley.⁷ First, he compares the section of a vertebra from a lateral curvature, and the epiphysis from a case of knock-knee, and comments on the similar wedge shape of the two. This wedge shape, he says, "has been found in every specimen of scoliosis, mild or severe, in every museum in the world in which it has been looked for;" and he assumes that therefore this shape exists at the very onset of the disease, and is the primary affection. He next attacks and disposes of the three supposed features in the production of the deformities on the mechanical theory: (1) muscular weakness, because muscular weakness by no means always exists with scoliosis, and because of the host of muscularly weak people only a small, a very small proportion have lateral curvature; (2) inequality in the length of the limbs; and (3) the practice of carrying weights on one shoulder or one arm, he disposes of in the same way.

So much for the destructive part of the paper, the constructive part advocates rachitis or an analogous bone disease as the cause of most cases. The deformity occurs almost always during early childhood or "between the age of eight and sixteen. In the former case its rachitic origin is undoubted." (?) In the latter case he is inclined to associate it with faulty hygiene, insufficient nutrition and consequent bone change. "The various influences which may injure the constitution during infancy and youth act at least indirectly as causes of scoliosis by predisposing to or actually producing rachitis, either in infants or adolescents, and possibly in other ways." Finally he asserts that scoliosis occurs in animals, and cites the instance of a scoliotic gold fish alive in the West London Hospital. The article bears evidence of such hasty and loose writing that it loses much of its value.

Mr. Barwell⁸ summarizes in a very interesting way his different methods of treating lateral curvature, whose object, as he expresses it, is to "lead the spine aright, rather than to force it into this or that attitude." For mild cases, due to pelvis abliquity, he corrects the obliquity by inequality in the soles of the shoes when on the feet, by sitting down on a sloping seat only, and by lying for a while in bed each night with a raised sling under the convexity of the curve. In the next grade he uses what he calls the "loin bandage" which is a swathe going around the crest of the ilium on the side that he wishes to depress, which is pulled down by a perineal band in the other groin, which is attached to a band encircling the leg. This is worn during the day and each night the patient lies for a short time on the raised swing mentioned

⁶ Revue de Chirurgie, No. 9. Centralblatt f. Chir., Feb. 4, 1888.

⁷ Annals of Surgery, Feb. 1888, p. 328.

⁸ E. Barwell. Lancet, July 9, 1887, p. 59, and August 13, 1887, p. 301.

above. A girth is also attached to a staple in the wall and applying this girth to the convexity of the curve the patient leans sidewise so as to bring the weight of the body largely on the girth; in addition to this he would apply in severe cases his well-known dorso-lumbar bandage. So much for the treatment of the lateral part of the curvature.

For the rotation, he applies a modification of his dorso-lumbar bandage in severe cases; whereas, in mild cases, he makes use of the arm to antagonize the action of the serratus magnus, by having the patient in cases with slight dorsal curvature, for example, carry the left arm behind the waist and by wearing a lead strip on the left arm weighing some four ounces. He also directs the patient to rest the erector spinal muscles several times each day by lying flat on the belly with a pillow under the chest. With this treatment he would expect to prevent a beginning case, to cure other cases in the first or second stages (unless from severe rachitis or lung consolidation) and even in the early part of the third stage, as he divides the disease.

SCHOOL-DESKS.

Lorenz,⁹ after a careful consideration of the various plans suggested for school-desks, and the various seats in use, concludes as follows: "To avoid the dangers of scoliotic attitude resulting from fatigue and the scoliotic position assumed in writing, a back support to the chair inclined 10° to 15° backward, with support for the back, is of importance."

This conclusion practically coincides with that of Kocher,¹⁰ who advises proper school-seats as of the greatest importance in the treatment of lateral curvature. Kocher recommended the seat advised by Schenk,¹¹ which is designed to support the back, even while the child is writing. The back of the seat is inclined backwards at an angle of 15°. The desk should be 12 cm. higher than the seat, and the latter should not be separated more than 18 cm. also from the desk.¹²

SPINAL SUPPORTS.¹³

Beely recommends as a substitute for the plaster jacket cloth corsets modelled on plaster casts, and strengthened by steel strips carefully made and modelled.

Staffel¹⁴ recommends, to prevent stooping in writing, a strap at the level of the forehead, connected with two uprights fastened to the desk; the back is supported by a pressed plate in the lumbar region.

BOW-LEGS AND KNOCK-KNEE.

Stillman¹⁵ describes a new brace for bow-legs, dependent for its efficacy upon a couple of metallic springs pressing upon the convexity of the curve; in other respects, it is very much like the ordinary braces. In one respect it has a desirable addition in ratchets below the ankle-joint, so that the foot may be inverted or everted in its relation to the leg if desired. Figures of the brace are given in the article.

A. S. Roberts,¹⁶ in two clinical lectures recently delivered, classifies bow-legs and knock-knee as due to

one of three causes: (1) Rachitis; (2) ligamentous relaxation; and (3) central disturbances, as poliomyelitis, etc. As to the bone changes resulting from rachitis, he divides them into three stages: (a) stage of vascularity, (b) of softening, (c) of sclerosis. In the last of these stages he considers mechanical treatment as useless, and resorts at once to operative treatment, and he prefers osteotomy to osteoclasis. He ascertains where sclerosis is present by the use of a bone drill. Where it encounters no obstacle in entering the bone he uses mechanical treatment; but where, on reaching the bone, it meets with sudden resistance, as if being bored into ivory, he resorts to operation.

The brace which he uses in private and hospital practice for bow-legs "consists of a piece of straight-tempered steel, its upper extremity terminating in a semi-circular steel band to extend half around the leg; below, and jointed to it opposite the ankle, is a steel foot-piece with heel-cup, which is secured to the foot by a strap passing over the instep, and a light leather shoe laced over the foot. . . . The brace is adjusted by securing it to the internal aspect of the limb, and the elastic element of the brace brought into play by strapping the steel upright to the leg at the point of the greatest convexity. It should be thus applied at night." For knock-knee, he uses a similar brace applied to the outside of the limb. The details of the operation of osteotomy are given very clearly.

Brown¹⁷ summarizes his experience in much the same way, but in favor of osteoclasis, of which he gives a very full history, and enters into the details of the operation, giving both the manual and instrumental methods. In rachitic deformities he would only do an operation after the bones had become eburnated, and the principles of treatment which he advocates are as follows: (1) In children under two years of age, in which the deformity is not exaggerated, the expectant plan, possibly with frequent daily attempts at correction with the hands. (2) In older children, in which the bones are yet soft, some form of mechanical support. (3) As soon as the bones become eburnated, osteoclasis or osteotomy. (4) Osteoclasis is to be preferred in all cases of deformity near the middle or long bones, in a large proportion of cases of knock-knee and other deformities near the joints, and only rarely in bony ankylosis and club-foot.

OSTEOTOMY.

Motta¹⁸ reports a summary of the work of the late distinguished Italian surgeon, Margary, who performed osteotomy a large number of times, 361, preferring MacEwen's operation to *brisement forcé* or osteoclasis. He has performed as many as six osteotomies on one individual at one sitting. The results were eminently satisfactory in all cases. In six cases of ankylosis of the knee-joint in an abnormal position, preferring osteotomy, either simple or wedge-shaped, to resection. If, however, there is slight mobility at the knee, he prefers resection, in order to prevent relapse.

OSTEOCLASIS.

Buttersack¹⁹ has made some experiments on the cadaver with Robin and Collins's appliance, modified by Beely, his results corresponding with those of Pousson and Demons.

⁹ Centralblatt f. Chirurgie, March 21, 1888.

¹⁰ Centralblatt f. Chirurgie, October 29, 1887.

¹¹ Centralblatt f. Chirurgie, February 1, 1888, p. 19.

¹² Prus. Wehner Med. Presse, No. 41, 1887, p. 1403.

¹³ Centralblatt f. Orthopädische Chirurgie, January 1, 1888.

¹⁴ Centralblatt f. Orthopädische Chirurgie, January 1, 1888, p. 9.

¹⁵ Jour. Am. Med. Assn., February 23, 1888, 248.

¹⁶ A. Sydney Roberts. Phil. Med. News, February 4 and 18, 1888.

¹⁷ Dillon Brown. N. Y. Med. Rec., December 3, 1887, 704.

¹⁸ Centralblatt für Chirurgie, October 22, 1887.

¹⁹ Centralblatt f. Chirurgie, December 3, 1887.

The advantage of this apparatus is that the fracture takes place at the desired point of the bone, even if it is near the joint, and without injury to the joint ligaments or injury to the soft parts.²⁰ The writer prefers this method to osteotomy. The objection to the procedure is the complicated nature of the appliance.

Ferrari²¹ describes Collin's apparatus, and recommends its use in knock-knee. Collin's own appliance is even more complicated than that modified by Beely. Ferrari uses, also, a simpler one devised by himself, resembling a Rizzoli's osteoclast, with the addition of pressure-plates, and instead of the rings used in the latter, he uses one ring for counter-pressure, and two pressure-screws with broad plates for direct pressure.

FLAT-FOOT.

Roth,²² speaking of the causes and treatment of flat-foot first calls attention to the fact that in every three cases of lateral curvature of the spine two suffer from flat-foot, and that it very often is associated with knock-knee is well-known. The treatment should be the restoration and maintenance of the depressed plantar arch and the strengthening of the leg muscles which tend to produce and preserve the normal arch of the foot; these are of two kinds, mechanical and therapeutic. The simplest mechanical treatment advocated, is a broad laced boot with low heel, and a support in some cases to the arch by a pad of superimposed layers of felt. Also the sole is thickened on the inner margin of the heel and sole. The severest treatment advocated is "*brûlement forcé*" by Mr. Thomas's wrench, under anesthesia.

The most interesting part of the article lies in the medical gymnastics described in detail by M. Roth, which unfortunately cannot be given in detail here. They are simple exercises directed to the strengthening of the faulty muscles, and in one or two weeks he begins to notice the benefit from treatment.

(To be continued.)

Clinical Memorandum.

CHRONIC INFLAMMATION OF THE SPERMATIC CORD. SURGICAL INTERFERENCE.

BY HORATIO H. JOHNSON, M.D., BELFAST, ME.

Mr. P., aged seventy-five years, a stout, hardy farmer, seven years since noticed a swelling in the groin, which he supposed to be a "rupture," and without any surgical advice applied a home-made truss which at times made him so sore, and gave him so much pain that he would be obliged to discontinue its use. On November 4, 188-, he was in such condition that he sent for medical advice, and the physician recognizing the necessity of surgical interference, on the following morning I received a telegram to see the patient in consultation. I found a hard, unresisting swelling, extending from midway between the superior spinous process of the ilium and the symphysis pubis, down to the testicle, which was considerably drawn up in the scrotum. The bowels had moved regularly each day, unaided by laxatives, which led me to judge it was not a hernia, though previous to my visit the

patient had been etherized and taxis had been thoroughly tried. The case was diagnosed as chronic inflammation of the spermatic cord, and it was deemed prudent to resort to surgical means for the patient's relief. Assisted by Dr. George C. Horn (the anesthetics being under the charge of Dr. P. P. Nichols, dentist). I removed five and one-half inches of the spermatic cord, with testicle attached, ligating above all signs of disease. The cord measured seven inches in circumference, and was well advanced toward suppuration. The patient was confined to his bed about five weeks, with very little rise in temperature or acceleration of the pulse, and the wound healed mostly by first intention. The ligation on the pedicle remained twenty-five days. The patient is now about, and has made a complete recovery from the operation. I considered the diseased mass the result of continual irritation from the wooden pad worn for supposed rupture.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M.D., SECRETARY.

REGULAR meeting, Monday, April 23d, at Medical Library, 19 Boylston Place.

In the absence of the President, Dr. S. W. Langmaid was made temporary chairman.

Dr. R. H. Fitz read a paper on

THE ORIGIN OF TYPHOID FEVER IN HOSPITALS, AND THE MEANS SUGGESTED FOR ITS PREVENTION.¹

Dr. Folsom: I regret to say anything to the Society before having reached more definite conclusions than I have in my own mind. I made an investigation at the City Hospital with regard to the number of cases of typhoid fever which have occurred there from the beginning of 1884, until the present time, the method which I took being as follows: I examined the records of those years, some fifty volumes in all, looking over the report of every case of typhoid fever and consulting the indices which are kept in this way. Under the head of diagnosis is the name of the primary disease for which the patient came to the hospital, and in a second column the name of any other disease occurring during the patient's stay at the hospital. During that time I found that there were twenty-eight cases of typhoid fever which occurred among the house officers and employees of the hospital, and one case, which is of very doubtful origin, in a patient. I looked over the records carefully in reference to that point, and have inquired of the house officers and physicians and Dr. Rowe. I cannot ascertain that there has been a single case of a patient contracting, or probably contracting, typhoid fever in the hospital during that time; and it should be recollected that there are seasons of the year when the number of patients with typhoid fever make about one-third of the total number of patients in the medical wards. At one period in 1886, during the latter part of my service, the large female ward with twenty-eight beds contained eleven patients with typhoid fever. Dr. Rowe reminds me that during that season there were

²⁰ Centralblatt f. Orthopädische Chir., January 1, 1888, with illustration.

²¹ Centralblatt f. Orthopädische Chirurgie, January 1, 1888.

²² N. Y. Med. Record, March 17, 1888, p. 269.

¹ See page 513 of the Journal.

five continuous weeks during which the number of patients with typhoid fever was never less than sixty-five.

I will not read the records of these twenty-eight cases; I will only say that I have been over them myself very carefully, and that I am satisfied that there is no doubt of the diagnosis of typhoid fever. During the year 1887, two nurses employed in the wards of the hospital, the medical wards, had typhoid fever, also one boy who washed windows, and two medical house officers. In 1886, there were five nurses, three ward-maids, one ward-master, one woman employed in the kitchen who did not come in contact with the typhoid fever patients, one of the house officers who had been on a vacation to Cape Cod, and who himself attributes the origin of the disease to his vacation, and one of the landresses; twelve in all. In 1885, three nurses, one ward-master, and one ward-maid. In 1884, four nurses, one landress, one window-boy, and one patient, whose history was as follows: He came into the Hospital with subacute rheumatism. After he had been in the ward two weeks his temperature began to rise, and five days after that, that is, on the nineteenth day after he came in, he had the high temperature of well-defined typhoid, 104° in the evening. That is to say, in this period of four years, there were two window-boys, two ward-masters, two landresses, two house officers, four ward-maids, one kitchen maid, and fourteen nurses, besides the patient with regard to whom the origin of the disease was quite doubtful, and the doctor who thought that he took his disease outside.

Going back as many years as I can recollect, and as far as those gentlemen could whom I have asked, I cannot find that any of us can recall a single patient in the medical wards who even probably contracted typhoid fever while in the wards. There were two surgical patients, one of whom contracted typhoid fever two weeks after he entered the hospital—a little less than two weeks—which was at least a doubtful case, especially as he did not come in daily contact with any of the nurses who were taking care of typhoid patients. Dr. Rowe recalls a surgical patient in '81 or '82 who contracted typhoid fever a number of weeks after he came into the hospital, but he was in a surgical ward, and was not brought in contact with typhoid patients, or nurses taking care of typhoid patients.

It certainly is very extraordinary that during this period of time, especially when there were eleven out of twenty-eight in one ward, and sixty-five patients for five weeks continuously, and when, for a very considerable portion of the time, nearly one-third of the medical patients were typhoid, it is certainly very extraordinary that we have not been able to find any reports of any patients acquiring the disease, although at that time there were always debilitated patients whom one would think as liable to contract the disease as nurses, if they were exposed.

I have looked over the records carefully, and unfortunately none of them state clearly enough what the patient was doing for the previous three weeks to enable one to make even a guess as to the probable place where the disease originated. That does not occur in a single case. A certain number of records of cases speak of the nurse as being very hard at work, as doing night work, etc., but nothing is said to indicate whether or not there was any possibility or prob-

ability of the fever being contracted elsewhere. In looking over the records of one of the nurses, as it occurred to me that the case might have originated in the hospital, I turned over to the record of a preceding page, which was of a nurse in the infant asylum in Brookline, in regard to whom there was just as much evidence that the disease originated in the asylum as the other in the hospital. That is to say, the evidence, so far as the hospital in these years is concerned, seems to me not conclusive, although the fact that so many nurses contracted typhoid fever is certainly suspicious; that is to say, fourteen nurses, or one-half the total number of cases which I have reported.

With regard to the length of time from the introduction into the system, either by the lungs or stomach, of whatever it is that causes the disease, until the actual appearance of symptoms of the disease, of course that time varies very much indeed, and of a very large number of persons exposed to the same conditions, the period of the outbreak of the symptoms varies very much.

The cases, to which Dr. Fitz referred are very interesting from that point of view. I refer to those from the steamship *Prussian*. The facts were examined very carefully by Dr. Russell, the health officer of Glasgow, and he is reported as having satisfied himself that the emigrants were exposed in very large numbers to typhoid fever in an emigrant boarding-house before going on board the vessel. If that is true, and Dr. Russell's reputation is such that we may assume that it is so, and if that were the only source of infection, the period of incubation, if we may call it such in these emigrants, varies from ten days to between four and five weeks; so that, in the analysis of the origin of our cases of typhoid fever at the city hospital, there is a great deal of embarrassment. As every single one of the cases was going out of the hospital frequently, almost daily, and to parts of the city which might have been infected, I think that from these statistics, it is impossible to draw definite conclusions.

In regard to the danger of conveying the disease from the fresh dejections, of course as we all know, there are two very different theories. Pettenkoffer, who for many years was chairman of the National European Cholera Commission, and who certainly has investigated cholera and typhoid fever carefully, is firmly convinced, and his pupils are also firmly convinced that it is impossible to convey the disease by any fresh poison. I have no opinion to offer on that point. I regret that I have not been able to say something more definite, but I have been obliged to adhere to the facts as they have presented themselves.

The President then called for the paper by Dr. Charles Harrington on

PROPER AND IMPROPER METHODS OF DISINFECTION.²

The discussion was then continued.

Dr. G. H. M. Rowe said: It has been a matter of much solicitation to myself, as well as to the Superintendent of Nurses, in regard to the cause of typhoid fever whenever it has occurred to nurses or employees at the Boston City Hospital. Capt. Douglas Galton, a recognized hospital authority, makes this statement: that he does not believe in the contagiousness of typhoid fever in the ordinary sense,

² See page 616 of the Journal.

and that if a case occurs in the nursing force of a hospital it should be laid to the habitation of the nurse, and not to her association with the patient. Previous to September, 1886, the nurses at the City Hospital Training School, who then numbered about sixty-two, were lodged in rooms in various parts of the Hospital buildings. About half were in the third stories of the new medical and surgical buildings, and the remainder in (so-called) nurses' rooms, which adjoined the medical, surgical, and contagious wards. In the last week of September, 1886, the Nurses' Home was opened for occupation, with accommodations for sixty-seven nurses. I think it is safe to say that the sanitary conditions of our Home are of the best, and as good as can be found for an equal number of nurses.

The plumbing is of the most approved systems, the heating is by indirect, supplemented by direct radiation and fireplaces; every room in the Home is ventilated, independent of other rooms, and there is a ready exchange of air. The arrangements for personal hygiene of nurses are most excellent. The largest number of cases, as Dr. Folsom has related them, occurred previous to the opening of the Home, and this fact bears upon statements of Capt. Douglas Galton that the habitation may have much to do with the matter of typhoid among nurses.

As to the class of nurses who have had typhoid, I may say that it has occurred more frequently among those who have worked in medical wards, and largely among the night nurses. Gentlemen attendant on hospitals will recall the fact that during the day the nursing is divided among several nurses, say five in a ward of thirty patients. But when the night nurse comes on for eight hours' consecutive work, she has the care of all the patients. Therefore, the risk, whatever it may be, is much greater in her case, other things being equal, than where it is distributed among five day nurses. The fact that the night nurses have suffered in a larger proportion may be attributable to this concentration of contact.

If typhoid fever rises directly from contagion and contact to the germs of that disease, it would seem to raise the query whether or not, in a large hospital averaging for consecutive weeks sixty-five cases or more, certain classes of workers other than nurses should not be affected. During the year, the daily and weekly work of keeping the house clean and in good order is done by a permanent force of scrubbers, ward-maids, window-boys, and the like. But from the first of May to November there is employed a corps of "house-cleaners," as they are called, consisting of eight women and two boys, who do nothing else than "house-clean," as that term is usually used.

I don't recall an instance of any house-cleaner who has been ill with typhoid or any contagious disease. This gang of women have to wash and carbolicize all portions of the establishment: they dust and wash all the ledges, covings, and high portions, which in many places are crowded with dust. It would seem that this class of workers would become affected. I know of only two instances where laundresses have been ill with typhoid fever, although the amount of bed-linen and other clothing that comes from sixty-five typhoids is, of course, very large.

In regard to the precautions and measures used by us: The nurses are instructed to pour carbolic solution, 1-40, into the bed-pan before it is put under the patient. After the dejection, the bed-pan is covered

with a rubber cover in its passage from the bed to the slop-hopper. Carbolic solution, 1-20, is poured into the bed-pan. The slop-hopper is first flushed, and then the bed-pan is emptied and thoroughly washed and carbolicized: it is then placed in a rack against the wall, with the point downward, so as to hold fresh carbolic until again used. The hopper is flushed, and solution chloride of lime poured in. The bed-linen, when removed, is taken immediately to the basement and put into galvanized iron barrels, and carbolic solution added. This barrel is removed to the rinse-house morning and night. The rinse-house is a structure independent of the laundry, and disconnected from any part of the Hospital. There the bed-clothes and infected body-clothing are put into large soapstone receptacles, soaked four hours in solution chloride of lime, one pound to gallon, diluted, of course, by water. Then, after soaking and boiling and thoroughly rinsed, the clothes are removed to the laundry and treated as ordinary clothing.

We do not cover our mattresses in typhoid cases with rubber sacks, but always place rubber sheeting under the bed-sheet. This we have done to save expense. It is questionable if rubber sheeting is not often conducive of bed-sores, and in typhoid patients the greatest care must be taken to prevent bed-sores.

As to the disinfection of wards which are occupied all the year, it is a difficult matter. Where contagious cases are in isolating-rooms, of course it is an easier matter. Before we had our new wards for contagious cases, we have been obliged to treat all contagious diseases in a mixed ward; of course, treating each disease in a separate room. In such wards, fumigation is done at very frequent intervals, consistent transfers being constantly made, in order to make the rooms available for cleansing, and every week two or three rooms are disinfected. We use the process so commonly prevalent, and which, according to Dr. Harrington's views, presented this evening, is a fallacious one, the fumigation by sulphurous acid gas. As in our old wards, where such cases were formerly treated, the rooms were constantly changing in the complexity of cases and character of the occupants. I am not prepared to say that in a room which had been used, say for scarlet fever, subsequently disinfected, and then used for diphtheria, the disease may not have been passed from one patient to another. In the year 1883, when we were crowded beyond safety, and the complications were unusually trying, there were nine patients, all children, admitted for one contagious disease, who in some manner subsequently contracted another, and of these cases three died. It was the publicity of this dreadful state of affairs made to the City Council that woke them, after several years' demanding, to give an appropriation for the two new buildings which are such a relief to us in our work.

DR. DUGGIN said: I have very little to say. I have been very much interested in the papers, particularly the paper read by Dr. Fitz, in which he gives his view of the stage of incubation of typhoid fever. It was somewhat interesting to me when the patients from the steamer *Prussian* landed in Boston, and were seized with typhoid fever. It seems to me that in these cases it is very hard to establish the point of contact with the previous case of typhoid fever. The steamship was about ten days in crossing, and it was about two days after her arrival here, and the landing of the emigrants, before any case of typhoid fever ap-

peared. That would make twelve days at least, and I think that some were seized with the disease about two weeks later, which would make, as Dr. Folsom said, between four and five weeks of incubation, provided the contact was on the other side of the water. The fact was established that none of the emigrants who came from Glasgow were seized with the fever. I think about one hundred of those coming from Londonderry and Galway were seized with the fever.

It is quite possible that some one of the passengers may have had the disease in so light a form on the vessel coming across that it passed unnoticed, and still furnished the point of danger to the other emigrants. It is quite possible, also, that some one who was ill here in Boston, furnished the contagion after leaving the vessel.

I have been interested, also, in the paper on disinfectants. Many so-called disinfectants have been found, upon careful examination to be only antiseptics or deodorants, and their use abandoned as soon here as elsewhere; in fact, the general use of superheated steam and bichloride of mercury, the leading disinfectants of the day, was adopted in Boston sooner than by any other health organization in the country. We have not been slow to consider the value of sulphur dioxide as a disinfectant, and have had the records of scientific experiments and a long experience to aid us. It is not true that all scientific gentlemen have abandoned its use or ceased to recommend it. We do not claim that sulphur dioxide will kill the spore-bearing germ, and do not use it for that purpose; but we claim that the experiments of Koch, Wolffhugel, Vallin, Sterner, and others, show conclusively that this agent, when used properly, destroys the disease germs in the absence of spores, and Sternberg makes the statement that there is good reason to believe that the spore is not formed in cholera, yellow fever, small-pox, diphtheria or scarlet fever.—These experiments with sulphurous acid gas coincide exactly with the large practical experience of sanitary organizations throughout the country. These exact tests have shown that a larger percentage of the gas and a longer exposure than were formerly used are necessary, and have given a scientific backing to one of the most common and practical disinfectants known.

If you have a ship or a dwelling-house to disinfect you need a gaseous agent, and the sulphur dioxide is the most practical. If articles of bedding, clothing or furniture have been badly soiled or deeply penetrated by the infection they should be boiled, burned, or treated with some powerful agent, but much of the material found in the sick chamber has but a superficial infection, and may readily be disinfected with the room itself.

It seems to me that the carting away of bedding, clothing and furniture through the streets to a disinfecting station is clumsy, expensive and dangerous, and not likely to be adopted.

The rubbing of the walls, etc., with bread, on a large scale, is not likely to attract serious attention.

DR. BOWDITCH: As a matter of record, I will mention two cases that have occurred in my term of service during the past two years at the Carney Hospital, in two persons who had been there a number of years before the onset of the disease. One was a case of so-called nervous prostration, and she went through the regular course of the disease, with the characteristic symptoms. This patient was in a room

off the general female ward, where there had been several cases of typhoid fever. The other was a surgical case, also off the general ward, where there were several cases of typhoid fever, or had been several weeks before, and she, after recovering from the surgical trouble, also developed typhoid symptoms. These are the only cases that I know of in my experience in the hospital during the last four or five years. I know of none having occurred in the attendants.

DR. PRINCE: I wish to say two or three words, one in connection with the hospital, and the matter of disinfection. It is a question in which I am very much interested, and I have, for the Board of Health, been making a series of investigations into the origin of typhoid fever in this city. In this way I have been brought in contact with the practical side of the question, and have been occupied in cross-examining patients, and attempting to find out the origin of the disease. Many of these patients whom Dr. Folsom has spoken of I have personally cross-examined myself, and if he has found difficulty from reading the Hospital notes in determining the cause of many of these cases, I can only say that I have found equal difficulty from the direct examination of the patients themselves. I am sorry to say that I have not my notes in a ship-shape form, such a form as would enable me to draw exact conclusions. I am still at work upon them. They allow me to draw certain provisional conclusions, which I will not go into here, because it would take us too far. But I think there can be no doubt that a certain number of cases do arise from the hospital, a certain number from contagion. They occur outside as well as inside. But, as Dr. Folsom said, we should be cautious about attributing them all to the hospital. My experience with the manner in which disinfection is usually carried out has been amusing. In going around from house to house, I have been told often with a great deal of exultation that the people were using all the precautions necessary, and were using disinfectants in the most thorough way. On inquiry I find that it consists, as a rule, in sprinkling carbolic over the floor, and hanging up sheets saturated in the same, or putting chloride of lime in saucers in various parts of the room. I am sorry to say if I am to believe the statements of the people concerned, that the medical profession is at the bottom of it. They say that they do it under the advice of their medical adviser.

In regard to the efficacy of such a process, I confess that I am somewhat surprised at some of the statements of Dr. Harrington. I agree with him that there can be no question that from the time when Koch made his experiments rational disinfection was put on a new basis, but I think we should also be careful in drawing too sweeping conclusions from these experiments. There can be no doubt that Koch's experiments have shown that bacteria containing spores are not destroyed by sulphurous acid gas, as Dr. Durgin said. What they do not show is that bacteria not containing spores are not destroyed. On the contrary they show that the micrococci are completely destroyed by the gas. Koch himself, for example, hung up a thread soaked with anthrax blood, in a box, and after fumigating he found that those bacteria not having spores were thoroughly destroyed. Vallin has found that he has been able to destroy the virus of vaccine. Sternberg has continued the experiments of Koch, finding that bacteria that contain

spores are not destroyed, while those that do not contain spores are destroyed. These results were obtained from experiments performed in the laboratory. It has been shown that it is very difficult in an ordinary room of a house, to maintain the conditions in such a way; that is to say, to maintain a sufficient saturation of the sulphurous acid gas to completely destroy the micrococci without spores. On the other hand Sternberg, in conjunction with the Brooklyn Board of Health, performed a series of experiments, using for the purpose the micrococci from septicaemia and vaccine, to test the value of sulphurous acid gas. Strips of blanket, saturated with septicaemic blood, were placed about the room; one piece was placed on the floor of the closet, another between the mattresses, another was hung to the top of the window, and another to the top of the door. One piece was retained as a control. Sulphur was burned in that room for eleven hours. At the end of that time the pieces were soaked out in bouillon, and the bouillon injected into rabbits. The rabbits injected with the control piece of blanket died of septicaemia. All the others lived except the one piece marked No. 4, which was a piece of blanket folded up and matted together by the blood, so that it is presumed the spores could not be reached. Two virus quills also were taken, split in halves, one-half of each subjected to the gas, and the other half retained. The virus that was not subjected to the gas took, and the other failed to take.

In these experiments there are, of course, certain fallacies. It would have been better, if, instead of using rabbits, they had used cultures, but still they are of considerable value, and form a problematical proof, to say the least, that it is possible to destroy the micrococci without spores by sulphurous acid gas; and the logical deduction from the experimental evidence should be, that in practice we should endeavor to so arrange the room to be disinfected that the conditions shall be identical with those of the laboratory experiments.

The question then arises whether the bacteria of scarlet fever, diphtheria, and other allied diseases are with or without spores. Of course, we don't know that there are any yet, for they have not been isolated, and it is, therefore, a question of doubt. Bacteriologists tell us that it is probable, by analogy, that these bacteria do not have spores. They are responsible for that statement. And, if this is the case, it seems to me that it is rash to abandon fumigation by sulphurous acid gas in the present state of our knowledge. I don't wish to be understood as arguing against the process of disinfection suggested by Dr. Harrington. This is a practical question. It is stated by sanitarians, and I think we have the figures to prove it, that secondary cases occurring after fumigation are very rare. I think that after small-pox in this city it is very rare.

Dr. McCOLLUM: I have never heard of a case in the past eight years.

Dr. PRINCE: If this is the fact, and if fumigation by sulphur is useless, then it seems to me the logical argument would be that the danger from the infection of an apartment is very slight, and nothing in the way of disinfection is necessary at all.

Dr. McCOLLUM: I have nothing to say, Mr. Chairman; I think the ground has been very fully covered. I can only say that it is a rather remarkable fact that during the past ten years, at the Suffolk County Jail,

where we have three or four thousand patients in the course of the year, we have never had a case of typhoid fever originating in the jail. We have had, I think, cases which have been removed after a longer or shorter time, but it is rather a remarkable fact, where the inmates are placed in very close proximity, that a case has not originated. I think that is due to the manner in which the night-soil is disposed of. Every man has a bucket, that is washed every morning with chloride of lime. There are no drains.

In regard to the subject of fumigation, I would say, five or six years ago, we, unfortunately, had two cases of small-pox in the jail. Of course, as soon as the disease was recognized, the patients were removed and the cell was fumigated, as well as the blankets and everything that was used by the patients. No case arose from that, and, as I just told Dr. Prince, for the past five or six years there has never been a secondary case in the city unless it was contracted before the removal of the patient. Of course, it is impossible to say that this is due to the use of the sulphur, but I think it is very suggestive, to say the least. In scarlet fever, it is comparatively rarely that the place is fumigated a second time. It is not an uncommon thing for a child to be taken sick with scarlet fever, and then for another child to come down afterward, because the child contracted the disease before the removal. But after the house has been fumigated, it is very rare to have any patient come down after three or four weeks. Of course, that does not absolutely prove anything, but I think it does have an important bearing upon the question. Sulphur is comparatively an easy thing to use, and if it is entirely useless we want to know it. It seems to me that it does a certain amount of good. Of course, it is not perfect; there is nothing perfect. At the same time, it seems to me, in following up the course of scarlet fever for the last five or six years, you must be struck with the fact that the cases don't occur in the same houses. They are not contracted from the walls that have been fumigated or disinfected.

Dr. FOLSOM: Several years ago, there was quite an epidemic of diphtheria in the lower ward of the Danvers Insane Asylum; that is to say, the ward in which the paralytic and demented patients were, and where there was a great deal of involuntary defecation of urine and feces, where it was impossible to keep the air entirely sweet. It could not be done. The case was clearly brought in from the outside, but it spread, and there was quite an epidemic. The first thing that was done was to use sulphur very thoroughly, and it was used with such careful medical supervision that I am convinced that it could not have been done more efficaciously. The patients were allowed to go back again, and there was another case. Then chlorine was tried just as efficiently as the sulphurous acid gas. The patients went back, and diphtheria again prevailed. Then the whole ward was cleared out and thoroughly disinfected in the way that Dr. Harrington has suggested, and there has never been any diphtheria there since. My impression is that that represents the theoretical and practical view of the question at the present time, but when we go so far as to throw aside the experiments which were made by Pettenkofer and his associates, and say that fumigation with sulphur does no good at all, it seems to me that we are going entirely too far. I don't see how any one can follow the results of the use of sulphur in any large city for a series of years and say that it

does not do some good. That the sulphur fumigation is not altogether and always efficient, I am convinced; and I think that practical and theoretical tests prove that beyond question. But here is a city with a dense population, and you must do something. It is not always possible to keep people out of their rooms, and in order to carry out the methods suggested by Dr. Harrington, you must often get the family out altogether. My own opinion is that the city of Boston ought to furnish efficient disinfection, and that families ought in some cases to be taken out of their houses, at least in diphtheria and scarlet fever. Public disinfection has been done in England for fifteen years, a fact to which I called attention in one of the State Board of Health reports nearly or quite ten years ago, giving also a full description, with plates and plans, of the public disinfection building in Liverpool, and of the public laundries in that city. In Glasgow, for the last four or five years, they have been taking families out from their houses, having houses for temporary residence for that purpose. The home is then gone through with by the method suggested by Dr. Harrington, and the family returns to it. It seems to me that there is no doubt but that is the only efficient way; the only question is whether the city or State is justified in undergoing such an expense, and whether the return is sufficient. It seems to me that the statistics of Glasgow show that it has been a profitable thing for the city to do.

DR. FITZ: I am very much obliged to Dr. Folsom and Dr. Rowe for the evidence they have brought forward in connection with the cases that I have presented. The degree of probability of transmission is relative. It presents itself more or less strongly in different cases. With a considerable degree of relative probability, it is, of course, important to take measures which shall tend to diminish the number of probable cases, and if cases occur, to make them rather possible than probable. The precautions which Dr. Rowe has shown to have been taken at the City Hospital are very much like those that have been taken at the Massachusetts General Hospital, and yet, the latter were apparently inefficient. How far the new directions are likely to be useful in the future, will have to be decided in the future, provided they are adhered to. Certainly, the precautions which are suggested in the paper I have presented are more specific than those which have hitherto been followed.

In regard to the question which has raised so much interest, of sulphur-fumigation in general, the evidence which I have followed has left me in a frame of mind which is very distinctly in favor of recommending the disuse of sulphur as a disinfectant. It is not so much that certain organisms are destroyed, as it is that certain other organisms are not destroyed by sulphur-fumigations; and since we have to deal with an unknown series of poisons, it is rather preferable to give up an agent which we know will not destroy certain organisms than to adhere to it and run the risk, perhaps, of neglecting means which may prove more efficient.

DR. CHARLES HARRINGTON: As to the value of sulphur fumigations, it is true, as Dr. Durgin has said and Dr. Prince, too, that the authorities whose work I have cited, showed that under some circumstances sulphur fumes do kill micro-organisms without spores. I did not consider it necessary in a paper such as mine to go into the particulars of the experiments of the

authorities cited. I have thought it quite sufficient to quote their conclusions. They all showed that micro-organisms without spores may, under most favorable conditions not likely to be obtained in actual practice, be killed by sulphur, but they also showed that under no conditions are spores affected. For this reason sulphur fumigations have been condemned as thoroughly unreliable, and my authorities unqualifiedly recommend the abandonment of the process. It is true, as Dr. Durgin has said, that Vallin, in his work on disinfection published in 1882, speaks a good word for sulphur fumigations, but it is equally true that in a more recent publication he endorses Koch's work and recommends steam. And it is true that Sternberg, as Drs. Durgin and Prince have said, proved the effectiveness of sulphur fumigations against certain micro-organisms, but it is equally true that in his Lomb prize essay he virtually concedes that sulphur fumigations are not reliable, though on a later page he says that many physicians think it advisable to use sulphur before proceeding to any other method. The fact that Sternberg has stated that there is good reason to suppose that certain germs do not form spores is not a sound argument in favor of sulphur fumigations. It is acknowledged by all that we know nothing about most of the germs mentioned, and it is, therefore, unsafe to recommend for their destruction a process which is admitted to have no effect on spores, on the mere supposition that they do not form them. Sternberg, himself, says that these germs have not been demonstrated, and also says that in practical disinfection in those cases in which the exact nature of the germ is not known, it is always best to employ a process which will kill spores. This, it seems to me, is equivalent to saying that sulphur fumigations are not to be relied upon in these diseases. If the Boston Board of Health do not, as Dr. Durgin says, claim that the sulphur process will kill the spore-bearing germ, and do not use it for that purpose, why use it at all in those diseases in which the formation of spores is doubtful or unknown, and in these diseases why not use a process which is known to be effective? I am obliged to disagree with Dr. Durgin as to the best means of disinfecting ships, for the results of the researches of Koch and Gaffky on this very subject are very conclusive — so conclusive that their recommendations have been adopted by the German naval authorities. The carting of infected material, which Dr. Durgin considers clumsy and dangerous, has been for some years carried on in many European cities, and, so far as I am aware, has been most satisfactory in its results. In Glasgow, the process of carting infected material to a public wash-house has been in vogue probably longer than elsewhere, in fact more than ten years, and during that time not a single case of interchanged disease has occurred. As to the objections urged by Dr. Durgin against rubbing walls with bread, it may be said that the same objections hold against sulphur fumes, for it has been abundantly proven that the gas does not enter cracks in all instances, for it does not diffuse itself well. It seems to me that the process of rubbing walls with bread has already been shown to be valuable. I cannot agree with Dr. Durgin that it is not likely to attract serious attention, for it has already attracted the serious attention of the German government and of many sanitarians.

Dr. Prince has remarked that sanitarians say that

secondary cases are very rare after fumigations. That may be, but at the same time there are enough cases published to show that they do occur frequently. I have recently read an account of a series of outbreaks of diphtheria in a military hospital in St. Petersburg. The ward was frequently fumigated and left vacant for weeks, and diphtheria would again break out as often as it was occupied. Finally, when both sulphur and chlorine fumigations were abandoned, and the process of disinfection by washing with carbolic or corrosive sublimate solution adopted, the diphtheria outbreaks ceased. Dr. Folsom has this evening related a similar experience.

Of course it cannot be said that sulphurous acid gas is *absolutely* valueless as a disinfectant, but in view of the fact that all leading scientists say that it is *practically* valueless and *thoroughly* unreliable, I think it is better to abandon it altogether, and adopt a process which we know to be reliable.

(To be continued.)

AMERICAN MEDICAL ASSOCIATION.¹

CINCINNATI, OHIO.

SECTION OF PRACTICAL MEDICINE, MATERIA MEDICA, AND PHYSIOLOGY.

FIRST DAY — TUESDAY, MAY 8TH.

Dr. N. S. Davis, of Chicago, opened the meeting of the above Section by announcing the death of Dr. A. P. Palmer, of Ann Arbor, the Chairman-elect, and the unavoidable absence of the Secretary, Dr. N. S. Davis, Jr., of Chicago.

Election of officers was stated to be in order, and was held with the following result: Chairman, Dr. W. C. Van Bibber, of Baltimore; Secretary, Dr. G. A. Fackler, of Cincinnati.

The first subject for discussion was

PNEUMONIA: ETIOLOGY, PATHOLOGY, AND TREATMENT.

Dr. VAN BIBBER, of Baltimore, opened the discussion with a consideration of the mechanism of pneumonia and its treatment. Dr. Van Bibber's paper had two objects: first, an inquiry into the initial causes of pneumonia; and, second, the treatment of the disease. He said a few words in regard to the anatomical arrangements of the parts. By the term mechanism of pneumonia, the author attempted to show, in a general way, how different changes in the structure of the lungs are brought about, which are recognized during life, are seen after death by the microscope, and demonstrated by the scalpel.

He recognized among the predisposing causes of pneumonia four, which are quite different from each other, and each one of which must produce the same effect — congestion in the capillaries — by a different mode of action. They are age, cold, malaria, and alcohol.

He arrives at the following conclusion: The predisposing causes, as the name implies, do not produce pneumonia *de ipso facto*, but they have already worked such structural changes in the body, that upon further disturbance of the system a congestion

of the numerous pulmonary capillaries is more likely to occur than any other diseased condition.

A study of the structural changes brought about by the predisposing causes give advantages in advisory prophylaxis, as well as in treatment. The author introduced the discussion of the treatment of pneumonia with the statement from Fothergill that: "Every new remedy, almost, is tried in turn for pneumonia. It is a disease particularly suitable to speculative medicine." He had determined to present the subject by means of four hypothetical cases: One a child of eighteen months; one a youth of twenty-five years; one case sixty years of age, complicated with malaria; and one case seventy years old, complicated with old age, malaria, and alcohol. In the discussion of these cases, much stress is laid on cupping over the roots of the lungs, between the shoulders, or more particularly still, between the third and eighth dorsal vertebra, in order that by the laws of counter-irritation over affected parts, the circulation through the roots of the lungs may be kept entirely free and open. It is also a means of controlling, or, at least, of moderating the effects of high arterial action during fever. It is valuable from the relief of pain and oppression it affords.

The medicines recommended are only five in number: Muriate and carbonate of ammonium, the former acting upon the circulation in the capillaries, assisting to unload them when they become engorged, as a solvent, a general expectorant, and a diaphoretic; the latter as a stimulant, a solvent, as a remedy which prevents the coagulating or engorging of blood in the capillaries. It may also be used as a vehicle in inhalations. Antipyrine and antifebrin serve to control the fever, diminishing the heat of the blood. Digitalis, veratrum viride, strychnia, strophanthus, and other remedies are valuable remedies in the hands of those accustomed to their use. In regard to the mechanism of heart-failure, Dr. Van Bibber remarked: First, there is diminished lung area, hence diminished supply of arterial blood; second, exudation and engorgement in the lung; third, the amount of blood which arrives in the heart to be forced through the obstruction. This brings a heavy weight upon the left ventricle. If this is continued, the heart must fail.

DISCUSSION.

Dr. WHITTAKER remarked that he did not exaggerate if he stated that the last two years had been more eventful in the study of pneumonia than any period in the two thousand years preceding them, for they removed it from the general to the acute infectious diseases. All the errors that cling to the disease have fallen. It does not attack the vigorous and strong, but shows a predilection for the feeble. Cold is no longer considered a cause of pneumonia. Juergensen was the first to show where the disease belongs, even without a definite knowledge of the cause. The speaker then recited the discovery of various microorganisms of pneumonia, selecting, finally, those of Friedländer and Fraenkel as the probable causative agents. We know that it may also be produced by other microorganisms, as by the typhoid bacillus or the staphylococcus of pus. There is, hence, no poverty of material. May there not, then, be many forms of pneumonia? One has been isolated and called croupous pneumonia; but may not this be divisible into a number of kinds? Thus far it has been divided into primary and secondary pneumonia,

¹ Continued from page 506.

the latter due to the invasion of the respective bacilli. Investigation has shown that in seventy to ninety per cent. of cases of true croupous pneumonia the bacterium of Fraenkel, the diplococcus, is found. The physician is thus enabled to diagnose pneumonia by means of the bacterium twenty-four hours before the manifestations of physical signs. The speaker described the process of staining. In this study we get some nice points as to treatment. The bacteria are sensitive to heat.

170°	attenuates the bacteria of Fraenkel in 24 to 48 hours.
105°	" " " " " 5 days.
104°	" " " " " 7 to 8 days.

This corresponds pretty well with the clinical history of a case of pneumonia. The fever may be the very agent destroying the disease. It has been observed that those were the most favorable cases in which the temperature was most pronounced. Danger is not from the fever, but from the heart, and the question is, whether it is not the best plan of treatment to sustain the heart. Let the fever alone. Be content with small doses of antipyrine and antifebrin to do away with any evil effects of high temperature. For the heart, nothing is better than digitalis. If stimulation be necessary, nothing is better than nitroglycerine and black coffee and alcohol. Under such *régime*, the speaker had found during twenty years' practice the mortality of pneumonia reduced from twenty to ten per cent.

DR. N. S. DAVIS thought it a curious fact that the mortality in pneumonia of to-day is undoubtedly greater than that of forty-five years ago. If anything is established, this very fact has been by statistics gathered not in the hospitals only but among the city and country population of the United States, in private and in general practice. As to the question of cold, it has been indubitably demonstrated that the disease prevails more during the winter than during the summer months. He referred to the statements made by a prominent Canadian physician, in one of the early meetings of the Association of the Dominion, to the effect that during a practice of thirty years, he had adopted three plans of treatment. During the first of the three decades the treatment consisted of bloodletting. The second decade constituted the transition period from the bloodletting antiphlogistic treatment to the expectant plan. The third decade the stimulant method. He found in footing up his records, that the mortality was least during the first decade, and greatest during the last. The speaker dwelt at some length upon the benefits derived from bloodletting during the first stage, followed by cardiac depressants during subsequent twenty-four to thirty-six hours. He cited cases in illustration.

DR. VOX KLEIN, of Dayton, O.: During service in the Russian army had found that pneumonia prevails to a less extent in a climate in which the temperature averaged 50° below zero, than in our moderate climate. He believed in the judicious use of the lancet. He ascribed the increasing mortality to the fact that the people are not as robust as those of fifty years ago. They have changed as to their surroundings, habits, clothing, etc., and our treatment ought to be guided by the peculiarities of each case.

DR. OCTERLONY, of Louisville, took issue with Dr. Davis in regard to increased mortality. During the time of bloodletting, the mortality was one in five. During the time of mixed treatment, according to the

statements of Skoda and Austin Flint, the results improved fifty per cent. J. H. Bennett, of Edinburgh, introduced the method of furthering the natural progress of the disease with the result that the mortality was reduced to one in thirty-six. The speaker had on former occasions defended the theory that pneumonia depended upon local causes, that the changes were local and that they were amenable to local treatment. But impelled by more extended observations, he had become a convert to the theory of pneumonia being an essential specific fever due to a specific cause, probably the pneumococcus. He thought that a physician was rarely called to a patient during the first stage, but generally when the exudation had already commenced.

DR. JENKINS, of Iowa, attributed the apparent increase in mortality to the improved facilities in diagnosis and the advances in our knowledge in pathology.

DR. BAILY, of Louisville, advocated decidedly the use of stimulants, especially during the last stage.

DR. F. C. SHATTUCK, of Boston, protested against the use of internal antipyretics as advocated by the reader. We have all of late years attached too much importance to the effects of temperature in febrile affections. The pyretic stage of pneumonia is usually short and the danger of serious or fatal collapse following crisis heightened by the class of drugs of which antifebrin may be taken as the representative.

DR. VAN BIBBER, in conclusion, stated that he had received a letter from Dr. W. H. Welch, in which the statement was made that "it is apparent that the evidence is not conclusive that either of the organisms named is the infectious agent of croupous pneumonia, certainly no such evidence has been presented as that which leads us to accept the tubercle bacillus, the typhoid bacillus, or the cholera spirillum as the cause of their respective diseases."

DR. FRANK WOODBURY, of Philadelphia, spoke of the

HIPPOCRATIC OPERATION FOR EMPYEMA,

and reported a case in illustration of his subject.

DR. MORRIS H. HENRY, of New York, in a paper entitled

MY OWN CLINICAL EXPERIENCE IN THE ADMINISTRATION OF THE IODIDE OF POTASSIUM IN THE TREATMENT OF SYPHILIS,

prefaces his remarks with a few words on the value of mercury in the early, and what is termed the middle, period of the evolution of the disease. In the discussion of the subject proper, the essayist stated that the dose of the iodide may vary from five to fifty grains every four hours: from thirty to three hundred grains in every twenty-four hours. He spoke of the value of the remedy in syphilitic rheumatism. The remainder of the paper dwelt upon the claims of various authors to the priority of the adoption of the treatment of late and inveterate lesions of syphilis by the administration of large doses of iodide of potassium.

SURGICAL SECTION.

FIRST DAY, TUESDAY, MAY 8TH.

DONALD McLEAN, M.D., Detroit, Chairman; B. A. WATSON, M.D., Jersey City, N. J., Secretary.

Address by the Chairman:

SOME THOUGHTS ON RETROSPECTIVE AND PROSPECTIVE SURGERY.

In alluding to the great improvements that have

been made in the operation of ovariectomy, the Chairman observed that Lawson Tait, as well as other eminent surgeons, has discontinued the use of the so-called antiseptics, and has denounced them as delusions and snares. Too much importance is attached to certain fashionable antiseptics, and too little to the far more reliable antiseptic measures of general cleanliness and healthy surroundings. At a matter of abstract and scientific truth, the doctrines of Lister have done much to advance the science of medicine; and whatever may be the fate of the germ theory, anything like a return to the old, loose methods of surgery will be impossible.

He believes that chloroform properly and judiciously used is the safest and most efficient general anæsthetic we possess; and a successful experience of thirty years of its use, in which time no accident has occurred in his hands, has confirmed him in this belief.

In reference to the progress made in surgery by aid of the microscope, he does not think that the results have been as great as was expected by its advocates, and, as a means of diagnosis, it surely has not superseded the old precepts which are the results of many years of clinical experience.

The field for the application of electricity in surgery is as yet quite limited. That by electrolysis, certain cases of stricture of the urethra may be alleviated, and even cured, there can be no reasonable doubt; but that this means of operation would ever produce as satisfactory and complete results as are obtained by urethrotomy, either external or internal, he could not believe. The application of electrolysis in fibroid tumors of the uterus, according to the method of Keith, has undoubtedly proven of benefit. The value of electrolysis in the treatment of nevus is a triumph of surgery belonging to America.

The introduction of the Esmarch bandage and catgut ligature, and the abandonment of styptic remedies, except in certain well-defined cases, mark an era in our surgical history. He found that an animal ligature was thoroughly efficient in a case of ligation of the femoral just below Poupart's ligament, and also in a case where the popliteal artery was tied; and in most cases it will be found to be all that is required of it.

The treatment of diseased joints has made very satisfactory progress. Resection, especially of the hip and knee, has a very much larger field of use than has formerly been conceded. To remove all the diseased tissue in a case of tubercular disease of the knee-joint is almost an imperative practice.

In the treatment of fractures, the improved and simplified methods for procuring extension, especially in fractures of the femur, have gained almost unanimous indorsement. He believes that the use of plaster-of-Paris in these cases is limited.

The use of splints in the treatment of Colles's fracture is not necessary, and by leaving them off we can better attend to passive motion, which is so essential in all fractures near joints to prevent ankylosis.

As to stone in the bladder, there are substantial advantages in the classical operation of lithotomy that will always make it superior in many cases to those of lithotripsy or litholopaxy. After lithotomy, proper drainage, which is so essential in many of these cases, can be secured; and this reason makes the lateral operation superior to the supra-pubic, except in special cases.

THE APPENDIX VERMIFORMIS: ITS FUNCTIONS, PATHOLOGICAL CHANGES, AND TREATMENT,

by HENRY HOLLINGSWORTH SMITH, of Philadelphia.

Special Anatomy. This organ is about the size of a goose-quill. In cases of extreme length (6 or 8 inches), its free end may become wound around the small intestine, and form a constricting band. At its opening, which is not at the most dependent portion of the cæcum, but on its posterior wall, there is a ridge of mucous membrane which acts as a valve to prevent the contents of the cæcum from escaping into the cavity of the appendix. He contends that this valve-like arrangement will withstand considerable pressure, and for this reason the danger of seeds and other foreign bodies getting into the appendix is not so great as has been thought. When the opening becomes occluded from any cause, this organ may undergo distension by its own secretion and form mucocele. In the fœtus, it is frequently found filled with meconium.

The use of this organ is undetermined, but it is not intended for a cherry-seed trap. Any speculations as to its use seem to be mere hypotheses. Tiedman and Mellin observed that the juice of the appendix has a slight digestive power.

One of the earliest symptoms of inflammation of this organ is constipation; and as an inflammation here leads to constriction, obstruction, and distension of the duct, and finally, abscess and peritonitis, we should use such remedies to promote peristalsis as will assist to empty it.

Specks of hardened feces and small concretions composed of calcium, magnesium, and phosphoric acid, which are often mistaken for foreign bodies, are frequently found in this organ. Pyæmic abscesses, peritonitis, perinephritis, and empyemic abscess have all been reported as results of appendicitis.

Owing to the obscurity of symptoms, and the similarity of them to other intestinal lesions, the diagnosis is not easily made, and in some cases is only arrived at by exclusion.

The treatment should embrace the use of calomel and saline purgatives, enemata containing turpentine, opiates to relieve pain. Palpation, under ether, may be tried, in an endeavor to favor peristalsis. When the symptoms of abscess appear, and the temperature becomes elevated, operative procedure is justified, but the use of the remedies enumerated should precede laparotomy. The symptoms of perforation at any time would, of course, indicate operative interference. After cutting down upon the cæcum, the appendix should be carefully examined for calculus before anything else is done, and if a concretion, or a perforation, or a distension indicating an obstruction be found, the duct should be ligated near the cæcum and removed.

DR. J. MCF. GASTON, Atlanta, Ga.: In alluding to the effectiveness of the valve-like arrangement at the mouth of the appendix vermiformis, stated that in certain cases the cæcum had been found distended and even ruptured, while the appendix remained collapsed. It is rare to find any indication of trouble here before actual inflammation, suppuration and abscess occur.

A digital examination per rectum may enable the surgeon to detect the presence of an abscess in the iliac region. Perforation forms a dividing line in the symptom; before this, the diagnosis is doubtful, after

it has occurred, it is plain. As to treatment, he regards a masterly inactivity as more prudent than aggressive interference. Auodyne and soothing applications are always in order. Exploratory incision is advisable when there is strong evidence of disease; the incision can be closed and no harm may be done. When it is certain that appendicitis exists, the operation cannot greatly augment the danger to life, and may result in a cure. He thinks that through an incision made to the outer side of the rectus muscle, an appendicular extravasation can be more readily treated.

DISCUSSION.

DR. T. G. MORTON, Philadelphia: In the vast majority of cases perityphlitis is caused by a concretion of phosphates of calcium and magnesium or of hardened faeces or else by some foreign body in the appendix. Whenever we have any evidence of an abscess in the iliac region we should always suspect this disease, and endeavor to expose the abscess. A simple emptying of the abscess cavity will not suffice, but it must be exposed to view and treated.

Among the earliest symptoms of appendicitis we find that severe pain of a paroxysmal character is one of the most prominent; constipation is present. Inflammation, nausea, vomiting, elevation of temperature and evidences of pus in the iliac region rapidly appear. Before pus can be actually detected by physical signs, its presence may be diagnosed by the general symptoms that indicate its existence at any point. Before the appearance of pus the iliac region is tympanitic. Perforation is ushered in suddenly by excruciating pain with nausea and vomiting.

The treatment should include operative measures as well as the palliative opiates, fomentations, etc., for the danger of operation becomes slight compared to the danger of abdominal inflammation, which is certain to occur if the case is left to nature.

The exploratory needle should never be used, for it does not furnish absolute evidence, and its use is not devoid of danger. The incision for the operation should be lateral and not in the median line, for the necessary manipulation can be more readily performed and subsequent drainage more easily secured through a lateral opening. He has learned by dissection that the appendix may be found under a horizontal line drawn from the anterior superior spinous process of the ilium to the median line. If a perforation of the cæcum should be present, it should be cleansed and closed with Lembert sutures. If the cause of the perityphlitis lies in the appendix, it should be ligated close to the cæcum and removed. The abscess-cavity should be thoroughly irrigated, a glass drainage-tube introduced and a dry antiseptic dressing employed. In most cases he does not close the opening but allows it to granulate; the cæcum which is firmly fixed in its position cannot escape.

In summarizing his remarks he dwelt upon the opinion that it is far better to operate than to wait, for the prognosis grows more serious every hour the operation is postponed. The secretions should be washed away through the glass drainage-tube as often as the temperature and odor indicate.

(To be continued.)

— Don't write your prescriptions for solanin on too liberal a scale. It costs two dollars a gramme,

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EMBRYOCARDIA, — THE LOWERED ARTERIAL TENSION IN TYPHOID FEVER. — THERAPEUTIC INDICATIONS.

THERE is a cardiac symptom to which Huchard calls attention in a recent lecture in Bichat Hospital, and to which he attaches a great prognostic importance. It is the *fœtal* character of the sounds of the heart, which consists of the perfect equality, as to duration, of the greater and lesser pause. The heart sounds are, therefore, equal and precipitate, and have a striking resemblance to the ticking of a watch and the beatings of the fetal heart. Huchard gives to this quality of cardiac action the name of *embryocardia*, and regards it as a symptom of the very worst augury. It is always associated with *tachycardia* (acceleration of the pulsations), and is a sign, not only of enfeeblement of the heart, but also of a considerable fall in the arterial tension, two inseparable conditions of the collapse which often attends the later periods of typhoid fever.

Huchard relates the particulars of a case to which he was called in consultation. The patient was a young girl, fourteen years of age, and it was the eighth day of the fever. The disease was seemingly progressing with all the regularity desirable: the rose spots were beginning to show themselves; the diarrhœa was moderate, and not fetid; the tongue was moist, and the cerebral condition satisfactory; the lungs and brouchi were intact, but there was a febrile temperature of 104° F. Notwithstanding this febrile elevation, the medical attendants were disposed to give a favorable prognosis, when Huchard called their attention to the rapidity of the pulse (130 per minute), and the fetal character of the heart sounds, and announced the certain and near death of the patient, which took place within two days.

In another case, in many respects similar to the above, Huchard thinks that he saved the life of the patient by a kind of treatment which he earnestly recommends in threatened collapse, and which consists in hypodermic injections three or four times a day, of caffein and ergotin. The formula is fifteen grains of

ergotine and four grains of caffein, dissolved in some suitable menstruum, and injected subcutaneously. Whenever, then, the fœtal character of the heart sounds is perceived, this injection is, he believes, indicated. Nor would he be deterred by a cyanotic appearance of the integuments and coldness of the extremities.

In 1886 Demange published in the *Revue de Médecine* a very striking case in favor of treatment similar to that above pointed out. He mentions the same quality of the heart sounds, "whose rhythm resembled the fœtal rhythm." The patient was a young girl eleven years of age, suffering from grave typhoid fever of ataxic form. She was taken with repeated attacks of syncope. The pulse was small and compressible, oscillating between 140 and 150. The extremities were cold and cyanosed, the heart sounds feeble and precipitate. The respiration at times was of the Cheyne-Stokes kind, and death seemed imminent. Under the influence of three injections of one gramme of ergotine (associated with subcutaneous injections of ether and digitalis by mouth) the pulse improved, the symptoms of syncope vanished, and the patient eventually recovered.

Bernheim (quoted by Huchard) who has written so much upon a certain *cardiac form* of typhoid fever, attributes these morbid accidents to the action of the typhoid poison on the vagus and on the cardiac innervation. He thinks that this poison acts after the manner of digitalis and the biliary acids which slow the heart by irritation of its moderator centre. This it is that explains the relative slowness of the pulse in dothineuteritis. But just as digitalis in toxic dose causes acceleration of the pulse, so also the typhoid poison when in excess in the blood, may produce paralytic acceleration of the heart. This theory seems confirmed by the results of the administration of therapeutic agents. Often, in fact, digitalis when given in this cardiac form of typhoid fever, seems to do more harm than good, by adding, as it were, its effects to those of the typhoid poison.

But this is not all. Besides the nervous and other lesions of the myocardium in typhoid fever, there are certain arterial lesions, whose existence was demonstrated in 1869 by Hayem, afterwards by Landouzy and Siredey, and of all diseases, says Huchard, typhoid fever is the ofttest accompanied by marked diminution of the vascular pressure. Potain has demonstrated this lessening of arterial tension in dothineuteritis by means of the sphygmo-manometre. Thus he has seen the pressure fall to fourteen, and even to eight and seven centimetres, the normal being represented by sixteen and eighteen centimetres. This enfeeblement of the arterial tension is also indicated by the dirotism of the pulse, by the ease with which the pulse may be effaced, by the diminution of the diastolic sound of the aorta, and by the acceleration and fœtal rhythm of the heart.

In explaining the production of this latter phenomena, the "embryocardia," Huchard hypothesizes a

direct action of the fever poison on the peripheral arterial contractility, which is impaired or destroyed thereby. The heart, then, according to a law of Marey, beats the faster the less the peripheral resistance it has to overcome. Moreover, its moderator nerve being paralyzed, it readily runs riot. Symptoms of asphyxia and cyanosis show themselves the more speedily the more the heart muscle becomes soft and flaccidly degenerated.

The danger, then, is with both the heart and peripheral circulation. The caffein is administered with the intent to fortify the heart, while it is sought to combat the condition of the arteries by ergot of rye, which raises arterial tension, and augments the contractility of the vessels lessened by the typhoid poison.

Moreover, the hypodermic method is preferred for the reason that the ergotin and caffein are thus more readily introduced into the blood. In fact, in typhoid fever the power of absorption by the digestive tube is low, by reason of the profound lesions which affect the intestine, as is demonstrated by the large doses of quinine (three to five grammes) which are often given with impunity in this disease.

BLOOMINGDALE ASYLUM TO BE REMOVED.

THE Society of the New York Hospital has now determined upon the removal of the Bloomingdale Insane Asylum to White Plains, where it already owns a tract of land suitable for such an institution. It is 117 years since the Society was chartered, and over 72 years since it purchased, for \$4,000, the site at present occupied by its asylum; and the buildings were opened for the reception of patients, July 27, 1821.

The grounds extend from 110th to 114th Streets, and from 10th Avenue to the Boulevard, comprising 558 building lots, which are now valued at from \$5,000 to \$8,000 each. This piece of property, situated, as it is, on the high and picturesque land between Morningside and Riverside Parks, is one of the finest for residence purposes on Manhattan Island, and the decision of the Board of Governors to remove the institution to a greater distance from the city is no doubt a wise one. The buildings will all be demolished, with the exception of the John C. Green Memorial Building, a very substantial and handsome brownstone structure, which will be allowed to remain, and will be converted by the Society into a general emergency hospital.

No formal action has been taken as to the disposal of the property, but it is understood that as soon as the new buildings at White Plains are ready for occupancy, it will be properly subdivided and put up at auction for the sale of the lease-holds only. These lease-holds, it is supposed, will produce an income of nearly \$200,000 a year. At the recent meeting of the Board of Governors at which the removal was decided upon, it was determined that \$1,000,000 should be appropriated for the building of the new asylum,

that plans and specifications be prepared, and that the work be entered upon without unnecessary delay.

In furtherance of these objects, committees were appointed to devise a financial scheme to provide the necessary funds, and to secure suitable plans for the proposed buildings. Before the removal was finally determined upon, a favorable report was received from a Commission of sanitary experts which had been appointed to investigate the suitability of the White Plains property for the purpose contemplated.

THE SUPERIORITY OF ANTIFEBRINE OVER THE ANTIPYRETICS.

BERNHEIM and Simon, of the Faculty of Nancy, have communicated to the *Revue Médicale de l'Est*, the results of their experiments with antifebrine. They have studied it solely from the point of view of its antithermic action. The daily doses varied between four and thirty grains. The ordinary antithermic dose for an adult is from three to five grains, which may safely be repeated every hour until a sufficient fever-fall is produced. According to their observations shortly after the ingestion of the medicament the temperature begins to fall, and at the end of four hours the minimum thermic point is reached; the temperature then begins to rise, and at the end of three or four hours it has regained its initial degree. These clinical observers have deduced from their experiments the following conclusions: Antifebrine is not alone an analgesic, as has been said, but it is a true antithermic medicament, efficacious, and without danger, (they have, in fact, seen no bad results in two hundred and twenty-three cases in which they have fairly tested it). Its antipyretic action does not manifest itself by any marked sign, and the thermometric fall does not result from a modification pure and simple in the distribution of the organic temperature.

If, in fact, you study the variations of the rectal temperature and of the peripheral temperatures under antifebrine, you see that the thermic fall is produced at the same time in different points of the cutaneous surface, while the central temperature diminishes contemporaneously.

Antifebrine is much superior to all the other antithermics known, and to antipyrine in particular; it has over the latter the advantage of a composition that never in the least varies, is of moderate price, and is perfectly tolerated by the digestive passages. Lastly, its greater activity enables us to employ it in doses four times less than antipyrine.

THE BOSTON SEASHORE HOME.

THE twelfth annual report of the Boston Seashore Home for the summer of 1887, just published, shows, according to the report of the visiting physician, Dr. C. W. Townsend, that the whole number of inmates between July 1st and September 15th was 317, and of

these 199 were children, 117 of them being under three years of age.

The diseases treated were largely diarrhoeal — 87 cases — divided into cholera infantum — 7 cases — of which 2 recovered and 5 died; gastro-intestinal catarrh, 20 cases, of which 10 recovered, 5 were relieved, 4 not relieved, and 1 died; and intestinal catarrh, 60 cases, of which 46 recovered, 11 were relieved, and three not relieved. Three infants died from tuberculosis in some form, one from lobular pneumonia, and one from lobar pneumonia. Two of the cases of cholera infantum were moribund on arrival, and all the deaths occurred in hand-fed infants.

The old building was crowded to its utmost capacity during July and August, and the need of new and enlarged quarters is earnestly urged in the report by Edw. E. Hale, one of the directors, who appeals for \$10,000 for this purpose. The Home is at Winthrop, a short distance from Boston on the Revere Beach Railroad, and receives sick infants and young children with their mothers during the hot weather. Applications may be made to Dr. Hastings or to the visiting physician.

MEDICAL NOTES.

— Sir Morell Mackenzie's compensation for attendance on the Emperor Frederick is said to have been fixed at \$15,000 per quarter (three months), or any portion of that time. This seems like a liberal fee, but it is to be remembered that the proceeds of his private practice in London are reported to be \$75,000 per annum.

— The *Druggists' Circular and Chemical Gazette* for May publishes two very amusing "parallel column" portraits, the one purporting to be a medical man, the discoverer of a certain widely advertised proprietary medicine, and the other being actually a portrait of Ludwig Spohr, the composer, who died in 1859. The pictures are liker than the two Dromios; in fact, are evidently identical, even to the last curl of the hair and the fold of the cravat. The inference is, therefore, very naturally drawn that the eminent medical discoverer referred to by the advertisers has no existence, and he is thus relegated to the same limbo with the late lamented "Mrs. Harris."

— The danger of infection from the use of books from circulating libraries has received intelligent attention in England, says *Science*, and means have been devised for their disinfection. The principle on which disinfection is based is the vaporization of carbolic acid by heat, whereby it is claimed that its action is more potent. Heat is applied to the outer casing of an apparatus, which is fully under control, so that a temperature which might injure the books can be avoided. The heat employed is from 150° to 200° F., the books being subjected to this temperature for fifteen minutes, and not injured by the process. The apparatus is said to be patented. Whether the process is applied to all books each time they return to the

library, is not stated. But unless this is done, it does not seem that there is any security from disinfection, for no one can tell whether, in a given instance, the book has received infection or not.

— There is one of the high schools not ten thousand miles away where physiology is a required study. Recently a lady came to the principal with a request that her daughter might be excused from that study. The principal explained to her that the study was required, and that a diploma could not be given unless the examination in that study were passed, or unless some satisfactory excuse were furnished. After some hesitation the mother gave as her reason for objecting to the study that she intended her daughter to study Christian Science after leaving school, and she believed that a previous study of physiology would be injurious to her. She was probably right.

BOSTON.

— The Olemargarine Bill, which passed the lower house and was advanced to the third reading in the Senate, failed of engrossment last week, the President of the Senate voting in the negative to break a tie. This week, the matter coming up again on motion to reconsider, that officer again voted in the negative, his vote this time making a tie, so that reconsideration failed, and the measure is defeated.

NEW YORK.

— The Legislature, before its adjournment, passed an act, which received the approval of the Governor, appropriating the sum of \$250,000 for expenditures in connection with Quarantine. These expenditures are to be made through the hands of a Commission consisting, in accordance with the provisions of the act, of the Mayors of New York and Brooklyn, the Health Officer of the Port of New York, the State Engineer and Surveyor, and the Commissioners of Quarantine; and among the items contemplated are the following: \$50,000 for care, maintenance, and repair of the Quarantine establishment, \$121,000 for repairs at Hoffmann Island and the upper boarding-station, and \$25,000 for a new hospital-ship.

— Governor Hill has issued a proclamation establishing a cattle quarantine in the counties of New York, Kings, Queens, Richmond, and a portion of Westchester, on account of the prevalence of pleuropneumonia, and empowering Professor James Law, of Ithaca, to appoint such inspectors of the United States Bureau of Animal Industry as may be necessary for the suppression of the disease.

— A man who was recently bitten by a rattlesnake at Fort Lee (at the lower end of the Palisades) has had a narrow escape from death. He was treated at the Manhattan Hospital in Harlem, which is connected with Fort Lee by ferry, and is now out of danger; the principal agents employed being whiskey and carbonate of ammonia. It is a long time since any rattlesnakes have been met with as near the city as in this instance.

— It is announced from Nyack, on the Hudson, that nine of the lawyers of Rockland County have challenged the physicians of the county to play a game of base-ball. The communication concludes in the following considerate language: "Should you accept this challenge, we would suggest that you provide yourselves with an ambulance and an efficient surgeon to be in attendance upon you during the progress of the game, as we expect to paralyze you."

— At Westburg, near Brooklyn, a few days ago, were married a colored widower and widow at the venerable ages of 93 and 86.

— Dr. Howard Pinkney, a well-known New York practitioner, died very suddenly in England on the 14th of May. He had gone abroad for his health, and his death took place on a train from Southampton to London very shortly after he landed. Dr. Pinkney was born in New York in 1837, and graduated from the College of Physicians and Surgeons in 1860. After serving for some months on the house-staff of Bellevue Hospital, he entered the army at the outbreak of the late war as surgeon of the Ninth Regiment, New York Volunteers. He was in the field at the battles of Ball's Bluff, Harper's Ferry, Antietam, and South Mountain, and several times was assigned to special hospital duty; at one period having charge of the United States Army Hospital at Frederick City, Maryland. Since the war he has practised in New York City, devoting himself more particularly, though not exclusively, to diseases of the ear, to which subject he made many useful contributions in the medical journals. For twenty years he was surgeon to the New York Eye and Ear Infirmary, and for nine years was connected with the dispensary belonging to the Church of the Holy Trinity. He was a widower, and leaves one son, Dr. W. H. Pinkney, who has of late been associated with him in practice.

— Dr. Edward Hamilton Davis, who had a high reputation as an archæologist, died at his residence in Harlem, May 15th. He was born in Ross County, Ohio, January 22, 1811. He received his classical education at Kenyon College, and was graduated from the Cincinnati Medical College in 1838. He practised with great success as a physician at Chillicothe, Ohio, until 1850, when he came to New York to reside. Since that time he has devoted his attention mainly to archæological research, and he soon became an acknowledged authority on American antiquities, delivering courses of lectures on this subject in New York, Boston, Brooklyn, and other cities. He opened nearly two hundred mounds at his own expense, and gathered the largest collection of mound relics ever made in this country. It now forms part of the collection at Blackmore's Museum at Salisbury, England, and a duplicate collection is to be found at the American Museum of Natural History, New York. He describes his extensive explorations and their results in a work much prized by archæologists, entitled, "Ancient Monuments of the Mississippi Valley."

Correspondence.

MANY LIVING GENERATIONS.

LEAVENWORTH, KANSAS, May 12, 1888.

MR. EDITOR.—*Apropos* of the six and five living generations mentioned by Drs. Root and Channing, I would state that last month I attended a girl who was fourteen years old last December, in her first labor, the child being a healthy boy, his grandmother who was present was 28 years old and his great-grandmother was also present and but 49 years of age, making a shorter list of living generations than they mention, but a much younger great-grandmother.

Speaking of this to a friend at the table he informed me that at a recent reunion of his family there were present his sister's grandchild, 1 year old, his sister's daughter, 20 years old, his sister 40 years old, and his grandmother 94 years old. The chain was broken by the absence of his

father who died 20 years previously at the age of 40, but there was present an aunt nearly the same age who might serve as a substitute.

I would also mention, not as a remarkable fact, but as calling attention to frequent child-bearing as a fruitful source of debility in women, the cases of two women who happened to be in my office at the same time. One was married at the age 23, is now 40, and has had 9 children: of these, three were born on December 8, 1884, March 9, 1886, March 13, 1887. The other, now 43 years of age, has had 7 children: the dates of 4 of the births were February 4, 1867, March 13, 1868, December 27, 1869, March 19, 1871. The other children in both families were only slightly different in age, although the births were not quite so frequent. When families are brought into existence at such rates as these it is to be wondered at that so many mothers seek for some method of preventing conception?

W. D. BRIDWELL, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING MAY 12, 1888.

Cities.	Estimated Population for 1888.	Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diarrhoeal Diseases.	Diph. & Croup.	Scarlet Fever.
New York	1,526,081	865	325	20.04	19.80	1.68	7.56	5.28
Philadelphia	1,016,758	399	115	13.00	11.25	1.25	2.00	.25
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,155	144	60	11.73	13.11	1.38	2.76	—
Boston	407,024	195	61	10.20	13.26	.51	7.13	—
New Orleans	248,000	121	55	16.60	6.64	10.79	3.32	—
Buffalo	230,000	—	—	—	—	—	—	—
District of Columbia	225,000	63	20	12.56	17.27	1.57	1.57	—
Pittsburgh	210,000	84	38	17.85	22.68	4.76	2.58	—
Milwaukee	200,000	61	36	12.48	15.60	—	1.56	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	—	—	—	—	—	—	—
Charleston	60,145	49	27	22.44	4.08	12.24	—	—
Portland	40,000	6	2	16.66	—	—	16.66	—
Worcester	76,328	24	5	12.48	—	—	8.16	—
Lowell	69,530	31	13	25.84	12.92	—	9.69	—
Cambridge	64,079	25	14	24.00	4.00	—	16.00	8.00
Fall River	61,203	23	4	—	13.05	—	—	—
Lynn	51,467	—	—	—	—	—	—	—
Lawrence	40,175	7	0	14.28	14.28	—	—	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36,298	—	—	—	—	—	—	—
Somerville	33,307	—	—	—	—	—	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	7	2	14.28	—	—	14.28	—
Chelsea	27,552	9	3	—	33.33	—	—	—
Haverhill	24,979	—	—	—	—	—	—	—
Taunton	24,796	9	1	11.11	—	—	—	—
Brockton	24,784	5	0	—	—	—	—	—
Gloicester	23,187	10	3	—	20.00	—	—	—
Newton	21,105	5	1	—	—	—	—	—
Malden	18,932	3	0	—	—	—	—	—
Fitchburg	17,534	—	—	—	—	—	—	—
Waltham	16,651	8	4	—	12.50	—	—	—
Newburyport	13,839	4	2	—	25.00	—	—	—
Northampton	13,419	3	0	—	—	—	—	—

Deaths reported 2,058: under five years of age 794; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 340, acute lung diseases 324, consumption 268, diphtheria and croup 109, scarlet fever 47, diarrhoeal diseases 46, typhoid fever 45, measles 34, whooping-cough 21, cerebro-spinal meningitis 21, small-pox 9, erysipelas 9, malarial fever 6, puerperal fever 5. From typhoid fever, Philadelphia 29, New York three, Pittsburgh and Lowell two each, Boston, New Orleans, Milwaukee, Charleston, Worcester, Lawrence, and Taunton one each. From measles, New York 15, Baltimore eight, Pittsburgh four, District of Columbia three, Boston, Milwaukee, and Lowell one each. From whooping-cough, New York 10, Charleston four, Philadelphia three, New Orleans two, Baltimore and District of Columbia one each. From cerebro-spinal meningitis, New York three, District of Columbia, Pittsburgh, Milwaukee, and Lowell two each. From small-pox, New York five, Philadelphia four. From erysipelas, New York five, Cincinnati three, Boston one. From malarial fever, New York four, Philadelphia

and Baltimore one each. From puerperal fever, Milwaukee three, Philadelphia and Pittsburgh one each.

In the 20 cities and larger towns of Massachusetts, with an estimated population of 1,005,167, the total death-rate for the week was 19.61, against 23.43 and 20.87 for the previous two weeks.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending April 28th, the death-rate was 18.9. Deaths reported 3,400: infants under one year of age 848; acute diseases of the respiratory organs 343, scarlet fever 48, measles 38, diphtheria 35, diarrhoeal diseases 34, fevers 23, small-pox (Sheffield five, London and Bristol one each) seven.

The death-rates ranged from 25.9 in Blackburn to 14.7 in Bolton; Birmingham 17.1; Bradford 19.5; Hull 13.7; Leeds 20.7; Leicester 23.5; Liverpool 21.3; London 17.5; Manchester 24.8; Newcastle-on-Tyne 16.1; Norwich 19.5; Nottingham 18.3; Sheffield 21.6; Sunderland 18.2. In Edinburgh 18.3; Glasgow 24.4; Dublin 31.5.

The meteorological record for the week ending May 12, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barometer.		Thermometer.		Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration Hrs. & Min.	Amount in Inches.
Saturday, May, 12, 1888.																			
Sunday, ... 6	30.13	58.0	69.0	42.6	71.0	32.0	60.0	54.0	W.	S.W.	W.	6	12	12	O.	F.	C.	1	.02
Monday, ... 7	30.19	57.0	66.0	52.0	44.0	34.0	50.0	43.0	N.W.	N.W.	N.W.	12	16	5	F.	O.	C.	1	
Tuesday, ... 8	30.22	56.0	66.0	42.0	48.0	26.0	61.0	45.0	W.	S.W.	S.W.	8	22	15	C.	O.	O.	1	*T
Wednesday, ... 9	29.57	56.0	65.0	46.0	100.0	78.0	84.0	87.0	S.	N.E.	S.W.	4	8	7	R.	O.	C.	12	.53
Thursday, ... 10	29.59	62.0	71.0	51.0	84.0	61.0	93.0	79.0	S.W.	S.W.	S.	12	16	7	F.	O.	O.	2	.01
Friday, ... 11	30.16	46.0	67.0	44.0	93.0	93.0	100.0	96.0	E.	E.	E.	6	12	12	O.	O.	R.	4	.38
Saturday, 12	29.85	53.0	58.0	43.0	100.0	94.0	93.0	86.0	E.	E.	N.E.	13	3	3	R.	O.	O.	12	1.42
Mean, the Week.	30.073	55.4	67.0	46.0				71.3										32	2.36

O, cloudy; C, clear; F, fair; G, fog; H, hazy; S, smoky; R, rain; T, threatening; N, Snow; *T, trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 12, 1888, TO MAY 18, 1888.

Paragraph 11, S. O. 104, A. G. O., May 5, is amended by Paragraph 4, S. O. 108, A. G. O., May 10, 1888, and Major Charles R. Greenleaf, Surgeon, Major Robert M. O'Reilly, Surgeon, and Captain John O. Skinner, Assistant Surgeon, are detailed as a board of medical officers to assemble at the United States Military Academy, West Point, N. Y., on June 1, 1888, to examine into the physical qualifications of the candidates for admission to the Academy, and, in connection with the superintendent of the Academy and commandant of cadets, the members of the graduating class.

APPEL, D. M., captain and assistant surgeon. Will be relieved from duty at Fort Davis upon the arrival of Capt. J. V. Lauderdale, assistant surgeon, and proceed to Fort Hancock, and report to the commanding officer of that post for duty. S. O. 49, Department of Texas, May 5, 1888, and S. O. 50, Department of Texas, May 9, 1888.

EDIE, GUY L., first lieutenant and assistant surgeon. Will proceed, not later than the 25th inst., to Fort Concho, and report to commanding officer, Eighth Cavalry, for duty as medical officer, in compliance with Paragraph 13, S. O. 99, c. s., Headquarters of the Army. S. O. 49, Department of Texas, May 5, 1888, and S. O. 50, Department of Texas, May 9, 1888.

WALKER, F. V., first lieutenant and assistant surgeon. Will be relieved from duty at Fort Kingold, and proceed with Company D, 16th Infantry, to San Antonio; he will then report for duty to commanding officer, Post of San Antonio. S. O. 49, Department of Texas, May 5, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING MAY 19, 1888.

KERNNER, EDWARD, surgeon. Detached from United States ship "Pensacola" and wait orders.

SAYRE, J. S., assistant surgeon. Detached from United States ship "Pensacola" and wait orders.

JONES, W. H., surgeon. Detached from Navy Yard, League Island and to "Pensacola."

COOKE, G. H., surgeon. Ordered to the Navy Yard, League Island.

CRAWFORD, MILLARD A., passed assistant surgeon. Ordered to the "Vandalia."

WIENER, F. W. F., assistant surgeon. Detached from "Vandalia" and ordered home.

STONE, E. P., assistant surgeon. From Naval Hospital, New York, and to the "Pensacola."

HARMON, G. E. H., passed assistant surgeon. Commissioned a surgeon, May 12.

LECTURES. UNIVERSITY OF VERMONT.

T. D. Crothers, M.D., of Hartford, Conn., will deliver a course of lectures on the "Diseases of Inebriety, its Pathology and Treatment," at the Medical College of the University of Vermont, in Burlington, May 22, 23, and 24, 1888, at 10 A. M. each day.

OBITUARY. EDWARD SWIFT DUNSTER, M.D.

Edward Swift Dunster, M.D., of Ann Arbor, Michigan, professor of obstetrics and diseases of women and children in the University of Michigan, died on Thursday, the 3d inst., at the age of fifty-four years. Dr. Dunster was born in Maine, took his college course at Harvard, and obtained his medical education in New York. He served as a medical officer in the Army of the Potomac, and after the war practised in New York City. He taught in various capacities in Dartmouth College, the University of Vermont, and the Long Island College Hospital, and was appointed to his chair in the University of Michigan, in 1873.

DEATH.

Died, in Newburyport, Mass., May 17, 1888, Enoch Cross, M. D., M.M.S.S., aged eighty-six years.

BOOKS AND PAMPHLETS RECEIVED.

Photographic Illustrations of Second Series of Skin Diseases. By George H. Fox. Parts V and VI. New York: E. B. Treat. 1888.

Food Laws. By Henry Leffmann, M.D., Second Vice-President of the Medical Jurisprudence Society of Philadelphia. 1888.

The Legal Aspect of Suicide. By Hon. William N. Ashman, President of the Medical Jurisprudence Society of Philadelphia. 1888.

Twenty-First Annual Report of the Directors of the Massachusetts Infant Asylum, presented to the Corporation at the Annual Meeting, April 10, 1888.

A Year's Work in Abdominal Surgery, with a Report of 80 Laparotomies done in 1887. By W. Gill Wyllie, M.D., New York. Reprint. 1888.

The Neural and Psycho-Neural Factor in Gyneciac Disease. By C. H. Hughes, M.D., St. Louis, late Superintendent, Missouri State Lunatic Asylum; Honorary Member, British Medical-Psychological Society, etc. Reprint. 1888.

One Hundred and Ten Laparotomies for the Removal of the Uterine Appendages: Sixty-One Consecutive Operations without a Death. By Prof. W. Gill Wyllie, M.D., New York. Reprint. 1887.

Notes on Tobacco-Amblyopia. By Edgar A. Browne, F.R.C.S.E., etc., Surgeon Eye and Ear Infirmary, Lecturer on Ophthalmology, University College, Liverpool, England. Reprint. 1888.

A Case of Quinine-Amaurosis, with Remarks. By Edgar A. Browne. Reprint.

Medical Department of the Tulane University of Louisiana; Catalogue for 1887-8; Circular for 1888-9, with Notice of the Course in Pharmacy of the Medical Department, and with Announcements of the Law, Collegiate, and Academic Departments of the University. New Orleans, 1888.

A Guide to the Practical Examination of Urine for the Use of Physicians and Students. By James Tyson, M.D., Professor of General Pathology and Morbid Anatomy in the University of Pennsylvania. Sixth edition, revised and corrected, with a colored plate and wood engravings. Philadelphia: P. Blakiston, Son & Co. 1888.

Original Articles.

TWELVE YEARS IN THE DEVELOPMENT OF
A CASE OF MORAL IMBECILITY.¹

BY ALBERT N. BLOODGETT, M.D., BOSTON, MASS.

PERHAPS I should preface the short paper which I have the honor to present, by something in the way of an apology, both for presuming to claim the attention of this Society by the narration of only a portion of a case, however so great the interest attaching to the subject itself may be, as well as for employing the term I have adopted in the title of the paper.²

I will only remark that this attempt to present what has been to me for some years a subject of great and increasing interest, is to be regarded only as a preliminary report which will probably be followed at some future time, by the sudden and unexpected development of additional and important symptoms, which I trust to have the pleasure of laying before you as a further chapter in the history of this case to which in all probability the possible autopsy of the patient may be added as the conclusion; and I venture to express the hope, the key to some of the features which have thus far proved to be of most serious importance.

The patient is a boy, born in Boston, or its near vicinity, where he has always lived, and whose career has ever been the object of much anxious solicitude on the part of dear and conscientious friends. He is at present fifteen years and seven months of age, as attested by his mother, his friends, and as recorded by his own hand within a short time. The importance of this varied evidence as to the age of our patient will become evident a little further on. As a child, this boy was the recipient of much attention, and showed at an early period, signs of great mental activity. He developed into a precocious child, and at three years was able to read, to recite, etc., all the usual phenomena of precocity being present. He was and is a strongly developed, large framed boy; the head is large, the hands broad, the limbs sturdy.

The antecedents of the patient are capable of accurate verification and in brief are as follows. The father of the boy was a man reared in a maritime town, of good stock, and who early became a sailor, and was the master of successive ships trading to the various commercial ports of the Indian Ocean, and making many voyages around the capes at the southern portions of the Eastern and Western continents. During one of these passages, the vessel was wrecked and the crew was exposed to great hardships, among which starvation and anthropophagy is supposed to have been included. On a subsequent voyage to the Indian Ocean, the captain was attacked by a peculiar disease, affecting the body and limbs something in the

way of acute diffused neuritis, with active delirium and permanent deterioration of the mental faculties, as was currently believed. The accounts of this malady are somewhat meagre, being gleaned from the family connections, some of whom suspected that the disease was one of the manifestations of syphilis, though the man had presented no previous evidences so far as is known of this disorder, and his children, a daughter and the son who is the subject of this paper, as well as a still-born child, which was delivered at about this period were all without known appearance of syphilitic taint. The living children have never to this date shown the indications of any form of syphilitic development. I have been inclined to think that the serious attack affecting the father at that time may have been Beri-beri, though I am not in a position to defend this opinion in a satisfactory manner. The father was sent home on his own ship, but under another master, and on arrival he was discharged as incapacitated for the position of captain. For a time he remained quiet, but at length after some months, he began to exhibit a roving tendency, and drifted westward to the mining districts, where he died after a period of about two years. The nature of his last sickness is not known to his friends.

The mother of the patient is living, and is well. She has never been remarkable in any way, but might be called somewhat erratic. The grandparents on the mother's side are both still living, and have always maintained an enviable reputation for intelligence and general information.

As a child of tender years, this boy presented peculiarities which were spoken of as evidences of unusual intelligence, but which now seem more like the preliminary symptoms of defective or disordered mental or moral equilibrium.

The first thing to claim medical notice was the tendency of the child to devour strange and indigestible substances, so that a careful watch was for years kept upon his movements, from the fear that he would swallow things which would cause injury either to the stomach or to the general health. As soon as he became old enough to go to school, which owing to his precocious growth, and advanced intellectual development was at a period much earlier than children in general would be sent there, his uncontrollable desire to swallow strange things was widely extended, owing to the greater ease of accomplishing any mischief, and the larger array of objects within access. His books were always coverless, and often the half of an entire volume would be absent, it having been devoured during school hours. To these substances were soon added portions of hair, pieces of blanket, the fuzz or lint from clothing, portions of wood, chalk, plastering, and other similar and equally incongruous articles in greater or less amount. The indulgence in a diet composed of such materials, gradually led to a chronic irritability of the stomach, so that after a short time the patient would be subject to attacks which the family called "bilious turns," during which I have usually been summoned, and have invariably found that the distress of the patient was relieved by the administration of an active portion of the powder of ipecac. The nausea and vomiting which followed, were the occasion of so great a degree of comfort, that the patient soon regarded emetic remedies not only without disfavor, but with positive relish, as the means of sure and complete relief to his temporary

¹ Read before the Boston Society for Medical Observation, December 5, 1887.

² I am not entirely satisfied with the title which appears at the head of this article, and have endeavored to find one more appropriate to the case herein described, but without success. The following correspondence will show that I am not alone in the desire for a more correct nomenclature:

BOSTON, 123 Boylston Street, January 24th.
MY DEAR DOCTOR.—Please excuse me for neglecting to return your paper sooner. I am greatly obliged to you for permitting me to read it, and am much interested in the case. Your view of the boy's present and prospective condition can be the only one, and I am afraid that those who pretend to be his friends and defenders now will find him out if they have not already done so to their cost. I wish that I could suggest a better name than "moral imbecility." It does not seem to quite fill the bill, but I can think of none that will answer better. Yours sincerely,
GEORGE F. JELLY.

distress. The vomited matters always contained more or less of the materials above mentioned or other similar substances, and fragments of woolen, hair, etc., were frequently detected. The vomitus was never large in amount, sometimes dark colored, and once or twice was reddish as if it contained a slight admixture of blood. This last was, however, never present in greater quantity than would be properly expressed by the term, traces, and was seldom observed at all. Recovery from these attacks was always prompt and complete, and the health of the patient would become fully restored, so to remain until the irritability of the stomach again called for an emetic. During this period, the appetite was capricious, the strength not what would be expected in a boy with the vigorous frame of our patient, and the general vitality was not in correspondence with the physique.

At about this time the parents and friends of the child became sensible of various peculiarities of his disposition and character which they had not before observed, though it is quite within the range of probability that these strange traits had long belonged to the mental constitution of the patient. One of the most prominent, because the most annoying, was the inclination to dress in all kinds of strange and unusual costumes, often adopting the dress and even the under-clothing of other persons, of visitors, or even of persons of the opposite sex for the purpose of carrying out his desires in this direction. Soon he would wantonly take articles of value and unnecessarily damage or mutilate them in his endeavors to follow the dictates of his taste in dress. The silks and other fine dresses of his aunt and of other members of the family were often missing, and would only be found after long search, and then frequently rolled and jammed together, crowded in some out-of-the-way corner, with perhaps a jar of preserves, or a quantity of cake, or a blacking brush within them.

When remonstrated with on account of his unnatural and inexplicable conduct he would be totally unable to give any reason for such acts, and readily promised that he would certainly mend his ways, and do nothing of the kind again, and at once would, perhaps commit the same or a similar misdemeanor. Later he became even more wanton in disregard for the proprieties of his own position, or the rights and privileges of others. He took the jewelry of his aunt, who had always been very kind to him, and, going into the backyard, he hammered it out of all resemblance to ornament, utterly ruining a valuable set of precious stones. He soon began to steal, at first small things, and a little later took whatever he could obtain, using the articles stolen for his own purposes, without consideration of their source, or their suitability to his requirements. Soon after this he began to steal money, and to expend his ill-gotten wealth in the purchase of articles which pandered to either his eye or his palate. At length he commenced to steal for the purpose of selling the articles stolen, and thus obtained the means for further gratification of his unbridled propensities. He took a valuable chain belonging to one of his relatives, and selling it for a paltry sum, he hired an expensive carriage, and went calling on all his acquaintances. On being questioned in relation to his doings, he would give the most plausible and apparently artless explanation of everything in connection with the entire affair, and would often force the conviction upon his interlocutor, quite against his reason, that the youth

had been unjustly accused of irregularity in his methods. When brought to bay, however, and on finding that subterfuges would not avail, he would, in the most simple and unaffected manner, confess the whole affair, and apparently acknowledge much more than he could possibly have committed, with an appearance of innocence of any wrong intention, which was at the same time surprising and exasperating.

He now entered the public schools, and a new direction was at once opened before him for the exercise of his evil propensities. He often came home richer in pocket than when he went away, and at length it became a matter of regular daily routine to make an examination of his pockets and to try to restore to their proper owners the various articles often found therein. Sometimes he would bring home considerable sums of money, as much as thirty to forty dollars being found upon his body at one time. Reports of vicious practices to which he was found to be addicted soon reached the ears of his parents, and he was at length expelled from a good school because he had been detected in teaching evil habits to his associates. On being asked about it, he at first denied all knowledge of the matter, but, on being pressed, he not only acknowledged the things of which he was accused, but also freely confessed other wholly unsuspected vicious deeds, the commission of which was, to me at least, quite problematical.

At this time he was an acknowledged masturbator, and stated also that he had had immoral relations with some of the girls of the neighborhood in which he lived.

He was now between twelve and thirteen years of age, and was already undergoing the changes incident to puberty. The genitals were rather more largely developed than is usual in youths of completed puberty, there was a small amount of pubic hair, and the appearance was that of a boy of fifteen, rather than that of one of twelve years.

He was placed in another school somewhat remote from that he had formerly attended, in the hope that new and different associations would improve him, and that his intellectual faculties might be stimulated by contact with those who were not conversant with his previous history, and thus a healthy turn be imparted to his acknowledged mental capacity. These hopes proved, unhappily, only too delusive, and before long the boy was again detected in possession of large sums of money, to which he had no lawful claim, though, as before, he would account in the most plausible manner for every inconsistency in his behavior, or for any strange variation in his worldly wealth. He broke into a church and wantonly soiled the premises, and stole the contents of the contribution boxes. He began to wander about in the vicinity, and would often be gone all day on expeditions of which he could or would give no satisfactory account. His family now lived in a state of alarm, from the constant impending danger of public disgrace, which was continually threatening them on account of the thieving propensities of this boy, and it became a serious question what to do with him. Many suggestions were advanced, only to be dismissed as either impracticable, or as too expensive, or as unsuited to his temperament or the condition of his health; and the subject was still as far from being decided as ever, when a train of events was inaugurated which at once and finally put an end to all deliberations of this character.

During the period just previous to this time, and extending through an indefinite term of weeks and months, there had become noticeable several distinct but not obtrusive changes in the disposition and character of this boy. His frame, which was large, was not filled out to the degree which was proportionate to the figure he should make. His complexion had become markedly pale and waxy, the lips and tongue were paler than usual, and, what was more striking than anything else, there was a growing restlessness of the eyes, with an increasing vacancy of expression, so that it became at times impossible to know if he were observing what was going on around him. There was less animation in his appearance than formerly, and he moved less readily, though he was not slow to follow the dictates of his inclinations toward any object which might lead to their gratification. He had solemnly promised to leave all the vicious habits he had contracted, and for some time asserted and maintained that he had wholly overcome them, and was free from their baneful influence. He was placed in another school, where he did exceedingly well, and brought reports from his teachers which were a source of great satisfaction to his guardians. The school being some distance from his house, he was obliged to travel by the cars, and thus was thrown among entirely new surroundings, and seemed to have formed new and better associations. All through this period, however, there were gradually developed the tendencies toward a greater recklessness, with the indications of a ferocity of disposition which had not been apparent before, and which was a source of much enigmatical speculation to his family and friends. This was laid to the fact that he was changing from boyhood to manhood, and was considered to be due to that restlessness which often accompanies the physiological changes of this period of life. It was hoped that the constant influences for good would so modify his tendencies that with the accomplishment of these processes in the system, there might be a subsidence of his evil propensities, and that he might thus reach the end of his mental and moral disturbances. These hopes were, however, suddenly blasted by the discovery that the boy was again indulging his thieving propensities, sometimes bringing home large amounts of money, which he would plausibly affirm he had found in the street, and intended to advertise, or would explain in some other equally reasonable manner.

At length, the evil became so threatening that it was the opinion of every one that measures must be adopted to check it at once. The final recourse in this family was the grandfather, who, though devotedly attached to the boy, was a strict and consistent disciplinarian, and had in former times been the only power which the boy had heeded or dreaded in relation to his misdemeanors. On one occasion, therefore, when the boy now appeared with a considerable sum of money in his pockets, and was called to account for it, he was told that he would be brought for his misdeeds before the grandfather, and that he could not sit at breakfast with the rest of the family, but would be obliged to take his meal alone, and then would be summoned to the parlor, where his case would be attended to. During the breakfast, the family was startled by a loud report and a heavy fall, and on hastening to the second floor the boy was found unconscious, lying on the floor, and bleeding from a wound

in the breast, just below and to the outside of the left nipple. In his hand was a small firearm of the bull dog pattern, which was still smoking, and which contained the empty shell of a cartridge. The boy was placed in bed and heaters quickly applied to the feet, and the nearest surgeon summoned, to whose care the first steps by which the safety of the patient was rendered greater from shock, and most of all, the application of an antiseptic bandage, is due, and to whom the family and I, myself, feel under the greatest obligation. I saw the boy very soon after the accident; but at that time there was very little to do, except to watch and wait, and after assuring myself that the boy was not at that time bleeding, I left the patient in charge of a trained nurse. I will here say that I have never so fully and clearly recognized the vast importance and the true value of the institution which has been created and supported by the efforts of some of the members of this Society, for the registration and furnishing of competent nurses, as on several occasions of extreme emergency, such as the one I have here described, in which the members of the patient's own household are entirely incapable, as in this case, of rendering any assistance, and where from the nature of the case there are complications which demand the intelligent and constant watchfulness of an educated and reliable person. The nurse supplied from this Bureau was all this, and I take great pleasure in thus testifying to the efficiency of the service by which such unexpected and trying demands upon its resources, as well as upon the nurses themselves, can be so promptly and satisfactorily fulfilled.

When reaction had been to some degree established, a careful and gentle examination of the chest was made, but no wound of exit of the ball could be found. There was a point of great tenderness at a place just at the outer border of the scapula, at about the level of the eighth rib, but the tissues were swollen to such an extent that no proper examination of the part could be made. The condition of the patient was too critical to warrant any unnecessary attempts at minute diagnosis, and the whole matter was left in suspense till a more favorable period. For some days there was coarse crepitation over the lower part of the left chest, but with the rallying of the system an abundant bloody expectoration was established, and the rational signs of that side diminished in severity. The bullet-wound healed kindly, and after two weeks the boy could be moved in bed and changed to a couch with ease. Soon, however, there appeared the signs of fluid in the left chest, and ere long there were unmistakable signs of compression of the lung on that side. The heart was displaced to the right, and breathing was much interfered with. Aspiration revealed the presence of serum, which, later, was replaced by purulent fluid. Ectic now was a prominent feature, the patient became much emaciated, and at length a permanent opening was established by operation in the ninth intercostal space, just posterior to the axillary line, through which large quantities of horribly offensive, purulent fluid were discharged. The chest was frequently irrigated with a weak solution of chlorinated soda, a portion of which returned through the opening in the chest-wall, while a part of it was expectorated from the mouth. At this time it was possible to make a more careful examination of the painful region in the left back, to which attention was directed at the

time of the injury. It was observed that when the scapula was strongly rotated forward, there was rendered accessible a portion of the sixth rib behind, upon the body of which could be plainly felt a distinct formation of callus, such as is ordinarily noticeable after the fracture of a bone, and it was concluded that the bullet had passed through the cavity of the chest, and, striking the body of the sixth rib under the shoulder-blade, had fractured it, and that the bullet had then passed in some other direction, as no trace of it could be felt at that point, and no wound of exit could be discovered at any time.

An acute traumatic pericarditis supervened upon the immediate symptoms caused by the bullet, which lasted with great severity for about two weeks, occasioning the effusion of a large amount of pericardial fluid, and preceded by the most exquisite cardiac friction-sounds. This subsided in about two weeks by the aid of small blisters over the front of the chest, and digitalis internally.

From all these severe conditions, and after much suffering, our patient made a slow but steady recovery, and after ten months was apparently as well as before the injury. He was, after much anxious deliberation on the part of his family, once more placed in school, at one of the so-called "colleges" of this city, where he made good progress in his studies, and again raised the fondest expectations of those who were interested in him. Suddenly, upon some slight provocation, he rose from the table, and leaving his meal untasted, took his departure from his home, going to the house of a neighbor in the vicinity, with whom he had long been on most friendly terms. Here he was cordially received, and his cause being espoused by his new protectors, he found the change to be the occasion of no small amount of localized notoriety, and apparently enjoyed the attention of those about, of which he was the principal object. He wrote insulting letters to his aunt, who had reared him from childhood, he reviled his family in no measured terms, he added injury to injury, and made no small disturbance in the neighborhood by the outrageous tales he narrated of the doings of his own relations. In all this he was unfortunately aided and abetted by the members of the family into whose bosom he had been received, and who took no pains to conceal their partisanship for their guest. On being remonstrated with by his aunt, the boy wrote obscene and disgusting letters to her,

in which he expressed the wish that certain members of his own family might soon die, as he thought they were not very happy on earth; and in other ways added to the distress of those to whom he was attached by the strongest ties of blood and relationship. After a residence of a few days, or possibly weeks, in his new home, this boy of fifteen years and two months was married by a clergyman to the daughter of the family with whom he was stopping; his wife being aged some twenty-three or twenty-four years. The marriage was performed without the consent of the boy's mother or her knowledge, the marriage license being taken out in another city of this Commonwealth, in which the ages of both the contracting parties were given under oath as nineteen years. Since this un auspicious event the boy has once or twice been the subject of medical observation. He is now pursued by hallucinations of persecution; he imagines that he is to be kidnapped; he has the most exalted views of his own importance; and presented himself at the house of one of those whom he had outrageously insulted for the purpose of obtaining some assistance, and on being reproved for his former conduct repeated the offence.¹ He has not entered his former home; he is thus far supported by the family to whom he has attached himself, he contributing a small sum of money which had been deposited in the bank by his relatives at various times, as his share of the family maintenance. This stipend is now at an end, and thus another element is added to those which are operating to induce a new eruption of violence in this patient, which surely cannot be long deferred, and which is already the subject of anxious solicitude on the part of his relatives.

We have here the history in thus far, of a boy who was early distinguished by the marks of disproportionate development, in which I conceive the idea of precocity mainly to exist, and which was distinguished in its first stages by a certain degree of perversity of sexual tendencies, as evidenced by the strong desire for the pleasures usually accorded to girls, and decidedly unsuited to the sports of boys. To this was then added the propensity to maliciously hide and disarrange things with which he had no concern, then to steal things which he could not use, and which he would at a later period endeavor to convert into the means of his personal enjoyment, with no consistent view to their value or the associations with which they might be connected. Soon a pronounced tendency to falsehood was developed, in which the boy became

to see how it concerns you in any way, as my home is with her and her family, and I will never go elsewhere. This letter is the last of any connection between us. I shall return your letters unanswered or opened, as I wish to hear nothing of any kind from you. I hope my grandmother will soon die, for she has no peace on this earth. I am obliged for your kind offers of assistance or aid or counsel, but my lawyer will furnish the latter. My best friends the corner. And praying that mercy you to others show that mercy show to I, I remain yours, etc.

ARTHUR L. K.

¹ Letter No. 2:

DEAR SIR,—I was filled with the deepest grief at not seeing you when you honored me by your presence this morning, but hope you were able to find what you were so very anxious to. I am sure it must have been a very obscure spot, for the gentleness of your high breeding would ever go to a private house to seek for information unless every other source failed him. I deeply regret that I was not able to accompany you in your carriage, for I dare say we should have had a much longer drive than I at first anticipated. I am a source of great pleasure to find you so very fond of me, gratifying in the extreme. I assure you, I should be very glad to ascertain the cause of your sudden disappearance. As I before remarked, it is wonderfully pleasing both to myself and wife, for I expected to tell you I was married on the first day of the month to Miss G. E. W. We are very happy, and it is no one's concern besides our own. We are very glad and again for your kindness, and having you have sufficient business to employ your leisure time, besides trying to kidnap old birds, I remain yours,

A. L. K.

² Letter No. 1. To the aunt, who had cared for him during many years in the most tender manner:

DEAR MAM,—Your favor is at hand, and while thanking you as a disinterested party for your kind advice, will respectfully inform you that I consider it a waste of words. I left the house of your father because of the impurity of his conversation and his brutal cruelty to his family. As to entering his house again, I never will, on any pretext. My mother, as you yourself acknowledge, is not a proper person to have the care of me. I am at present in a home among refined people, superior in every respect to those with whom I have been accustomed to associate. You have been good and kind to me up to the present, but I can no longer justify your behavior in that time. I never want to see your face, or any member of the family again. I also wish to inform you that "Miss W—" is neither a confirmed invalid, nor is our engagement any "ridiculous absurdity" to any one. I wish you to know that I am not in any way influenced as your letter states. You see to it that I am an infant or fool. Don't you think I saw and know you, and understand you fully. Now I will inform you as to my past conduct, and then you and my mother call me an infamously fifteen-year-old boy. It is too ridiculous. I have committed adultery numberless times at the barn on F— Street and at P—'s barn, and at houses of ill-fame in Boston, and when at L—'s school, one of the girl pupils was familiar with me in the same way. I have stolen repeatedly small sums of money from Mrs. —, his present mother-in-law—Ed., and she kept it to herself. Miss W—'s friends are all people of refinement, and certainly look on her choice with horror. You know there are few in the town who do not know me, and she has been pained many times at their remarks concerning me, but she loves me, if it is a piece of "sentimentality," and has braved all, and I fail

marvellously adept, and which he would exercise with the most unblushing assurance and under the most unpromising circumstances. Then came the propensity to steal from other than the members of his own family, and with this the increased danger of detection and punishment. At this time the sexual functions were aroused and unbridled license given to various injurious habits, and even the prostitution of the girls of the neighborhood was attempted, if not accomplished. He now presented signs of constitutional disturbance, in the white waxy skin, the vacant eyes, the abstracted air, the ready plausibility of all his ideas, the self satisfaction which was a prominent feature of this period, and with all this there was an increasing recklessness of demeanor, and an augmented tendency to run any risk, to undertake any scheme, which marked a new epoch. The threatened punishment led him to seek escape by suicide, though whether this was done from a feeling of overpowering momentary terror or as a sudden impulse in the direction of remorse, we will not attempt to decide. Enough, that he did not hesitate to bring distress upon himself and others, for a comparatively insignificant cause. His long illness and slow convalescence gave him time and opportunity for meditation, and he seemed to have undergone a radical change in his disposition, until he was again able to go about, when the old impulses gradually assumed control of his acts, and he drifted into sexual vices, soon to leave his home upon the most insignificant pretext, and at a little later period to become the child-husband of a woman many years his senior.

I think that he is hardly to be held accountable for some of the acts committed since leaving his home, for he seems to have been brought into contact with "seven devils worse than himself," by whom he has undoubtedly been injuriously influenced, and to whose unwholesome association is to be laid the commission of some of his erratic actions during this period. The fact that the father and mother of an invalid girl would not only countenance a marriage such as was here consummated, but would even wink at perjury for its attainment, would seem to indicate that the misguided youth thus transformed into an infantile husband was not the only moral imbecile in this strange household.⁶

⁶ Letter No. 3.

DEAR MADAM.—I feel now that it is my duty to inform you as to Arthur's marriage which was consummated the first day of the present month. I am very sure you must have been aware of the great love he had borne Grace for over a year, and he has by his great tenderness and devotion to her, which he would never give to another, her undivided love, and although she is a few years his senior, she is undoubtedly by far the younger in her child nature. She is simplicity itself, and well may Arthur and all those connected with him be proud of such an alliance. Although Grace is not surrounded by wealth, she, I am proud to say could grace a mansion as she is lady in every sense of the word and not a girl as you spoke of her. I think you or the family could never have known who Grace's friends were, and Arthur will certainly through his wife be able to enter circles which he had never been accustomed to before. I am sorry to inform you that the marriage has been kept silent from even my own family as they would be so indignant at one like Grace giving herself to one that had led such a fearful life. You have never inquired of Arthur who he met here, therefore you are not aware that they are all people that are cultured; and most of them of wealth. I am surprised that you look upon us in the light you do and could you see my relations I think you would be surprised. Grace came from a fine old English family and as we English look at blood and not the money Arthur has not in any sense demeaned himself. I can assure you that he is loved by all with great devotion; as for myself I would do anything for him. He told Grace if she did not marry him he did not care what he did, he should go right to ruin. She has been his savior and no one else could do for him what she has done and will do. I have told her she has a long task before her and a tedious one, but she does not shrink from it. I do not think even you know the fearful sins he has committed, they have been something fearful and unfit for one to know. He told me all before he married my child, and still I allow it, I only God knows why. Miss G. if you love him be thankful to Him above that he is now out of sin. Arthur married of his own free

The above case is presented at this time, and with this much of detail for two principle reasons: First, in order to place upon record the observations made by somewhat careful study during a period of twelve years, upon a case of moral perversion originating in childhood, and increasing with the age of the individual, bearing a close relationship in its course with the development of the physiological instincts and passions and leading through a series of abnormal acts to its culmination in the attempt at suicide. Both before and after this desperate act, there is evidence of a change in the tendency of his feelings, which had been formerly directed toward himself as their object and end, but which later have exhibited an unmistakable direction toward external objects and things, with the result of an augmentation of danger to those about him, or with whom he may be brought in contact. The consideration of the past career of this unfortunate boy, and the study of his present condition, point with prophetic certainty to the commission of other acts dependent upon a perverted moral sense, and I deem it my duty to place upon public record the facts thus far obtained, and to declare my positive opinion that the individual to whom this paper relates, is the victim of some radical moral defect, and is not fully responsible. It is my belief that he cannot possess a proper and healthy appreciation of the nature and the consequences of some of his voluntary acts. I also do not hesitate to predict that this unfortunate boy will become more and more unmanageable and reckless as time goes on. I consider him a menace to the safety of the public at this time, and think that he should be placed under proper restraint, both for his own safety as well as for that of others. I believe him capable of performing any act of violence, from real or imaginary provocation, and do not think he would hesitate to employ any means of satisfying his malice or seeking revenge. These considerations lead to the presentation of the second reason for the publication of this case. This takes the form of a question: What is the duty of the medical adviser in a case of this kind? I am obliged to assume the responsibility of the care of a dangerous person, and feel that the welfare of a number of persons is in constant jeopardy, and I find myself powerless to act for his restraint. When the expected calamity has occurred, and the entire community is aroused by some shocking crime against person or life, the medical man will quite probably be subjected to harsh criticism for having omitted to take active measures for the proper restraint of an individual known to be dangerous. The way to procure the confinement of the suspected individual is not clear, as the family of the patient is not disposed to attract public attention by instituting proceedings for his commitment.

During the discussion of this paper by the members of the Boston Society for Medical Observation, in which an animated debate was carried on, the undivided opinion was expressed that the only safe and appropriate manner of dealing with this case was to move for immediate restraint of the patient, and his permanent commitment to some secure retreat, both will and he told me if he did not he would kill himself. He said he attempted it once and he should do it again if Grace did not love him. I think could you have seen her that day you would have said "a lamb given to the slaughter," she looked so holy in her white gown. They are both young and happy yet put any stumbling block in their way.

I enclose two of Mrs. H's letters; she is very wealthy and has looked forward to having Grace with her when she became better, but God has willed it otherwise.

for the safety of himself and that of others; as well as to preclude the probability of procreation on the part of an individual of this kind, by which the moral infirmities of the present patient might be transmitted in an intensified form to the offspring. No way was suggested, however, by which these desirable results were to be obtained, and I see nothing to do but to wait for the next explosion of the disease, which I fear will not be long delayed, and which may, by its character force the inauguration of measures for the seclusion of this dangerous person.

THE REINFORCEMENT AND INHIBITION OF THE KNEE-JERK.¹

BY H. P. BOWDITCH, M.D.,
Professor of Physiology, Harvard Medical School.

THE familiar fact that a blow upon the ligamentum patellæ causes a sudden contraction of the extensor muscles of the thigh became an object of careful physiological study when its diagnostic importance was pointed out by Erb and Westphal.

One of the most important additions to our knowledge of the phenomenon was made about two years ago by Drs. S. Weir Mitchell and Morris J. Lewis,² who, directing their attention to a phenomenon first pointed out by Jendrassik,³ showed, in a series of carefully conducted experiments: (1) That the so-called knee-jerk can be increased by volitional acts directed to other parts of the body; (2) that volitional reinforcement lasts for an appreciable time after volition ceases; and (3) that continued violent muscular acts at last enfeeble the knee-jerk, and this enfeeblement lasts for an appreciable time.

These conclusions suggested the importance of studying the exact relations in time between the knee-jerk and the reinforcing act since we might reasonably hope to obtain in this way some insight into the nature of the mysterious processes having their seat in the central nervous system; and the object of this communication is to present to the Academy a preliminary report of the results of some experiments recently made in the physiological laboratory of the Harvard Medical School by Dr. J. W. Warren and myself with the hope of throwing light upon this subject.

A detailed description of the apparatus used need not be given in this connection. Suffice it to say that the blow upon the ligamentum patellæ was delivered by a light hammer, (Fig. 1, H) fixed upon a splint-like covering enclosing the lower leg. By this arrangement a certainty that the hammer always struck the same point during each experiment was secured. The force of the blow was regulated by the tension of a spiral-spring S, which drew the hammer toward the knee when it was released by the breaking of an electric current controlling a magnet, M, also attached to the covering of the leg. The straps B B served to secure the apparatus to the leg, and the rings L L to suspend the leg from the ceiling as shown in Fig. 2.

The individual to be experimented upon lay upon his right side, with the left knee slightly bent (Fig.

2), and the internal condyle of the left femur resting upon a fixed support, the position being essentially the same as that adopted by Lombard.⁴ The weight of the lower leg was borne by a cord hanging from the ceiling and fastened to the splint-like apparatus on the leg. The lower leg was thus free to swing in a horizontal plane round the knee-joint as a pivot, and its movement, reduced by a system of levers to one-sixth of its extent, was recorded by a pen (P) upon the smoked surface of a cylinder revolving once an hour. A pendulum myograph (D) served to break two electric circuits as it swung by striking against two keys adjustable at various points in its course. One of these circuits controlled the magnet holding up the hammer at the knee, and the other an electric bell (B), a stroke of which, on the breaking of the circuit, was the signal for the reinforcing act. Thus, by varying the position of the keys, it was possible to secure any desired interval from 0.0" to 0.5" between the reinforcing act and the knee-jerk. Where longer intervals were required, a pendulum vibrating more slowly than that shown in the figure was employed.

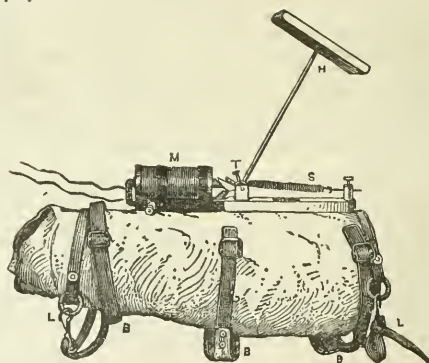


Figure 1.

The reinforcing act was a short, vigorous, clinching of the right hand upon a piece of wood, shaped somewhat like a tuning-fork, and furnished with metallic tips so adjusted that a slight pressure would bring them into contact, and thus close the same electric circuit that was opened when the bell was struck. As this circuit also included a Depriz signal-magnet writing upon the smoked surface of the pendulum myograph, a record was obtained with each experiment of the reaction-time of the individual to an auditory impression.

This reaction-time, of course, includes a centripetal, a central, and a centrifugal portion, and as the total duration was liable to considerable variation, and as, moreover, it was impossible to say in advance which portion of the reinforcing act would have the greatest influence upon the knee-jerk, it was decided to regard the stroke of the bell as the zero point of the reinforcing act, and when this point coincided in time with the blow of the hammer upon the ligamentum patellæ, the interval between the reinforcement and the knee-

¹ Read at a meeting of the National Academy of Sciences at Washington, April 17, 1888.

² Physiological Studies of the Knee-Jerk, etc. The Medical News, Feb. 15 and 29, 1884.

³ Deutsches Archiv für klinische Medizin, Vol. XXXIII, p. 176.

⁴ Is the "knee-kick," a reflex act? Am. Journ. of Med. Sciences, January, 1887.

The Variations of the Normal Knee-Jerk. The Am. Journal of Psychology, Vol. I, p. 1.

jerk was called zero. The object of the investigation was, therefore, to ascertain how the extent of the knee-jerk would be affected by varying the interval of time at which the blow upon the ligamentum patellæ followed the signal for reinforcement. No experiments were made in which the blow preceded the signal, since it would be difficult, after receiving the blow, to wait for the auditory signal before giving the reinforcing act.

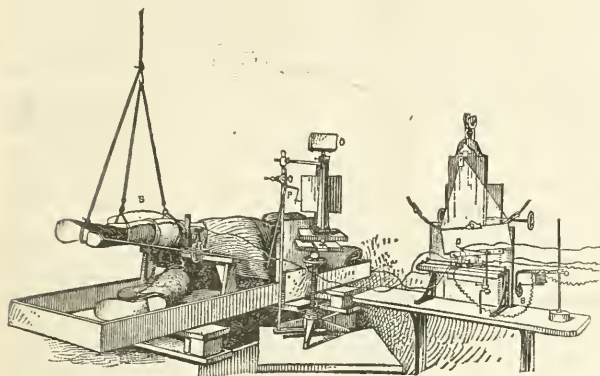


Figure 2.

Each experiment lasted, as a rule, about one hour. During this time several series of observations were made, each with a different interval between the bell-signal and the blow. Each series was divided into two portions, in the first of which there was no reinforcing act, and the knee-jerk was regarded as "normal," while in the second the individual responded to the bell-signal in the above-mentioned manner. The difference between the average extent of the knee-jerk in the first and second portion of each series was called the *special* reinforcement for the interval corresponding to that series, and the difference between the extent of the knee-jerk in the second portion of each series and in the first portion of *all* the series in the same experiment was called the *general* reinforcement for the same interval.



Figure 3.

Experiments were made upon four different individuals with the same general results in each case. The

nature of this result may be best understood by an examination of the curve shown in Figure 3, constructed from the record of 551 normal, and 624 reinforced knee-jerks in the same individuals. In this curve the abscissas represent the intervals between the bell signal and the blow, and the ordinates the difference between the "normal" and the re-inforced knee-jerks. Positive ordinates indicate an increase, negative a diminution of the knee-jerk.

The figures at the left of the curve show in millimetres the absolute amount of increase or diminution. The dotted curve is the curve of *special* reinforcement; that is, it represents the average difference between the reinforced knee-jerk and the *special* normal of that series, while the full curve is the curve of *general* reinforcement representing the average difference between the reinforced knee-jerk and the general normal of the experiment. Both curves follow, it will be observed, the same general course, and show clearly that if the blow follows the signal at an interval not greater than 0.4" the reinforcing act increases the extent of the knee-jerk. If the interval exceeds this amount a diminution of the knee-jerk results. If, however, the interval is prolonged to 1.7" the reinforcing act is without effect upon the knee-jerk. To express the same conclusion in other words, we may say that, when by a brief act of volition the muscles of the forearm are innervated, the spinal cord is thrown into such a condition, that that portion of it which is concerned in the production of the knee-jerk is for a short time in a state of exalted activity which is succeeded by a period of depression and then by a slow return to the normal state.

We thus find the activity of one set of nerve centres serving first to exalt and then to depress the activity of a neighboring set. Without speculating upon the nature of the processes thus reacting upon each other it may be well to point out that we have in this alternating action a phenomenon which cannot fail to throw light upon the nature of "inhibition" and destined perhaps, when fully understood, to establish the interference theory on a firm basis.

In this connection also, should be noted the observations of Meltzer on the inhibition of the peristaltic movements of the oesophagus by a rapid succession of movements of deglutition.

It is evident that a wide field of research is open and that the various modes of activity of the central nervous system should be studied with reference to their effect upon the knee-jerk, and it is not too much to hope that careful experimental work directed on these lines will dispel a portion of the mystery which now surrounds the function of the nerve-cells.

— By the latest statistics, there are 11,997 physicians in France. About one-fifth practice the new dosimetric (alkaloidal) treatment, one-tenth are homœopaths, and about one-twentieth hydropathists.

PNEUMOTHORAX, WITH AUTOPSY, IN A SUBJECT WITH EXTREME RETRO-LATERAL CURVATURE OF THE SPINE.¹

BY HORACE E. MARION, M.D.

MARCH 28, 1886, I was called to see C. A. N., a clerk, age forty-three. He has angular postero-lateral curvature of the spine, supposed to be from injury in infancy.

On the 24th (four days before), while at work at his desk, and after partaking of a moderate lunch, he was attacked with a severe pain piercing his right lung. (The curvature has its convexity to the right.)

He got up, moved about the office, and after a short time resumed his work. On retiring that night he felt chilly, but made but little account of it; indeed, he went to town next day, and worked at City Hall all day. The day following he remained at home, but on Saturday (27th) he worked all day, and in the evening attended a Masonic meeting.

I found him (28th) sitting in the bed, suffering from such severe pain that he was unable to lie down. Pulse 90 to 100, temperature 101°. No cough, hurried and shallow respiration. Flatness at base of right lung (the chest is so elongated antero-posteriorly that the dullness may have been natural). The chest is extremely asymmetrical. Friction-murmurs in axillary line, about the sixth rib.

April 5th. Temperature and pulse have remained about the same, with relief to the severe pain. Pulse 90 to 100, temperature 99° to 100°. Friction-murmur has been very distinct along the fifth and sixth ribs. Yesterday, that is, a little more than ten days from the first symptoms of pain, while drinking milk, some went, as he said, the "wrong way," causing him to strangle, cough, and vomit. To-day, examination shows tympanic resonance over the greater portion of the right chest, metallic tinkling, amphoric respiration and voice, with also succussion-sound. Much distressed after lying in one position for any length of time, or after sleeping.

April 7th. No special change. Friction-murmur can still be heard. Severe pain after sleeping, or in attempting to change position, extending to back and shoulder. Pulse 90 to 110, temperature 99° to 102°.

April 8th. Dr. F. J. Knight saw him in consultation. He found pleuritic friction, effusion, and air within the chest; as he expressed it, an unusual combination in acute pleurisy, and one not easily accounted for.

April 12th. Fair night, but complaints of pain in back, that his back is broken in two; somewhat delirious. Respiration 44, face puffy, skin moist and slightly cyanotic. Aspirated, removing three and one half pints of offensive pus; during the escape of the last half pint, air escaped through the tube with considerable force.

April 13th. Had a comfortable night after 12 o'clock. An hour after aspiration he had a chill, and his temperature reached 104°, followed by profuse perspiration. Has no pain, and feels much better. Amphoric breathing and metallic tinkling.

April 16th. No special change, except that now he tastes the offensive pus when he coughs. The odor is noticeable in the room.

April 17th. Made a permanent opening, removing about three pints of extremely offensive pus. In-

serted drainage-tube, and dressed with bichloride gauze.

April 18th. Washed out the chest with solution bichloride, 1 to 3,000, and dressed with antiseptic gauze.

April 27th. Since the permanent opening the temperature has been but once above 99°, most of the time 98½°. The pulse has remained frequent, about 100. Respiration from 30 to 35 in the minute. Removed the tube.

May 29th. Still discharging; can easily introduce bougie within the chest. Respiration good in front and back: flatness below the level of the opening. Coughs a good deal. During the past month the temperature has ranged from 98½° to 100°. Pulse and respiration always accelerated.

June 1st. Has been out when the weather was fine.

June 7th. Opened an abscess below and in front of the original opening, with which it is connected.

June 13th. His condition not improving satisfactorily, and after counsel, gave ether and enlarged the opening into the chest. No pus was found. Drainage-tube left *in situ*.

June 15th. Pulse 120, temperature 104°, respiration 30. Some pain on sneezing, taking a long breath, and in gaping. Coughs, and raises offensive matter on rising in the morning. No appetite. Almost no discharge from the side.

June 21st. For the first time, seems to feel better; temperature and pulse normal. No discharge.

June 23d. No discharge. Tube left out. Still expectorates offensive pus. A few riles, moderately coarse, can be heard just beneath the clavicle.

June 26th. Considerable offensive discharge from the sinus.

June 28th. Still discharging large quantities of offensive pus from the side. Washed out the chest and re-introduced the tube.

July 15th. Still coughs a little, and expectorates a little purulent matter in the morning. Tube out. Can easily pass bougie into the chest.

From this date he improved constantly, though slowly, until quite recovered, so as to resume his work about the middle of September. The opening in his side did not close until about the first of October.

From this time until June 1, 1887, I saw him frequently, but not professionally. His widow informs me that: He was able to attend to his regular duties at City Hall all the time; that he was quite well during the winter. In January he suffered from "teeth-ache," for which he consulted a dentist and had some teeth extracted, with no relief to pain. Many of the teeth became loosened, but did not decay. Complained of severe pain of his right shoulder and back at times. In February, the wound in his side reopened and discharged a little thin, sero-purulent matter, and remained open ever after, except during July and a part of August.

In April and May, had an attack of what passed as dyspepsia. He was thought to have lost flesh and strength ever after February, when the wound reopened. About this time, he began to have night-sweats more or less constantly. His cough was slight, never troublesome, but he never was a long time without some cough, although he made no account of it.

June 1, 1887. I was again called to see Mr. N., on account of a painful swelling just below knee and to the inner side of leg. He was at his desk, writing;

¹ Read before the Boston Society for Medical Observation, December 5, 1887.

said it caused no pain unless he moved the leg. The irregular, cord-like feel, its depth, and the cellular tissue not being involved, suggested phlebitis. He was urged to take his bed, and a bandage was applied.

June 6th. He took his bed three days ago. Obligated to keep the leg in one position; cellular tissue becoming involved.

Physical examination of lung gives no new evidence. "Pistulous track" to what seems to be a circumscribed pleural cavity, still open. No cough to speak of.

August 20th. Since last notes, now more than a month, he has remained in bed all the time. For the first three weeks in June he did his writing (clerk for the assessors) in bed. Has lost flesh and strength. Temperature scarcely ever above 100°. Pulse 100 to 110.

Three pyæmic abscesses have been opened; namely, one below and one above the right knee and one on anterior part of left leg. Another over and just above the left trochanter should have been, but he would not allow it. Complains frequently of intense pain in right shoulder and in the back, which he says is breaking-in-two.

For past three weeks at least, has remained with his right thigh flexed in the pelvis. For past five weeks the opening into the chest has been closed or healed. Has had scarcely any cough until last night, when he coughed up a third of a teacup of offensive pus.

After a great deal of coaxing, I opened a fluctuating tumor just to the right of the fourth lumbar vertebra. About a pint of offensive pus was evacuated, and a drainage-tube introduced, extending along the crest of the ilium to its anterior spinous process.

September 4th. He consented to-day to have the tumor over the trochanter aspirated: one-half pint of matter was removed. Gradually losing ground.

October 17th. Has failed more rapidly lately. To move him has caused excruciating pain. For days past his death has seemed imminent.

This morning, not having syringed out the pus cavities for the past two mornings on account of his extreme weakness, I got him up on the side of the bed as usual and commenced; the first water thrown into the opening low down in the back seemed to strangle him and I desisted. I got him back into the bed bolstered up with pillows, but he died within an hour.

Autopsy, twenty-four hours after death. Right postero-lateral curvature of spine. Emaciation extreme. Rigor mortis marked. Right thigh flexed at an angle of 50°, with horizontal plane of body. Thin pus exuded from an opening just above right knee, at inner side of right calf, over middle and front of left tibia, over left trochanter, on a level with and to the right of fourth lumbar vertebra and at angle of right scapular. The curvature is such that the right scapular rests apparently upon the top of right chest. Over the angle of the curvature is an enormous bed-sore fully six inches in diameter, in which are exposed muscles, facia, and bone.

On removing the sternum and costal cartilages the left lung collapsed. The heart, a little further to the left than normal, was normal in size and general appearance. The pericardium contained about forty grammes of serum. Heart substance firm and valves normal. The coronary arteries much enlarged and atheromatous; atheromatous changes had also taken place in the aorta. The left thoracic cavity was

about three-fourths larger than the right. The left lung was vicariously enlarged and free from disease. The right lung correspondingly small was bound to the lateral aspect of the chest wall by a firm band which completely enclosed a pus cavity about four by six inches in size. Lung tissue, except for about an inch around this cavity was normal.

Nothing remarkable about the stomach, intestines or bladder. Spleen much enlarged, soft and friable. Left kidney twice the size of right, capsules easily removed, hyperæmic, but otherwise normal save at the upper convex border of the right, where small pus cavities had begun to form.

Liver was in size normal, but somewhat fatty. At the greater extremity or border, a change similar to that of the kidney had taken place. The necrosis of the liver and kidney was immediately in contact with a pus channel, to be described. Removing all the organs, it was easy to demonstrate a sort of covered way extending along the chest wall downwards, inwards, and backwards, from the opening between the eighth and ninth ribs at angle of scapula to the angle of the curvature and to the bottom of pus-cavity. The angle of curvature was one of about 25° or 30°. The inflammatory tissue could be easily removed, leaving bare the vertebra at the angle of curvature, exposing also the aorta in its course, which, by the way, passing over the convexity of the angle, lay within less than an inch from the opening into the chest.

This pus-channel continued along the vertebra behind the liver and kidney, as before alluded to, to the right iliac fossa as far as Poupart's ligament, and backwards to middle of sacrum. The opening near the fourth lumbar vertebra communicated with the iliac fossa along the crest of the ilium. The inner aspect of the ilium was entirely denuded of periosteum, as was a portion of the sacrum.

I have reported the foregoing case inasmuch as it presented a few points of interest. I have designated it a case of pyo-pneumothorax, although I am not sure that at first it was not a case of hydro-pneumothorax. In both, the physical signs would be quite similar.

The sequence of events was as follows: Acute pleuritis, not wholly incapacitating the patient for work, followed by an effusion within four days, or prior to my first visit. One week later, or two days from the initial pain, there was positive evidence of air within the pleural cavity. Air was detected soon after his severe fit of coughing and strangling.

On aspirating the chest one week later, or seventeen days from the initial pain, the fluid proved to be purulent and offensive.

I would remark here that the deformity rendered it impossible to say exactly whether the heart was in or out of its normal position, and to fix definitely the line of fluid dulness. Five days after aspirating, or twenty-two from the attack, the permanent opening was made, with marked improvement to all his symptoms.

In ten days after introducing the tube it was removed, as everything had been absolutely dry for several days. This was thirty-two days from the attack. In thirty-four more days, or sixty-six from the attack, the opening was enlarged and tube left *in situ*, although the cavity contained no pus. In ten days more the tube was left out, but re-introduced at the end of five days, and soon discontinued altogether. For three months longer, or one hundred and seventy-five days from the first, the opening into the chest remained

open. Then followed five months of comparative good health, the opening into the chest being closed, and he able to attend to his work.

In a few days less than a year from his first attack, the side opened spontaneously at the place where the original opening had been made. Ever after this he lost flesh and strength, and the side remained permanently open, excepting about five weeks.

At the end of fourteen months he began to develop pyamic abscesses, of which five, at least, were opened, one communicating with the pus-cavity in the iliac fossa, and this, in turn, with the pleural cavity. He died of exhaustion, hastened, perhaps, a few moments by my endeavor to make him more comfortable, in one year, six months, and twenty-four days from his first attack in March, 1886.

One point of interest is the cause of the pneumothorax; if, as I have already intimated, a rent in the pleura and lung was caused by the coughing and strangling, and through this rent air entered the pleural cavity, it may be looked upon as traumatic, and liable to occur at any time. On the other hand, if the rent in the lung was caused by the nature of the pleuritis or the character of the contained fluid, it renders the case more open to speculation.

We take it for granted and self-evident that pneumothorax is a secondary affection, inasmuch as there must have been severe injury or lesion to the pleura to allow of air entering the pleural cavity.

Pneumothorax, pure and simple, is but rarely met with, except for a short time, or in connection with fluid. This condition was recognized as long ago as the time of Hippocrates, and the physical sign caused thereby, namely, succussion, is often designated the Hippocratic sign.

Laennec divided pneumothorax into three varieties: First, essential pneumothorax results from spontaneous formation of gas in the pleural cavity; second, pneumothorax from purulent decomposition of the liquids effused into the pleura; third, pneumothorax from perforation due to rupture of the pleura, or to an accidental opening by which atmospheric air or gas from the lungs is introduced into the pleural cavity.

Notwithstanding this distinguished authority, it has been satisfactorily demonstrated that the pleura cannot secrete air or gas. As to the second variety, namely, the decomposition of the effused fluid, although at one time supported by such men as Hughes Bennett, Townsend, Wunderlich, and Jacquot, it is difficult to understand how this can be, as the presence of air is the *sine qua non* of decomposition.

We are, therefore, left to accept the third variety; namely, the perforation of lung tissue. This may be traumatic, or it may be due to a pathological process going on in the lungs, pleura, or some adjacent organ.

That pneumothorax is not an infrequent occurrence in phthisis pulmonalis, all will agree. This not only from our own individual experience, but all observers state that phthisis is by far the most frequent cause of pneumothorax; Walshé says ninety per cent. Fernet² states that pneumothorax results in nine-tenths of the cases from some of the forms of pulmonary phthisis. Fraentzel³ says, from his own observation, that 90 out of 96 cases of pneumothorax are produced by vomica on the surface of the lung in the course of caseous pneumonia.

Lansier shows, in his frequently quoted table, the relative frequency of the principal causes of pneumothorax in 131 cases:

Pneumothorax with phthisis	81.
" " empyema	29.
" " gangrene	7.
" " pulmonary empyema	5.
" " apoplexy	3.
" " hepatic fistula	2.
" " hydatids	1.
" " hæmorrhage	1.

Here empyema takes second rank, which seems to be in keeping with common experience.

If this be the cause in the case I have reported, that is, if mine was a case of purulent pleuritis before the introduction of air, then it is not a particularly rare case. On the other hand, if it was a case of simple acute pleurisy with effusion, and the early introduction of air by traumatism or otherwise, then it may be classed as an unusual case.

Concerning the last illness, which may be considered as a sequence of the first, one is curious to know whether the termination would have been different had he not been a victim of spinal curvature; in other words, how much did the curvature of the spine contribute to the fatal termination. I regret that the vertebrae were not removed or examined more carefully *in situ*. Certainly, the point of curvature was and had been bathed probably in or covered by a pus-secreting surface for more than a year.

The tissues over the vertebrae, as well as the inflammatory products, were very easily removed, but I cannot say the bones were roughened in evidence of necrosis. The pyogenic process having dissected off the attachments of the diaphragm to the spine, the descent to the pelvis behind the peritoneum was easy. Certainly, the route from the bronchi and opening at the angle of the scapulae to the opening near the fourth lumbar vertebra was sufficiently circuitous to be, at least, unique.

A CASE OF ABSCESS OF THE CEREBELLUM FROM EAR DISEASE.¹

BY J. ORNE GREEN, M.D.

PATRICK F., aged thirty-six. Mother died insane, father now in Danvers Asylum, also insane. No history of syphilis. He was kicked by a horse in right temporal region fifteen years ago; some brain symptoms, probably concussion, from which he soon recovered. As result of this kick right auricle is adherent to scalp by cicatricial tissue. Ever since this injury has had an otorrhœa on right, moderately profuse, but unattended by pain or external swelling.

The last five months has complained much of his head, especially in right temporal region. Entered Boston City Hospital, service of Dr. Sumner, in March, 1888, with partial paresis of all branches of right facial nerve of only a few days' duration, with head-ache referred to right temporal region; vomited more or less daily, especially at night, and apparently without cause. Intellect perfectly clear, appetite poor, bowels not constipated. Physical examination revealed nothing except the paresis of right facial, and the otorrhœa. The paresis entirely disappeared without treatment in four days.

I saw him on March 17th, and found the right meatus completely filled by polypoid growths, and the

² Nouveau Dict., Vol. xxviii.

³ Ziem. Cyc., Vol. iv.

¹ Read before the Boston Society for Medical Improvement, April 23, 1888.

next day, under ether, removed four large polypoid masses, one of which was attached to the posterior wall of meatus, and the rest apparently arose from the tympanum. Rough and probably carious bone was detected in the posterior and upper part of the tympanum.

He expressed himself as much relieved after the operation, and the headache and vomiting ceased entirely for two or three days.

The stump of the polypus was treated by spt. vini, and gradually was shrivelling up, and the ear was kept clean by antiseptic syringing. The tuning-fork on vertex entirely in right ear; no tenderness or swelling over mastoid. The headache and occasional vomiting soon returned, and up to his death were intermittent, continuing for twenty-four to forty-hours, then ceasing, only to recur again after an intermission of one or two days. Slight delirium was shown on one or two occasions about a week before his death, but was only momentary. In reply to questions he almost always said he felt "first rate." From the time of entering the hospital he always laid quietly, indifferently on the two sides, with his head covered in the clothes, and in a slightly somnolent condition, from which he was easily aroused. Sitting up immediately caused great vertigo, and if this position was maintained for several minutes vomiting resulted. On being asked to point to the seat of pain in the head he always placed his whole hand over the temporal and parietal regions. There was a slight sluggishness of movement in the right pupil, and during the last week of life marked constipation. At no time was the pain severe enough to require opiates, and as antipyrine and other remedies and the ice bag had been tried without any effect, and as I believed the ear was the cause of his symptoms, no internal medication was used except calomel for the constipation.

Twenty-four hours before death he became mildly delirious, then occasionally screamed out as from sharp pain, became unconscious, and within an hour afterwards died quietly. The most continuous pain and most frequent vomiting occurred during those days when the pulse was lowest. The temperature was normal throughout; the pulse varied from 85 to 52.

The autopsy by Dr. Gannett reads as follows:—

"Body small and emaciated. Convulsions of brain markedly flattened; pia dry; dura covering the vertical part of the petrous portion of right temporal, over an area of the size of a five cent nickel surrounding the foramen for the seventh nerve, was thickened and opaque, and of a yellow color, and adherent to the pia of the right half of the cerebellum, corresponding to this position. In the cerebellum, corresponding with this part, was a cavity, size of an English walnut, with smooth walls, and filled with a greenish, very offensive pus. The remaining portions of brain showed nothing remarkable.

"On removal of the right tympanum the tympanic cavity was found to contain in one portion, a reddish tissue, which was adherent to the walls. Just behind the tympanum was a cavity in the bone, size of a filbert, one part of the bony wall of which was carious, and adherent to the inflamed portion of the dura already described. The trabeculae of the mastoid cells had in great part disappeared, the cavity containing a soft, grayish, cheesy material with a foul odor.

"The organs of the thorax and abdomen showed no appearances worthy of special notice.

"Diagnosis: acute, circumscribed internal and external pachymeningitis; acute, circumscribed septo-meningitis; abscess of the cerebellum; flattening of the convolutions of the brain; dryness of pia; chronic middle-ear catarrh; necrosis of the mastoid cells, and of the petrous portion of the temporal bone."

In view of recent successful operations on brain-abscesses, the case is of interest. The diagnosis in this case cannot be said to have been fully determined, although abscess of the brain seemed most probable from the long continuance of the otorrhoea and the existence of caries in the tympanum, conditions which are among the most common causes of brain-abscess, and also by exclusion of all symptoms pointing to meningitis or disease of the sinuses. All localizing symptoms were, however, entirely wanting; facial paralysis is such a common symptom accompanying inflammation of the tympanum, especially caries of that cavity, which was found at the time of operation in this case, that it was of no value in settling the seat of the brain-disease. The patient himself always referred his pain to the parietal and temporal regions, and the only possible localization of the abscess was by probability from our knowledge of pathology.

If the exact condition of the petrous bone, and the fact that the posterior surface of that bone was carious, could have been determined, the cerebellum would have been suspected to be the seat of the disease, for it is quite well established that, in most cases, disease of the posterior surface of the petrous bone is associated with abscess of the cerebellum, and disease of the upper surface of the petrous bone with abscess of the cerebrum. Disease of the upper surface of the bone is, however, much more common than disease of the posterior surface, and this, combined with the fact that in this case the patient referred to the parietal and temporal regions as the seat of pain, would have led me to expect abscess of the cerebrum, rather than the cerebellum.

Vertigo is found in both cerebellar and cerebral disease, although more common and more severe in cerebellar disease; it was a prominent symptom in this case, but it is also very common from any tympanic condition which produces intra-labyrinthine pressure, and here not only was the tympanum filled with the stumps of the polypi, which might easily produce labyrinthine pressure, but syringing of the meatus always produced a certain amount of dizziness, even when very gently done.

Anatomically, the bone affords an instance of a very unusual place for caries to penetrate the cranial cavity. An extension of caries to the posterior aspect of the petrous bone commonly occurs along the internal auditory meatus, the aqueductus vestibuli, or the petroso-mastoid canal, all of which furnish direct communication from the labyrinth or mastoid to the posterior surface of the bone. In this case, however, the carious opening, about 10 mm. in diameter, was midway between the lateral sinus and the opening of the aqueductus vestibuli, and was undoubtedly an extension from the mastoid-antrum directly backwards. The freedom of the labyrinth from inflammation was established during life by the fact that the tuning-fork on the forehead was heard entirely in the diseased ear.

Clinically, the case affords another demonstration of the slight symptoms often found with brain-abscess, and also of the insidious way extensive disease of the

bone may go on without offering any symptom externally, except an otorrhoea.

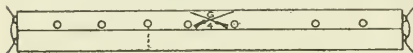
The possibility of evacuating, draining, and healing an abscess of the cerebellum has not, I believe, yet been demonstrated, although a number of successful operations on the cerebrum have been reported. The cerebellar operation offers unusual difficulties in that it is either necessary to enter the skull below the superior curved line of the occiput in order to avoid the large sinuses, or else to pass through the tentorium from above, with the risk of imperfect drainage.

Hospital Practice and Clinical Memoranda.

CASE AND CONTENTS FOR USE IN RENDERING FIRST AID TO THE INJURED ON THE FIELD OF BATTLE.

BY W. THORNTON PARKER, M.D., NEWPORT, R. I.
Late Acting Assistant Surgeon, United States Army; member of the
St. John's Ambulance Association, England.

In the "Reference Hand-Book of the Medical Sciences," (p. 722, Vol. III) is to be found an article by Surgeon Woodhull, U. S. A., describing a Soldier's and Sailor's Clothing-Case invented by me in 1885.



The case is made of light canvas or waterproof cloth, and when completed it weighs but a fraction of the weight of the average knapsack. It is manufactured as follows:

A strip of cloth four feet long, or four feet six inches is a better length, by sixteen inches wide, is folded to make a pocket six or eight inches deep. This is done by making the covering flap lengthwise and dividing it into three pockets by a few stitches across at a third of its length, making three equal divisions. Six buttons hold the flap in place. Loops at either end enable the soldier to wear it secured at the ends without it being rolled in blanket or overcoat. This case will hold two pairs of drawers, two flannel shirts, two pairs of stockings, towels and other extra pieces of clothing, and the "soldier's book."

It is useful in that it can be worn for days without giving fatigue, and the weight is so evenly distributed that the soldier does not suffer from carrying it or feel disposed to throw it away. Upon reaching camp the blanket can be unrolled and the case hung up or thrown in the corner, the clothing remaining in the case clean and undisturbed. The case will be found useful as a pillow when folded. When the clothing is rolled loosely in the blanket only, upon reaching camp the blanket is needed and the contents are likely to be scattered about the tent and soiled or ruined with mud and rain.

This clothing-case does away with the necessity of knapsack or clothing-bag, and can be manufactured easily and quickly, and at a trifling expense compared with the cost for the manufacture of knapsacks. The expense saved by the use of this case would be very great indeed in the equipment of even one regiment. No clothing-case could be more easily carried than one suspended from the shoulder. It can be used at

all times, even in action, and would then offer considerable protection of the vital organs against musket balls.

It is intended that this case be worn in the rolled blanket suspended from the left shoulder, giving the right arm full play and allowing, as we have seen, the utmost freedom in the performance of the most important exercises of the manual of arms.¹

Such is the description of the case as originally invented for the use of the soldiers and sailors in general. In preparing a work on "Military First Aid to the Injured, and Stretcher and Ambulance Drill," it has occurred to me that for Red-Cross Sergeants on the field no better case could be devised for carrying the necessary instruments and appliances to be used in first aid. The knapsacks, bags, and haversacks in use in the hospital corps of the European and American armies are clumsy and very tiresome. The constant stooping and rising positions assumed by the medical attendants in ministering to the sick are made doubly irksome by the clumsy and heavy bags and haversacks suspended by a strap which often cuts deeply into the shoulder of the wearer. I have devised a case for a Red-Cross Sergeant made in the same fashion but of different material than that used by the soldiers and sailors, who wear theirs inside the rolled blanket. This case is to be made of brown waterproof cloth secured at the right side by two strong straps. When required for use it can be quickly unslung and opened and as quickly closed and slung into position again. The contents are as follows:

One Hypodermic needle and rubber-stoppered bottle containing Magendie's solution, morphia. (Tiemann & Co.); one-half pound Lawton's absorbent cotton in a flat package; six woven bandages, antiseptic, (Tiemann & Co.); six first aid triangular bandages, (Tiemann & Co.); one case isinglass plaster; one inch tape; one package in flat wooden box, surgeon's adhesive plaster; three sponges in waterproof bag; two tourniquets, held (Tiemann & Co.); two tourniquets, Eschsch. (Tiemann & Co.); one tin box wax candles and matches, or folding lantern; one Red-Cross Sergeant's dressing case, (Tiemann & Co.)

This case will be found of great practical convenience and can be furnished at reasonable expense and much below the cost of Hospital knapsack bags, and haversacks already in use.

A very good field stretcher can be formed at once with three of these cases, either full or empty, secured upon two rifles. The ends of the cases being folded over the rifle stocks, and secured beneath. Number one holding the butts of the rifles as he would hold the stretcher handles, and number three holding the muzzles.

TWO CASES OF CANCER.

BY H. H. A. DEACH, M.D.,
Visiting Surgeon, Massachusetts General Hospital.

CARCINOMA OF LEFT BREAST: A NEW AND EFFICIENT MATERIAL FOR DRAINAGE TUBES.

A WOMAN, fifty years old, in good health, has noticed a bunch in left breast for some ten months. Skin adherent over tumor, which is movable on the parts beneath. A few glands, the size of beans, felt in the axilla. Operation done; removal of whole breast, with a dissection of the axilla. Previous to

¹ Read before the Boston Society for Medical Improvement, April 23, 1888.

² Journal of the American Medical Association, March 6, 1886.

the operation, for several days, breast and axilla, whole side of chest, and inner side of arm were scrubbed with a nail-brush and a solution of phenyle ($\frac{1}{100}$), and then with corrosive sublimate ($\frac{1}{1000}$), the axilla being shaved clean before the scrubbing. Boiled silk sutures, kept in strong alcohol and soaked in corrosive sublimate just before the operation, were used, and juniper oil catgut ligatures for a few bleeding vessels. The drainage was maintained by means of quills at either end of the incision.

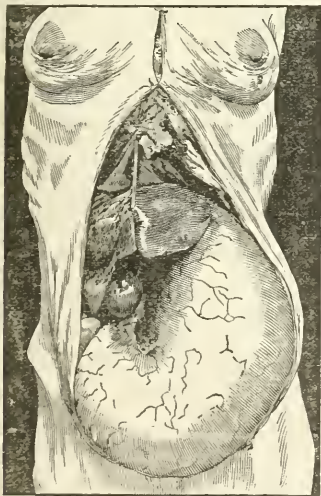
The first and only dressing was done seven days after the operation, and the wound found healed solidly. The stitches were removed, together with the drains. It was found that the tubes had remained patent, clean, and unclogged by discharge of blood or serum. The tube-holes remaining were small, and seemed to heal quicker than the opening from which a rubber drain was removed in a breast case done the same day. The tube allowed of greater firmness in the application of the dressing, resisting compression more successfully than rubber tubing.

The patient was discharged from the Hospital at the end of fourteen days.

[NOTE.—The object of reporting so common a case as cancer of the breast was to record the use of a new and valuable means of drainage applicable to all cases where rubber tubes are used.]

CANCER OF THE PYLORUS, WITH GREAT DILATATION OF THE STOMACH.

The patient, a woman thirty-seven years old, had excellent health up to within one year. Since that time has lost flesh and strength, has vomited considerably, especially after meals. Has vomited no blood of bright color. Vomitus coffee-ground, mucus-like



material. Has noticed swelling of abdomen for two months. Bowels constipated; no cough. She was pale and extremely emaciated. Abdomen distended unequally, more on the left than on the right side, presenting a tumor that extends from beneath the left costal cartilages down on left side of abdomen, and across below umbilicus to right iliac fossa, where a

hard mass can be felt about the size of a fist, which is slightly movable and flat to percussion.

The patient was unable to take much nourishment, and failed rapidly. Eight days after entrance, temperature subnormal; only once above normal.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

CHARLES F. STROSO, M.D., SECRETARY.

MEETING December 5, 1887. DR. C. F. FOLSOM in the chair.

DR. H. E. MARION read a paper upon

A CASE OF PYO-PNEUMOTHORAX, WITH AUTOPSY, IN A SUBJECT WITH EXTREME RETRO-LATERAL CURVATURE OF THE SPINE.¹

DR. A. N. BLODGETT read a paper entitled

TWELVE YEARS IN THE DEVELOPMENT OF A CASE OF MORAL IMBECILITY.²

DR. HENRY J. BOWDITCH said that the case was a painfully interesting and very important one. He thought that a grave responsibility rested upon all persons actually cognizant of the facts in regard to the questions of allowing such a patient to be at large in any community. The youth might kill any one present at this meeting but no jury would ever convict the assassin of murder, after hearing the details of his life and gradual development in normal obliquity, given by the reader.

DR. FOLSOM, spoke of the case of the notorious Jesse Pomeroy and said that the latter case was not one of moral imbecility. At the time of Pomeroy's sentence to be hanged only one definite diagnosis of the disease was made, namely, marked epilepsy, which, however, has not been justified by the subsequent history of the case. Pomeroy had no striking mental or moral defect or perversion except a love of torturing primarily, animals, and later children, for the gratification which their suffering gave him. The case was, in his opinion, similar to that of Piper, who had intercourse with dead or dying women, and to those of others who had intercourse with young girls or mutilated women for the added sexual gratification produced by the contortions induced by the sufferings of their victims. The cases were not many in which this striking perversion of character could properly be said to so far exceed the limits of self-control as to amount to real moral insanity or strictly speaking, one of its divisions, namely, *folie impulsive*. Dr. Folsom considered the Pomeroy and the Piper cases both in the same category and as not constituting real insanity or involving irresponsibility. At all events, there was no moral imbecility in either case.

In regard to the case reported by the reader, Pinel has remarked, and his observation had been verified by subsequent experience, that striking moral perversion had not the same significance in children and youths as in adults and that age and proper discipline often corrected it, while if neglected or treated with weakness and indolence, it developed into actual moral insanity or primary insanity, so called. Dr.

¹ See page 514 of the Journal.

² See page 537 of the Journal.

Folsom thought that the responsibility of allowing such a boy to go at large was very grave. If he were definitely insane, he should long ago have been confined in an insane asylum; if not, then sufficient control and discipline should have been exercised in another way, if need be in an institution of another kind, so as to protect the community and himself against his uncontrolled evil ideas or impulses.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.¹

F. B. HARRINGTON, M.D., SECRETARY.

DR. F. H. WATSON presented a specimen, and said: I have an unusually perfect specimen of tumor of the bladder, which I removed from a patient, a male, thirty-seven, yesterday morning. It is so rare to get this papilloma of the bladder in anything like perfect form that I thought it worth while to show. The tumor was situated above the right lobe of the prostate, and between that and the right ureter. It grew from a pedicle about the width and thickness of the thumb, which was perhaps a quarter of an inch long. The surface of the tumor which was exposed above the pedicle was the size of a small Tangerine orange, the larger portion of which is shown in this first piece which was removed at once. The rest was removed in a fragmentary way, and is shown in this second bottle. Microscopically, it shows a very fine specimen of the villous formation which occurs in these growths. There was no reason to suppose that it was anything but a benign papilloma. It is too soon, of course, to predict anything about the result. Under the microscope, with a low power, I have placed a piece of the growth which shows the villi very well indeed. There was no pain or bladder symptoms.

DR. FITZ: Had any of the villi been removed by the use of the endoscope?

DR. WATSON: The endoscope was not used, because the growth was so vascular that the bladder was filled with clots all the time. The amount was larger than in any case that I have seen that had not been disturbed. And it was not necessary to use the endoscope, because the characteristic bits of villi came away in almost every specimen of urine passed.

DR. BEACH: I have a patient to present to the Society. It is a case of simple amputation of the breast with removal of the glands of the axilla. The interest lies in the matter of drainage, which was by the use of quills. The patient entered the hospital on the first of April, and was discharged on the fourteenth. She had one dressing, eight days after the operation, and the union was absolutely by first intention.²

DR. J. O. GREEN reported

A CASE OF ABSCESS OF THE BRAIN FROM EAR DISEASE.³

DR. JOHN HOMANS showed a cartilaginous sarcoma of the femur, for which he had amputated the thigh. The patient was twenty-five years old.

DR. BEACH reported the case of a patient who entered the Hospital for operative interference for cancer of the pylorus. She was almost mori-

bund when she entered, constantly vomiting, and from the size of the tumor it was fair to infer that secondary deposits had been formed; as was afterward proved at the autopsy.⁴ Dr. Fitz has kindly consented to show the specimen, and I have asked Dr. Newell, who was present and assisted Prof. Bilroth in one of his operations, to show some of the plates illustrating the subject.

DR. FITZ: I was not at the autopsy, but saw the specimen while still distended. It is now smaller than in the original condition. The deformity of the stomach is very well shown in the photograph. It has evidently taken place mainly along the greater curvature. The smaller curvature is not much increased in length. The cause of the distension was evidently to be found at the pylorus, where there was a cancerous stricture, not admitting the tip of the little finger. The disease was located mainly at that point, but along the smaller curvature, in the immediate vicinity of the strictured portion, an enlarged lymph-gland, evidently cancerous, was found, and there were others in the immediate vicinity or behind the stomach. The interest of the case, apart from the enormous distension of the stomach, of course lies in the possibility, in an earlier history of the case, of removing the strictured portion. It seems as if this might have been a good case, if any case of the disease ever is.

DR. O. K. NEWELL: This stomach shows very nicely the way in which the malignant growths of the alimentary canal tend to remain local for a long time. It exemplifies that fact except for the enlarged glands; the growth itself has sharply defined borders. I thought it might be interesting to show the plates of Bilroth's operations. What Dr. Fitz has said about the lesser curvature not having changed, reminds one of what Nussbaum says in regard to the fact that all wounds of the greater curvature are dangerous on account of hæmorrhage.

DR. JOHN HOMANS: I have once seen, after laparotomy, some weeks after, a great distension of the stomach. It seemed to me to be caused by a sort of atony of the bowels. There was no peritonitis, but, on opening the abdomen, after death, the stomach appeared to fill the whole abdominal cavity. There was nothing to be seen but the stomach; none of the intestines. That was the only time that I ever saw the normal stomach so distended. It contained, I think, eight quarts of fluid, and, of course, considerable gas.

DR. FOLSOM: I have two very remarkable composite photographs by Dr. Noyes, of the Bloomingdale Asylum, New York, which I will show. Eight cases of melancholia, and eight cases of general paralysis. I think that either photograph would be sufficient to establish the diagnosis.

DR. F. B. HARRINGTON said: I would like to show some fragments of the temporal bone removed after a compound fracture. A brakeman struck a low bridge, and was brought into the hospital. I saw him about four hours afterward. He was conscious, though stupid; the pupils were normal; there was no paralysis. The injury was to the forehead. There was a small opening through which blood was oozing; there was considerable puffiness, and there was evidently fracture of the bone. It seemed best to enlarge the opening, and this was done. These six large pieces, with smaller ones,

¹ Concluded from page 528.

² See page 546 of the Journal.

³ See page 548 of the Journal.

⁴ See page 549 of the Journal.

were removed. One piece includes a portion of the orbit and the frontal sinns, and considerable bone above. None of these pieces were replaced, because there was considerable oozing, and it seemed wiser to make the effort to stop that and keep the wound as sweet as possible. Therefore it was packed with iodoform gauze, and the man has done exceedingly well. For a few days he had to have the straightjacket, on account of restlessness and not on account of maniacal symptoms. He is now doing very well indeed, twelve days after the accident.

Dr. BEACH: I saw him to-day, and found him sitting up in bed.

AMERICAN MEDICAL ASSOCIATION.
CINCINNATI, OHIO.

SURGICAL SECTION.

FIRST DAY, TUESDAY, MAY 8TH.¹

THE CÆCUM AND APPENDIX; THEIR RELATIONS IN
HEALTH AND DISEASE.

By JOSEPH RANSOHOFF, Cincinnati.

The appendix maintains a pretty regular position in its relation to the cæcum; in most cases it lies behind the latter, and does not project forward. The appendix is supplied with a mesentery, a branch of the peritoneum, which connects it with the cæcum, the last two inches being free and unattached. The fact that the appendix is covered with peritoneum limits the danger of perforation and abscess, on account of the natural tendency of inflamed peritoneal surfaces to adhere. Anatomical peculiarities help us to explain the difference in symptoms of inflammation of this part. If the cæcum be inflamed, the tumor will present in front, if the inflammation is in the appendix it will not be so apparent. Rectal exploration may assist in the diagnosis of the latter condition. The fact that the appendix lies so near the ilium would explain the existence of symptoms of constriction when there is inflammation in this locality. The essayist was impressed with the presence of folds of mucous membrane in the cæcum, which are obliterated, when it is distended, thus favoring the escape of fecal matter into the appendix. It may be concluded that its function is similar to that of the cæcum. As to varieties of inflammation, it may be understood that disease of the appendix is much more frequent, especially in serious cases, than that of the cæcum. Perforation of the cæcum, which is quite rare, may be caused by fecal pressure, or by the presence of foreign bodies. It is, therefore, unreasonable to ascribe all perforations in this region to the appendix alone, although, in the large majority of cases, it alone is at fault. In some cases, owing to a lack of blood supply to the tip of the appendix, it, the tip, will be found gangrenous in the midst of an abscess. This gangrenous portion involves only the tip, while, if any perforation exist, it will usually be found near the cæcal attachment.

What more probable than that an abscess in this region should work its way to the surface, either above or below Poupart's ligament, or should follow the line of an umbilical hernia, as in a case observed by him?

A CASE OF TYPHILITIS AND PERFORATION; LAPAROTOMY; RECOVERY.

By L. S. McMURTRY, Danville, Ky.

Dr. McMurtry was called to see a case in Somerset, Kentucky, on January 26, 1888, with Dr. Perkins, who had been in attendance. The following history was obtained:

The patient, who was a young physician, had been subject to short attacks of colic, accompanied by nausea and vomiting, with pain in the iliac region. There was marked dullness on percussion, and on palpation an induration was perceived over the line of the ureter, giving the impression of obstruction of that duct. Later the swelling of the iliac region increased. Morphia had been used, and laxatives administered to relieve constipation.

When Dr. McMurtry saw the case he recognized a tumor of the caput coli, and an operation was decided on. An incision was made over the median line, when it was found that there was no general peritonitis. The cæcum was drawn to the opening, and the vermiform appendage found normal. Two perforations, as large as silver quarters, on the anterior surface of the cæcum allowed the contents of the gut to escape. These were made elliptical in shape, and closed with silk sutures. The diseased parts were cleaned, a rubber drainage-tube was introduced and the wound closed with silk. The bowels were evacuated on the third day, and convalescence proceeded without the temperature rising above 100°, so that on the fourteenth day the drainage-tube was removed. Opium was used very sparingly.

The reader could find on record only one case of laparotomy for perforation of the cæcum, that done by Regnier in 1886, which terminated fatally. He, therefore, believes his case to be unique.

DISCUSSION.

Dr. EDMUND ANDREWS, Chicago: The important point to know in these cases is when to make a laparotomy. The risks of the operation will not allow the flippant statement that it can be performed with impunity, the dangers seeming to be greater than in ovariectomy. The surroundings for operation are usually not so favorable. If we are certain that an abscess has ruptured into the peritoneal cavity, laparotomy offers the best chances; but he is sure from his own experience that the patient may have some chance of recovery from perforation of this viscus even if laparotomy be not performed.

Dr. S. W. GROSS, Philadelphia: There are certainly a large number of cases of retro-peritoneal abscess that open posteriorly, which do not demand laparotomy; but there are a larger number, in which perforation of some part of the intestine occurs, which will be benefited by operating. For instance, where there is perforation in a case of walking typhoid, laparotomy would be justifiable. If we delay in these cases death is almost inevitable, but we may save some lives by prompt operation.

Dr. NELSON, Connecticut, related a case with iliac pain, obstruction of the bowels, and evidence of abscess, which later pointed in the iliac region. He introduced an exploratory needle, removed the pus, and the patient recovered. He hesitates to perform an operation of such gravity as laparotomy in these cases.

Dr. S. W. WEEKS, Portland, Maine: As to the point of incision for laparotomy, his experience has convinced him that the incision made over the cæcum is preferable to one in the median line. He has found

¹ Continued from page 531.

the appendix to be beneath a point one inch above and one inch to the inner side of the anterior superior spinous process of the ilium.

DR. LEE, Philadelphia: With an extravasation into cellular tissue around the cecum, accompanied by severe pain, we have the indications that laparotomy is required.

In a case of his own he had observed an abscess opening in the inguinal region, through which escaped a lumbricoid worm. The case recovered. The practical question to be considered is this, Shall we interfere after suppurative inflammation is established, or before it occurs in this region? His own experience does not satisfy him that a laparotomy in most cases gives the patient increased chances of recovery.

DR. MOORE, Rochester, N. Y. Is it not the rule that if sufficient local treatment be used almost all cases will recover without operation? In these cases of localized inflammation, we are very apt to find phantom tremor, and we may do our patients inestimable harm by too hasty operative interference.

SECOND DAY. — WEDNESDAY, MAY 9.

INTESTINAL OBSTRUCTION IN ITS SURGICAL ASPECTS,

by CHARLES BINGHAM PENROSE, M.D., of Philadelphia.

Early diagnosis is, in these cases, so important that he advocates an early exploratory laparotomy. Enterotomy and colotomy are not advisable as primary, though they may be performed as secondary operations after laparotomy. He considers a median operation more practicable than one over the region of the obstruction, for the tumor, if one is present, does not always represent the seat of the trouble. Incision of the intestine for the relief of distension is better than puncture, for the reason that the opening made by the former can be accurately closed, while the punctured wound is liable to leak. To find the seat of obstruction, the distended portion of the gut should be followed towards the rectum, the pelvis, or the most congested parts. The intestine should not be drawn through the cut, unless the distension is very great, but manipulation should be carried on as much as possible within the abdomen. Any constriction or opening that has trapped the intestine should be closed before ending the operation.

In cases of obstruction from any malignant disease, an artificial anus may be made and the cancerous mass removed at once. A temporary anus may be made, even as high up as the jejunum, both ends can then be united to the wound, and previously prepared food be administered by this new opening, as well as by the mouth. The abdomen should not be closed until the intestine has been emptied of air through an incision which can be closed subsequently, for the distension tends to produce kinks and strangulation.

If the symptoms of obstruction continue after the operation, the wound may be reopened and an artificial anus made. The wound is closed antiseptically after the operation.

The essayist dwelt upon the value of irrigation of the peritoneal cavity whenever the symptoms indicate the onset of inflammation or septic disturbance.

RECTAL INSUFFLATION WITH HYDROGEN GAS AS AN INFALLIBLE DIAGNOSTIC MEASURE IN ASCERTAINING THE EXISTENCE OF VISCERAL INJURY OF THE GASTRO-INTESTINAL CANAL IN PENETRATING WOUNDS OF THE ABDOMEN, ILLUSTRATED BY THREE EXPERIMENTS,

by N. SENN, M.D., Milwaukee, Wisconsin.

A perforating wound of the stomach or intestine must be looked upon as fatal, unless treated by laparotomy and closed. The difference between penetrating wounds made by stabs and those made by bullets has been recognized by all practical surgeons, for the prognosis in the former is much more favorable than in the latter. The medico-legal importance of this subject is very great, as it is not easy to decide in many of these cases whether an individual who has been shot has succumbed to the injury produced by the gun-shot wound, or to the operation necessary to determine that the alimentary canal has been perforated. Therefore, if we can possess some infallible means of diagnosing the existence of a perforated intestine, so that it will not be necessary to endanger the patient by handling over the whole intestinal tract, we shall be able to hold out a more favorable prognosis, and also in cases of medico-legal importance, to give positive testimony.

His numerous experiments on the subject have proven conclusively that the ileo-caecal valve will not allow fluids, even under a high pressure, to pass from the caecum into the ileum; but recent experiments made by inflating the larger bowel with gas have proven that by this means the valve (ileo-caecal) is rendered incompetent, and the whole intestinal tract, and even the stomach, becomes distended with the gas employed. He found in these experiments that hydrogen gas gave more positive results, because it is innocuous to the system, and its presence could be demonstrated more easily than atmospheric air.

Experiment No. 1 illustrated this principle. An anesthetized dog was placed on the table, and a tube was introduced into the stomach. Within thirty seconds after inflating the bowel with hydrogen, the gas escaped from the stomach-tube and was ignited. It is necessary in this experiment to introduce a stomach-tube to overcome the constriction of the cardiac orifice, which always exists when the stomach is distended.

As to the pressure required to render the ileo-caecal valve incompetent, his experiments with the manometer showed that it varied between *one-fourth pound* and *two pounds*, and was actually less when the subject was a man than when it was a dog. Furthermore, the pressure should be gradual, uninterrupted, and continuous to effect the result.

He has found that the pyloric orifice of the stomach acts toward gases very much as the ileo-caecal valve does towards fluids, and effectually prevents the escape of gases from the *stomach* into the intestines, even although great force be used.

Experiment II demonstrated that hydrogen gas will escape through an opening in the intestine, and so through an opening in the abdominal wall. An abdominal section was made on a dog, and a minute incision made in the convex surface of a fold of the intestines, which were then replaced and the incision in the abdominal wall closed. A glass tube introduced through this latter incision allowed the escape of the

gas when the rectum was inflated. No gas escaped by the mouth.

Experiment III. Dog was shot in the abdomen with a 32-calibre revolver. The gut was then inflated with the hydrogen gas, a glass tube introduced into the gun-shot wound in the abdominal wall, and in a few seconds the escaping gas was ignited at the mouth of the tube. On opening the abdomen, the jejunum was found perforated in three places.

In summarizing his paper, which was too voluminous to be read in full, the essayist stated :

(1) That the entire alimentary canal is permeable to gases introduced with sufficient pressure into the rectum.

(2) That insuflation of the canal from the mouth is impossible because, although the stomach may be distended, the pyloric orifice will not allow the gas to pour into the intestine.

(3) A pressure of from one-fourth pound to two pounds is necessary to inflate the intestinal canal so that the gas will appear at the mouth.

(4) Resisting power is the same in all parts of the canal.

(5) The insuflation should be practised with a slow and continuous current.

(6) Hydrogen gas is preferable, for the reason that its presence can be demonstrated so readily.

(7) Hydrogen is not toxic, is innocuous to all the tissue of the body, and is rapidly absorbed, so that in from twelve to twenty-four hours after the experiment no trace of it can be found. These statements he has proven by injecting with this gas the alimentary tract, the peritoneal and thoracic cavities and cellular tissues, and in no instance finding any harmful effects follow.

(8) The escape of the gas through the ileo-cæcal valve can be distinctly perceived by placing the ear over the abdominal iliac region, where a gurgling, hissing noise can be distinctly heard.

(9) In gun-shot wounds of the intestine, the surgeon, by means of insuflation of hydrogen gas, can not only determine the existence of perforation of the intestines, but, on opening the abdominal cavity, can easily find the point of perforation without searching over the whole intestinal tract. This is of inestimable advantage, for it eliminates to a certain extent the danger which arises from prolonged manipulation of these peritoneal surfaces.

All the coils of intestine below, that is, to the rectal side of the first point of perforation, will be distended with gas, while those above it will be collapsed. As soon as the perforation is closed, the examination can proceed upwards until all the wounds are closed.

On account of the lateness of the hour, the discussion was postponed until Thursday, May 10th.

SOME OBSCURE AFFECTIONS OF THE SIGMOID FLEXURE,

by JOSEPH M. MATHEWS, Louisville, Ky.

He has given special attention to diseases of the rectum for some years, and offers some observations from his individual experience in the treatment of 2,000 cases of hæmorrhoids. He considers constipation to be the chief cause of piles, and cannot think that the distribution and course of the veins can initiate them. He believes them to be veritable tumors, in the formation of which the arteries play as important a part as the veins. The congestion of the part allows the deposit of plastic inflammatory material. Of

all the methods that have been employed in operating on these cases ligation stands pre-eminent. Instead of dissecting the tumor, he passes a delicate knife around the base of the pile, simply going through the integument. He uses the strongest linen thread for a ligature, tying it in a simple hard knot as tightly as possible. Owing to the danger that may arise from the feces becoming impacted, he purges the patient on the day of the operation, and keeps the bowels open afterward, allowing a full diet.

If internal hæmorrhoids exist with no complication, he does not consider an anæsthetic necessary, nor has he found any benefit derived from the use of cocaine, excepting in the removal of external piles. Strict antisepsis is not possible in these cases, but cleanliness must be observed; and where cutting is done, iodiform should be dusted over the parts. Using these methods he has never had a death from the operation, and but few untoward symptoms have followed it.

A NEW METHOD OF FORCIBLE CORRECTION OF OLD SUBLUXATIONS OF THE TIBIA.

by E. H. BRADFORD, Boston.

Subluxations of the tibia in chronic disease of the knee-joint are caused by the spasmodic contraction of the ham-string muscles, pulling the tibia backward in a joint whose ligaments and capsule have been relaxed by disease.

This condition is not as common in the knee-joint affection of locomotor ataxia, as in strumous or tubercular arthritis. In the latter class of cases the contracted posterior wall of the capsule, as well as the contracted ham-string muscles prevent the reduction of the dislocation.

Neither raising the lower part of the tibia, nor simply pulling upon the leg will correct the deformity, for the strong posterior ligaments resist such force. In an experiment on a cadaver he had observed that the tibia could be pushed forward an inch, and, with considerable force the crucial ligaments could be torn and the post-ligaments considerably stretched.

These posterior ligaments and the posterior wall of the contracted capsule offer the only resistance in reduction of such a subluxation, for the crucial ligaments have usually been destroyed by the original disease. To overcome the resistance of these ligaments, he makes use of an apparatus by means of which he presses the head of the tibia forward by screw power, counter pressure being applied to the end of the femur. After reduction of the deformity the limb is held in the proper position by means of plaster-of-Paris bandages. The pain that follows this procedure is considerable, and in a short time the patient is able to walk about with crutches. In two cases cited, in which caries of the knee-joint occurred early in life, subluxation followed after complete recovery from the disease. This deformity was treated according to the method described. The results were very satisfactory, and the patients are able to walk without support of any kind.

A discussion followed on the papers of Drs. Peurose and Seun.

DR. CONNER, Cincinnati: It is not such an easy matter to determine the nature and character of intestinal wounds. The matter of greatest importance is the determination of the difficulty itself and its location. For acute obstruction the old methods of waiting may be well enough in some cases, and we have

all seen apparently good results from morphia and rest, yet in most cases this is a dangerous course. We have also seen cases operated on recover, while many others, apparently relieved at first, subsequently die.

It is not an indifferent matter whether laparotomy is performed or not, for this is not such a safe procedure. Statistics are not reliable, for many fatal cases are never reported. However, acute obstruction that does not yield to other measures within a few hours should not be operated upon. In a case of his own, in which the operation was not permitted, the post-mortem showed that there was constriction at one point, which, had it been removed by resection of the part, might have given the patient a better chance for life.

DR. WEEKS, of Maine: Not every case of obstruction should be operated on, and a reasonable length of time, during which medical treatment should be pursued, should be allowed previous to operative interference. The point at which pain is most severe is not always directly over the site of the obstruction.

In one of his own cases a young man had severe pain (which appeared suddenly), in the right hypochondriac region. This was followed by nausea, vomiting and constipation, and all the evidences of obstruction. At the end of the fourth day the patient died, when the autopsy revealed a knuckle of bowel near the ileo-caecal valve, constricted by a band of fibrous tissue. He thinks that an operation would have brought relief.

In another case, presenting similar symptoms, except that the patient was moribund when he first observed him. An operation revealed an obstruction caused by a constricting band. The patient died.

While we may wait a reasonable length of time, we must not wait until inflammation has been established, for no patient can rally after having been reduced by a peritonitis. The conditions that should prompt the surgeon to perform laparotomy are the same, in his opinion, as those that govern him in relieving a strangulated hernia. Pain, suddenly appearing, constipation, nausea, vomiting, an anxious expression and hicough are symptoms which should indicate the necessity for operative interference in these cases.

(To be continued.)

Recent Literature.

On the Wasting Diseases of Infants and Children. By EUSTACE SMITH, M.D., Fellow of the Royal College of Physicians; Physician to his Majesty, the King of the Belgians; Physician to the East London Children's Hospital, and to the City of London Hospital for Diseases of the Chest, Victoria Park. Fifth edition. Philadelphia: P. Blakiston, Son & Co., 1012 Walnut Street. 1888.

This well-known work of a well-known author needs no further review than has already appeared many times in the medical journals. The text of the previous edition has been carefully revised, and certain alterations and additions have increased the number of pages from three hundred and thirty-three to three hundred and fifty-three, but the general arrangement of the chapters remains the same and no new subjects are treated of.

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THE IMPORTATION OF LEPROSY.

THE Washington correspondent of the *Boston Post* gives some very interesting extracts from a report to the State Department from the Consul-General at Honolulu. According to this report, many lepers are emigrating from the Sandwich Islands to this country to escape the fate which awaits them at home if their affliction is discovered. As is well known to medical men, the laws of the kingdom banish to the island of Molokai any one recognized as a leper, where, in the language of the report, "shut off from the rest of the world, he has to await his end. Men just entering upon life, nobles of high rank, women of queenly beauty, are doomed to banishment the moment the copper-colored spots begin to appear." These words of the report differ widely from the language a medical man would adopt in speaking of the attempt to circumscribe the disease, but they serve very forcibly to show the feelings of many of those who suffer from the law either in their own persons or in those of their friends.

Accordingly, we are not surprised to be informed that some individuals make haste to escape before their condition is known, and they find a safe and most accessible refuge in California. Mr. Putnam, the Consul-General, finds it impossible to give statistics, but he believes the number of such refugees to be very considerable.

Startling as is this statement, it is not surprising. It is, however, far from pleasant to think that we are practically powerless against such an immigration; that even this eastern portion of the country is not too far removed to be reached by these exiles, has been demonstrated by the case at Salem a few years ago.

This matter is one clearly beyond the jurisdiction of State Boards of Health. If it is possible to control at all such undesirable immigration, it can be done only by the general government. If control is impossible, it is certainly possible to collect and disseminate information on the subject, and an evil which is known and understood is certainly less to be dreaded than one that worketh in secret.

THE TRAMP, THE DEAD-BEAT, AND THE CRANK.

It is rather strange that there seems to be no word in the English language to describe that genus of ill-balanced persons, who, while not coming within the category of criminals or insane, are yet stragglers in the march of civilization and improvement. They comprise the tramp, the professional beggar, the chronic borrower, the man who does not pay his debts, the quack in medicine, the shyster in law. The genus is certainly common enough to merit a name. Differing widely from each other in many respects, these species yet have certain common attributes, one of which is a disposition to get out of the world a living without paying for it. While, as we have said, they are technically not criminals, they furnish a good recruiting ground for that great army. The tramp, leading a merely vegetative existence, insensitive to cold, wet, fatigue, filth, vermin, would rather ride under a dusty freight car or sleep in a pig-sty, than earn his car-fare or his lodging. Perhaps the closest actual approximation to Shakespeare's Caliban, he may, if debarred from his animal desire for food or other gratification, instantly commit an unpremeditated murder, with as little reluctance as he would manifest at having to do any other kind of work. So the dead-beat easily becomes the thief, the quack, the abortionist, the shyster, the embezzler.

With other individuals the intellectual nature shares with the moral in the lack of regulation. Here may perhaps be classed the drunkard, the spiritualist, and in general the widely distributed varieties of the crank. Whether the moral or the mental weakness predominates, depends on the make-up of the person, and perhaps on his environment. The materializing medium when she lays her wiles, as lately in New York, for the property of a rich but singularly gullible victim, has been led by favoring circumstances from the sphere of the mere adventuress to that of the swindler. While the Christian Scientist who sacrifices the lives of her daughter and grandchild upon a vagary, has her obliquity chiefly in the mental faculties.

The foregoing remarks have been in part suggested by a paper read recently before the New York Society of Medical Jurisprudence and State Medicine, by Austin Abbott, LL.D., called the "Physiology of the Rogue." The use of the word "rogue" to describe these offenders against the good order of society, illustrates better than anything else could the point we referred to in the beginning, that there is no word which at all expresses the thing. The writer approaches the study of criminal responsibility through what he calls the physiological rather than the pathological ground. That is, he seeks to study "the eccentric action of an undiseased organization" as shown in all these classes of morally ill-balanced persons, rather than the morbid action of the organization which has fully developed disease. The writer gives a rather interesting delineation

of some points in that physiology of some of these classes. The tramp is a being of diminished or incomplete nervous activities. The spinal and cerebral centres, like the nerves of sensation, are dull, depressed and sluggish. Hence the apathy to cold, exposure and other discomforts. The ganglionic nervous system functions well, and the individual has good circulation, respiration, appetite and digestion.

"His characteristic offences are those of a sturdy brute; he breaks fences, tramples down the meadow, rifles the pantry, assaults or frightens women, pollutes the path, and fouls the spring. There is no danger that he will commit forgery. His nervous forces are not adequate to the work of a counterfeiter. There is not life enough in his brain to carry him into the perpetration of a commercial fraud or even a confidence game. The crimes of ingenuity and skill he has no brain for. Crimes of passion are, with but occasional exceptions, above his sluggish level; and the exceptions are those which are committed when the vigorous wants of his vegetative functions impel him to an unusual effort, or a refusal to minister to them awakens an ill-will, which, in respect of intelligence, is only a few degrees above that of a vicious beast."

Mr. Mantalini has very little in common with Caliban, except his hatred of work. The "dead-beat" unlike the tramp, has his nerves of sensation and his perceptive faculties in full function. "His keen appreciation of all the pleasures of the senses — of epicurean delicacies, of perfumes, of the beauty of a *boutonnière*, and the bouquet of fine wines, the luxury of toilet soaps and new gloves, make a curious contrast to the stolid indifference which his brother the tramp manifests. He lives in the sensations which these and other such things afford. But they do not awaken in him the intelligence or the volitions necessary to come by them honestly. He has a mental sensitiveness which prevents him from helping himself to them by force as the tramp does. But he takes them by indirection. He has just mental capacity enough to contrive his way to self gratification through the effort to make himself agreeable and plausible, to borrow, to wheedle, to flatter, cozen, and cheat."

The crank is at a great disadvantage compared with the tramp in regard to the activity of the vegetative functions. He is not well-nourished; he is likely to be dyspeptic. Nor, on the other hand, is he as solicitous of his personal comfort as the Sybaritic dead-beat. He is not deterred in his supposed mission of philanthropy by summer's heat or winter's storm. The centre of his nervous activity (unlike both of his congeners) is in the brain, but the balance-wheel is somehow wanting. The crank does not live in bestiality like the tramp, nor in sensuousness like the dead-beat, but entirely in the world of ideas, without appropriate inhibitory restraint. His acts show usually intelligent desire and intelligent adaptation of means to end. This constitutes his great peril to the

community, as when he has been led by his own unchecked fancies, acting on and reacted upon by the equally unstable intelligences of his fellows, to such acts as those of the Chicago bomb-throwers. Yet as Mr. Abbot points out it seems to be true in general, that the characteristic desires of the crank and the means he devises "involve only such thoughts and feelings as are or may be common to the minds of many thinking men; but, nevertheless, they are such as the mind of one not a crank would discard at the first thought as inhibited by something beyond or collateral. Every thinking man probably has at times impracticable ideas, and his wisdom consists in part in the judgment by which he recognizes their impracticability or impropriety."

Perhaps, as our author suggests, the cerebral activity is confined to special centres and channels without the modifying influence which would come through the action of surrounding inhibitory centres. We might, perhaps, illustrate it by the violence in the action of a current of water sent through a narrow sluice-way, as compared with the force (slight it may be, but safe, at least, to the by-stander), if the same volume of water is turned over a meadow. The figure may serve further to illustrate the fact that crankiness is closely allied to power. The force of the narrow current need not indeed tear the mill-race to pieces, but it is only as the current is confined that it can furnish force enough for the accomplishment of useful work.

THE TREATMENT OF DENUDED SURFACES BY GRAFTS OF CHICKEN SKIN.

THE latest novelty in the grafting line is the treatment of large solutions of continuity in the human subject by bits of skin transplanted from the chicken. Redard communicates to the Société de Biologie an article commendatory of this new method. In one of his cases, almost the whole scalp in a child was destroyed by a burn. Grafts of chicken skin were practised for four months with gratifying success.

According to this writer, the skin, with a little cellular tissue, is taken from under the wings of young chickens. Little transparent bits, not exceeding from half a centimeter to a centimeter, are excised. These readily adhere to the part on which they are grafted, and are simply covered with iodoform gauze and charpie.

Redard regards chicken skin as the ideal grafting material, being supple, fine, and vascular. It spreads well and evenly over surfaces, and adheres without being absorbed, making epidermic islets which, in developing and spreading, form new tissues which are supple (unlike ordinary cicatricial tissue) and likely to be permanent.

Readers of the JOURNAL will recall other attempts to lay the animal kingdom under contribution, notably the use of frog skin, as mentioned in the last Surgical Report.

MEDICAL NOTES.

— In his speech on the Mills tariff bill, Mr. Fitch, of New York, read a letter from Dr. William Perry Northrup, pathologist to the New York Foundling Asylum, who stated that his Jena microscope, which had cost him \$94, cost him forty per cent. more to get out of the custom house; that an oil immersion lens, costing \$80 at the factory, had cost forty per cent. more at the custom house; that he had to pay forty per cent. duty on an expensive microscope, and twenty-five per cent. on Dr. Koch's report of the German cholera commission.

— It strikes one as rather odd that a medical man should speak with so much complacency as does one correspondent of the *Lancet*, of the utility and excellence of having a "refreshment bar" for the benefit of the patrons of a hospital out-patient department. This has been provided at the Wolverhampton Hospital, and the out-patients assure the attendant that a "long-felt want" has now been supplied. We commend the scheme to such teachers as have hitherto been disappointed in securing all the material they wish at their clinics. A free lunch counter may prove more of a drawing card for the too coy "patient-public" than even a new chromo to each corner.

A correspondent of the *N. Y. Medical Journal* writes that a hydrocephalic child was born to an ultra-prohibitionist father, who said to the doctor:

"What is the matter with my child?"

"Why, it has inherited its disease from you."

"What do you mean?"

"Why, it has water on the brain."

— Señor Joaquín Bueno, of Rio Janeiro, is, if press reports are correct, entitled to the distinction of having devised a horribly radical measure for dealing with the Indian question in that country. The plan adopted was to drive away the inhabitants of a village and in their absence to poison the wells, wine and provisions left behind. It is said that 3,800 Indians have been already destroyed with strychnia and some mercurial preparation, and that 5,000 more are doomed to the same fate.

— A lady from Denver writes to the *Western Druggist*, inquiring the formulas, as published by that journal, of "Warners Safe cure, Swifts Specific (S.S.S.), and Humbolds Extract of Bucoe."

In reply, the editors say: "While regretting our inability to furnish all the information desired, we reflect with some satisfaction that our correspondent will not thereby suffer for the means of cure, for her letter-head further announces that she is the 'Wonderful Woman, Born With Double Veil; Seventh Daughter; Born in Mid-Ocean on Christmas Day; Dead Trance Clairvoyant; Can tell your Mother's name before Marriage; Can describe your Feelings, Aches and Pains, if sick, from lock of your hair and \$1; Usually gives full Names, Dates and Places; Sends free of all cost her Wonderful Zopo, so you can

win the love of and marry any particular person. Get book with Particulars Free. Send for your Life, written in a Dead Trance; send lock of hair, and Ladies, \$1, Gents, \$5. Phenological Charts, \$1; Written Card Fortunes, \$1; Palm, or Hand Fortunes, 50 c. Cures the sick and trusts for final cure for final pay."

The curious part of it is that a clairvoyant possessing all these qualifications, should have any need of the assistance even of such important coadjutors as the trio mentioned.

—The following circumstance is reported in the *Indian Daily News* (Calcutta): "A number of snakes, principally cobras, were sent to Dr. Vincent Richards for experiment. Dr. Richards took out one of the cobras with the object of getting some of its poison in a watch glass which he had ready for the purpose. He held the snake in his right hand, and was moving his left hand in front of it, when the snake bit him severely on the forefinger of the left hand. Dr. Richards, fortunately for himself, preserved his presence of mind; he killed the snake, and with a knife laid the finger open to the bone above the wound, and applied permanganate of potash; he then applied a ligature to the finger and another to the forearm and drove off for medical advice. Dr. Macleod and Sir Benjamin Simpson reopened the wound and thoroughly cauterized it with nitric acid. Ordinary dressings were then put on. More than two months have passed since the accident, and Dr. Richards is doing well."

NEW YORK.

—The fourth annual meeting of the Fifth District Branch of the New York State Medical Association was held in Brooklyn, May 22d. At the morning session the President, Dr. Edwin Barnes, of Pleasant Plains, Dutchess County, delivered his annual address, a considerable portion of which was devoted to the treatment of diphtheria by means of cubebs, which, given in the form of the fluid extract, has proved very successful in his hands in several epidemics. After the business affairs of the Branch had been disposed of, Dr. J. Lewis Smith, of New York, read a paper on "Diphtheria of the New-born and Sepsis of the New-born, as observed in the New York Infant Asylum and New York Foundling Asylum." The afternoon session was principally taken up with a discussion on Surgical Aid in the Treatment of Pulmonary Disease, which was opened by Dr. N. L. North, of Brooklyn, and continued by Drs. J. D. Bryant, C. A. Leale, Avery Segur, C. S. Wood, and others.

—Dr. Allan Macy Butler, a grandson of the late Dr. Willard Parker, died of peritonitis at the Roosevelt Hospital, where he was senior assistant physician, on the 21st of May. Dr. Butler was a graduate of St. Paul's School, Concord, Harvard University, and College of Physicians and Surgeons, New York, and was a physician of great promise. He was twenty-six years old.

Miscellany.

MEDICAL ADVERTISEMENTS AND THE RELIGIOUS PRESS.

The following resolutions were adopted at the Thirtieth Annual Session of the State Medical Society of Arkansas, held at Fort Smith, April 25, 26 and 27, 1888, and ordered to be furnished to the American Medical Association, the medical and religious press, and to the State Medical Societies, soliciting their co-operation in bringing about a correction of these grievous and palpable errors:

Resolved, That the members of the State Medical Society of Arkansas have for years observed with pain and mortification the patronage given to charlatanism in all its multifarious aspects by the religious press of our country.

Resolved, further and most specifically, That the appearance in religious papers, ostensibly published for the inculcation of truth and morality, of serious homilies on prayer and praise side by side with cures for consumption, cancer, Bright's disease, and other incurable ailments, to which an editorial endorsement is often given, as well as secret preparations under the cloak of remedies for disease, but really intended for purposes of feticide, and other immoral uses, largely tends to shake the confidence of the profession of medicine in the integrity and purpose of the managers and editors of such journals.

Resolved, further, That it has been the well-known custom of the profession to render services gratuitously to clergymen, which we do not regret nor do we propose to recall, yet we must assert that the frequent occurrence of endorsements and recommendations of the clergy of peripatetic doctors and advertising charlatans has in many instances been the only reward of our gratuitous services.

Resolved, further, That we are aware that the editors of religious newspapers admit the painful situation in which these advertisements place them, and attempt to excuse themselves by saying that it is necessary to take these advertisements in order to obtain means to conduct their papers; but, in the language of orthodox theology we would say: "Put behind you that damnable doctrine that we must do evil that good may come."

Resolved, further, That, as a Society, we declare that the continued perpetration of the above offenses by some of the clergy and religious press brings harm to the bodies of their constituency, and damages materially their influence upon the thinking class of the medical profession.

Resolved, That the Secretary be instructed to furnish copies of these resolutions to the religious and medical press of the United States, to the American Medical Association, and to the State Medical Societies, soliciting their co-operation in bringing about a correction of these grievous and palpable errors.

GLASSBLOWERS' CRAMP.

M. PONCEY has made a communication to the Académie des Sciences upon the subject of a professional deformity of the hand to which he says attention has not heretofore been drawn. The deformity is by him described in the *Lancet*, as consisting in a permanent and very pronounced flexion of the fingers upon the

hand, which is more pronounced in the case of the third and fourth fingers than the other two, and leaves the thumb wholly unaffected. The inflexion occurs principally at the second joint, so that the second phalanx is fixed almost at right angles to the first, and it is attributable not to sclerosis of the skin or tightening of the deeper tissues, but to retraction of the flexors and tendons, and more particularly of the superficial flexor. At this diagnosis the author has arrived by a careful examination of the affected fingers, and he argues much from the circumstance that the malady is unaccompanied by pain. The distal joints are more or less deformed, with some tendency to subluxation, and the fingers are bent into a curve, and cannot be extended. The skin of the palmar surface is somewhat thicker, and more callous than is usual even with manual laborers. This deformity is known among glass-workers as *main en crochet* or *main fermée*. It supervenes after a short practice of the art of glassblowing, and increases progressively. It is further stated upon the authority of an expert (Mr. E. Rollet), that it attacks the majority of glass-blowers, and is most marked in those who have been longest at the work. M. Poncet thinks that the deformity which he has described is due to the continuous application of the hand to the tube with which a glassblower manipulates his "metal." He stated that, during the eight hours a day through which such a man ordinarily works, his fingers are without intermission kept closed about this tube, and the constraint induces, even within a month, some difficulty in effecting complete extension. This difficulty becomes greater and greater as time runs on, until at last it develops into the crippled condition of the hand which he has described. Altogether, he says, the trade of the glassblower as pursued in France, is so unhealthy that the operatives who habitually take it up as young men are obliged to abandon it on attaining about thirty-five years of age, and do so with their hands permanently crippled in such a way as to render them useless for almost any other occupation.

THE DOCTOR'S BILL.

THE *New York Tribune*, in commenting on the extraordinary bill of \$143,000 for professional services recently presented against the estate of a late distinguished statesman and millionaire—that bill representing eight years' medical attendance—makes these remarks:

"We venture to suggest that the most remarkable, and for various reasons the most instructive, feature of this transaction is not the size of Dr. S.—'s bill, but the fact that he should have been allowed to give his services during eight years without any compensation. We all know that Mr. T.— loved the pleasures of procrastination with a love surpassing that of woman, but this was certainly a most surprising exhibition of his favorite weakness. To receive during so long a period, and at times to monopolize the attentions of a successful physician without paying for them, was an exceptional and exaggerated instance of a bad habit which is only too widespread. Mr. T.— did not sin alone in this matter, though he made a record which it would be hard to beat. His fellow-sinners, if they could be gathered together, would make a large, and, it might be said, a select company.

Almost any physician, we venture to assert, will confirm the statement that there is no bill which is so long neglected, or so often left unpaid altogether, as the doctor's bill; and this is true of those who find it easy to pay, as of those who find it hard. The grocer and butcher are settled with among the first, of necessity. The lawyer takes his toll, like the miller, out of the grist before it passes out of his hands. Even the tailor often gets his money before the doctor, for the man who wants to be presentable must keep up, at least, a reasonable rotation of new clothes, whereas there is no telling from a man's external appearance, or from the condition of his health, whether he has squared up accounts with his physician or not.

"There seems to be an unformulated theory that doctors and their wives and children can live on air, as the chameleon was once supposed to do. A certain class of people feel apparently that the philanthropic nature of the profession requires the doctor to be ready at all times to give up his time and skill with only the faintest hope of reward, if any at all, not troubling themselves to reflect that he can hardly settle his own debts so easily. The result is that no class of workers, except the clergy, give so large a proportion of their labor for nothing. This is so, partly because physicians are constantly doing good deeds of which the world hears nothing, not only tending the poor without charge, but even buying their medicine and food. There is no nobler record of unselfishness in our modern life than that of the medical profession. But it is also true in part because they are continually imposed upon. The result of all this is that it is a common thing, as every one knows, for a physician who has held a leading place in the profession, and who has popularly been supposed to be in receipt of a splendid income, and be solidly rich as well, to die poor, as the world finds to its great surprise."

"One of the remedies often proposed for this state of things is that the doctor should get his fee at every visit, as in England, or as specialists do from office patients here. There can be no doubt that the adoption of such a system would save the doctors a good many bad debts, but they might not find it an agreeable method of collection. The social position of the ordinary medical practitioner is not so good in England as here, and this fact may have something to do with his willingness to collect his money as he goes along. The American is likely to prefer the present system, with all its faults, for a certain reserve and delicacy he finds in it."

OBITUARY WILLIAM GODDARD, M.D.

Dr. William Goddard whose death occurred in Boston, May 27th, was the oldest living graduate of Harvard College, the only survivor of his class, and the oldest surviving graduate of Harvard Medical School. He was born in Portsmouth, N. H., April 22, 1796, where he practised medicine for a number of years. Dr. Goddard was in college during our last war with England, graduated in the class of 1815, and at the Medical School in 1820. His father was Hon. John Goddard, of Portsmouth; his grandfather was John Goddard, of Brookline, who was renowned in the history of those times, having had charge of the work of throwing up the fortifications at Dorchester Heights. His maternal grandfather was Rev. Samuel Langdon, D.D., who was president of Harvard College during the Revolutionary war, as well as chaplain of Washington's army while stationed at Cambridge. Dr. Goddard was much esteemed for his intelligence, integrity and Christian virtues, being liberal and progressive in all his views. He was a man of genial disposition, modest and retiring in his nature, respected and beloved by all who knew him. Two children, a son and a daughter, survive him.

Correspondence.

HOW MANY LIVING GENERATIONS?

BOSTON, May 26, 1888.

DEAR SIR,—Judging from your Kansas correspondence of May 12th, it seems to be interesting to the editor of the *Boston Medical and Surgical Journal*, as well as to its readers, to know about living generations in one family. I therefore offer you the following facts.

A lady, American, and a widow, consulted me when forty-eight years old. She was intending to be married a second time, and was only waiting for the confinement of her granddaughter, who expected her second baby in a few

weeks. My patient had been a widow since her seventeenth year. Her daughter, (the grandmother), thirty-three years of age, had also married when scarcely fifteen years of age, and was a widow since her nineteenth year; while the young woman for whose confinement they were waiting would be seventeen years and three months old when the second baby arrived.

Some months later, the newly-married great-grandmother again consulted me, complaining of her miserable condition of health, "change of life," etc. On examination I found her to be twelve weeks pregnant, and when she was forty-nine years and six months old, she gave birth to a large healthy boy.

Query: How many living generations does this make?

Very truly yours, M. E. ZAKRZEWSKA, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING MAY 19, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrheal Diseases.	Diph. & Croup.	Scarlet Fever.
New York	1,526,081	768	296	20.93	14.82	2.08	9.23	4.03
Philadelphia	1,016,738	385	120	12.22	14.30	2.60	2.08	1.04
Brooklyn	751,422	—	—	—	—	—	—	—
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,155	126	36	6.32	22.12	—	.79	.79
Boston	407,024	191	65	13.25	18.02	1.06	9.54	—
New Orleans	248,600	150	62	27.06	11.88	17.16	3.30	—
Buffalo	230,000	—	—	—	—	—	—	—
District of Columbia	225,000	73	28	9.59	9.59	—	1.37	—
Pittsburgh	210,000	65	26	18.48	10.78	4.62	6.16	—
Milwaukee	200,000	64	33	15.62	9.36	1.56	3.12	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	—	—	—	—	—	—	—
Charleston	60,145	37	16	18.00	8.19	16.20	—	—
Portland	40,000	10	3	10.00	10.00	—	10.00	—
Worcester	76,328	24	11	16.64	24.96	8.32	8.32	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	20	5	20.00	20.00	—	20.00	—
Rail River	61,203	27	5	11.11	29.60	—	—	7.40
Lynn	51,467	13	8	30.76	7.69	—	15.38	—
Lawrence	40,175	14	3	7.14	—	—	—	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36,298	23	7	13.05	4.35	—	13.05	—
Somerville	33,307	—	—	—	—	—	—	—
Holyoke	32,887	8	3	12.50	12.50	—	—	—
Salem	28,781	6	0	—	—	—	—	—
Chester	27,552	12	2	8.33	8.33	—	—	—
Haverhill	24,979	—	—	—	—	—	—	—
Taunton	24,796	9	1	11.11	22.22	—	—	—
Brockton	24,784	5	1	—	20.00	—	—	—
Gloucester	23,187	10	5	60.00	10.00	—	20.00	10.00
Newton	21,105	6	1	16.66	16.66	—	—	—
Malden	18,932	—	—	—	—	—	—	—
Fitchburg	17,544	7	1	—	—	—	—	—
Waltham	16,651	6	1	16.66	16.66	—	16.66	—
Newburyport	13,839	5	0	—	—	—	—	—
Northampton	13,419	6	0	—	—	—	—	—

Deaths reported 2,080: under five years of age 748; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 356; consumption 303, acute lung diseases 245, diphtheria and croup 125, diarrheal diseases 69, scarlet fever 40, typhoid fever 34, measles 22, cerebro-spinal meningitis 17, erysipelas 14, malarial fever 13, small-pox 11, whooping-cough 9, puerperal fever 2, From typhoid fever, Philadelphia 15, New York five, Milwaukee and Nashville three each, Baltimore two, New Orleans, Washington, Lyon, Lawrence, Holyoke and Newton one each, From measles, New York eight, Washington, three, Philadelphia, Baltimore, Boston and Pittsburgh two each, New Orleans, Milwaukee and Brockton one each. From cerebro-spinal meningitis, New York six, Washington, Pittsburgh, Milwaukee, and Gloucester two each, New Orleans, Fall River and Taunton one each. From erysipelas, New York 10, Boston two, Pittsburgh and Lyon one each. From malarial fever, New York seven, New Orleans five, Nashville one. From small-pox, Philadelphia six, New York five. From whooping-cough, New York, Phila-

delphia and New Orleans, two each. Baltimore, Boston and Charleston one each. From puerperal fever, Baltimore and Milwaukee one each.

In the 18 cities and larger towns of Massachusetts, with an estimated population of 981,026 the total death-rate for the week was 20.51 against 19.61 and 23.43 for the previous two weeks.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending May 5th, the death-rate was 18.7. Deaths reported 3,367: infants under one year of age 775; acute diseases of the respiratory organs (London) 287, whooping-cough, 146, scarlet fever 45, diarrhoea 38, fevers 32, diphtheria 31, measles 25, small-pox (Sheffield eight, Bristol two, Oldham and Hull one each) twelve, The death-rates ranged from 12.7 in Portsmouth to 28.1 in Salford; Birmingham 18.6; Bradford 17.0; Hull 17.0; Leeds 18.7; Leicester 19.9; Liverpool 17.5; London 17.4; Manchester 27.6; Newcastle-on-Tyne 22.0; Nottingham 16.0; Sheffield 19.1. In Edinburgh 21.1; Glasgow 22.1; Dublin 21.7.

The meteorological record for the week ending May 19, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, May 19, 1888.	Barom-eter.	Thermometer.			Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.		
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Sunday, ... 13	29.82	51.0	58.0	47.0	100.0	97.0	94.0	97.0	N. E.	N.	N. W.	6	8	6	R.	G.	O.	15	1.14
Monday, ... 14	29.90	44.0	55.0	44.0	33.0	79.0	88.0	87.0	N. E.	E.	E.	6	22	17	O.	O.	O.	2	.02
Tuesday, ... 15	29.89	45.0	48.0	40.0	52.0	75.0	82.0	81.0	N.	N.	W.	12	9	9	O.	O.	F.	10	.20
Wednesday, ... 16	29.90	50.0	61.0	41.0	72.0	47.0	76.0	63.0	W.	S. W.	S. W.	10	16	12	C.	O.	C.		.09
Thursday, ... 17	30.00	52.0	60.0	40.0	59.0	34.0	81.0	58.0	W.	N. W.	W.	15	18	9	C.	F.	C.		.00
Friday, ... 18	30.02	53.0	63.0	44.0	49.0	42.0	80.0	67.0	W.	S. W.	W.	6	14	6	C.	O.	C.	1	T
Saturday, ... 19	30.01	47.0	53.0	46.0	100.0	96.0	89.0	95.0	E.	E.	E.	12	8	3	R.	G.	O.	10	.22
Mean, the Week.		49.0	57.0					77.0											

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 19, 1888, TO MAY 25, 1888.

SUTHERLAND, CHARLES, colonel and medical director. To inspect the medical department at St. Francis Barracks, Fla., Fort Barrancas, Fla., Mount Vernon Barracks, Ala., and Jackson Barracks, La. S. O. 100, Division of the Atlantic, May 19, 1888.

TOWNS, F. L., major and surgeon, United States Army, post surgeon at the Post of San Antonio, Texas. Will take charge of the office of the medical director at these headquarters, and perform the duties of that officer during his absence on leave. S. O. 51, Department of Texas, May 11, 1888.

BROWN, HARVEY E., major and surgeon. Directed to continue on duty at Fort Barrancas, Fla., until further orders. S. O. 115, A. G. O., May 18, 1888.

KIMBALL, J. P., major and surgeon. Leave of absence extended two months. S. O. 117, A. G. O., May 31, 1888.

MCCREERY, GEORGE, captain and assistant surgeon. To accompany 7th Cavalry from Fort Meade, Dakota Territory, to Fort Riley, Kansas. From Fort Riley he will return to Fort Meade, S. O. 42, Department of Dakota, May 17, 1888.

WYETH, M. C., captain and assistant surgeon. Will be relieved from duty at Fort Barrancas, Fla., at the expiration of his present leave of absence, and will report in person to the commanding officer, Fort Huachuca, Ariz., for duty at that post. S. O. 115, A. G. O., May 18, 1888.

KNEEDLER, WM. L., first lieutenant and assistant surgeon. Will accompany from Fort Snelling, Minn., that portion of the 25th Infantry, destined for Fort Shaw, M. T. From Cascade, M. T., he will accompany the portion of the 3d Infantry en route from Fort Shaw, M. T., to Fort Snelling, Minn. S. O. 40, Department of Dakota, May 14, 1888.

ROBERTSON, R. L., first lieutenant and assistant surgeon. Will accompany from Fort Keogh, M. T., the 5th Infantry, to the Department of Texas, returning to his station on the completion of the duty. S. O. 43, Department of Dakota, May 18, 1888.

EWING, C. B., first lieutenant and assistant surgeon. Will accompany the 22d Infantry as medical officer, to the Department of Dakota, returning to his station on the completion of the duty. S. O. 56, Department of Missouri, May 17, 1888.

Paragraph 12, S. O. 49, Department of Texas, May 5, relative to H. S. T. Harris, first lieutenant and assistant surgeon, accompanying 8th Cavalry to Department of Dakota, is amended by Paragraph 1, S. O. 50, Department of Texas, May 9, 1888.

Paragraph 1, S. O. 50, Department of Texas, May 9, is revoked by Paragraph 1, S. O. 51, Department of Texas, May 11, 1888.

HARRIS, H. T., first lieutenant and assistant surgeon. Will be relieved from duty at Camp Pena Colorado, and proceed to San Antonio, where he will report to commanding officer, 16th Infantry, for duty as medical officer with that battalion to its destination in Department of the Platte. Upon completion of this duty, he will return to his proper station, Camp Pena Colorado, Tex. S. O. 51, Department of Texas, May 11, 1888.

WOOD, LEONARD, first lieutenant and assistant surgeon. Leave of absence extended two months. S. O. 114, A. G. O., May 17, 1888.

BANISTER, W. B., first lieutenant and assistant surgeon. Granted leave of absence for two months, with permission to

apply for an extension of twenty-seven days. S. O. 119, A. G. O., May 23, 1888.

Paragraph 15, S. O. 49, Department of Texas, c.s., (relative to Paul Clendenin, first lieutenant and assistant surgeon, accompanying 16th Infantry to its destination), is revoked, by S. O. 51, Department of Texas, May 11, 1888.

CLENDENIN, PAUL, first lieutenant and assistant surgeon. Will proceed from Fort McIntosh to Fort Davis and report to commanding officer 8th Cavalry, for duty as medical officer with that regiment on its march to Fort Concho, from which place Lieutenant Clendenin will return to his proper station. S. O. 51, Department of Texas, May 11, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING MAY 26, 1888.

DICKSON, S. H., passed assistant surgeon. Detached from the Receiving-ship "Dale" and to Marine Barracks, Washington, D. C.

NASH, F. S., passed assistant surgeon. Ordered to the Receiving-ship "Dale," in addition to present duties.

RUTH, MELANCTHON L., surgeon. Granted one year's leave of absence from date.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.—There will be a meeting of this Society at 19 Boylston Place, on Monday evening, June 4th, at 8 o'clock. Reader: Dr. F. H. Davenport, "Some Gynaecological Cases Treated by Electricity."

T. F. SHERMAN, M.D., Secretary.

MAINE MEDICAL ASSOCIATION.—The Thirty-Sixth Annual Meeting will be held in the Common Council Chamber, City Building, Portland, Me., Tuesday, Wednesday and Thursday, June 12, 13 and 14, 1888.

DEATHS.

Died in Groton, Mass, May 24, 1888, Norman Smith, M.D., M.M.S.S., aged seventy-six years.

Dr. Allan Macy Butler, senior assistant physician at the Roosevelt Hospital, died on Monday. He was a graduate of Harvard, and of the College of Physicians and Surgeons. He was in the twenty-sixth year of his age.

BOOKS AND PAMPHLETS RECEIVED.

Twelfth Annual Report of the Sea Shore Home, for summer of 1887.

The Extraction of Cataract as Influenced by Myological Development. By A. E. Prince, M.D., Jacksonville, Ill.

The Pulley Method of Advancing the Rectus, with Indications for its Employment. By A. E. Prince, Jacksonville, Ill. Reprint. 1887-8.

Clinical Notes on Pruritus. By L. Duncan Buckley, A.M., M.D., Attending Physician to the New York Skin and Cancer Hospital, etc. 1887.

The Census of Massachusetts for 1885. Prepared under the direction of Carroll D. Wright, Chief of the Bureau of Statistics of Labor. Volume III. Agricultural Products and Property. Boston, 1887.

Original Articles.

THE PHYSICAL EXAMINATION OF THE STOMACH IN CASES OF GASTRIC DISEASE.¹

BY PHILIP COOMES KNAFF, A.M., M.D.,
Physician to Out-Patients with Diseases of the Nervous System, Boston City Hospital.

HAVING had several patients with digestive disturbances under my care during the summer and fall, I sought in the first place to get a little more knowledge of what had been to me rather an obscure subject. In that way I was led to try some of the recent methods of physical diagnosis in gastric disease. The result of my reading and experience was to convince me of the value of these methods, and, although I have nothing original to offer, I have believed the subject to be of sufficient importance to justify me in presenting what is merely an abstract of the work of others.

Although the Americans are often called "a nation of dyspeptics," the diseases of the alimentary canal have formed, until lately, the most obscure chapter in medicine. We noted a history of vague symptoms—pain, distress after eating, heart-burn, nausea—we looked at the tongue and perhaps at the anus, and imagined what was going on in the twenty-five or thirty feet between. We felt of the abdomen, we regulated the bowels, and we prescribed some one of the many elegant varieties of pepsine which the manufacturers had sent us, and we knew less of the diseases of the alimentary canal than we did of the diseases of the lungs before the days of Laennec. Fortunately we have changed all that—at least in part. In no other branch of medicine, except in bacteriology, have so great advances been made as in the subject of diseases of the stomach. We have obtained the means of determining the action of that organ, and thus we have become able, not only to distinguish more clearly those affections which we formerly knew, but to differentiate other disorders whose existence was before unknown. With this increased knowledge in diagnosis has come even greater skill in treatment. We can compare the action of the diseased stomach with the normal digestive processes, and we can prescribe accurately and definitely, in accordance with the demands of the diseased organ, and not strike out blindly in a dark room with a club. This advance in our knowledge is due, of course, to the methods which have rendered a physical examination of the stomach and its functions possible, and it is to these methods that I would call your attention.

It may be well to preface my remarks with a brief review of the process of gastric digestion. When the food reaches the stomach a part of the starch has already been changed to sugar by the saliva, and may be absorbed by the stomach. It is probable that this action is kept up for a little time in the stomach until sufficient acid has been secreted, for the saliva will still act when small amounts of acid are present (0.01 to 0.25%).² The fats remain unchanged. Salts and water are absorbed directly. Albumen is attacked by the gastric juice, whose active principles are hydro-chloric acid and pepsine. These dissolve the albumen, converting it into peptone, part of which is absorbed by the stomach, while the rest passes on to

the small intestine. The solution and the passage onward are aided by the muscular movements of the stomach. With ordinary meat diet during this process lactic acid is formed³ in from ten to thirty minutes, not secreted by the gastric glands, but formed from the meat itself. This form of lactic acid (Fleischmilchsäure) or sarcolactic acid, disappears at the end of two hours, under the action, probably, of the hydro-chloric acid of the gastric juice which becomes strong enough to prevent fermentation. In disease, where abnormal processes of fermentation are going on, we may get another form of lactic acid (Gährungsmilchsäure) paralactic acid, isomerically the same, except that it polarizes to the left instead of to the right. In the gastric juice the pepsine seems to act as a pure ferment, aiding the solvent power of the hydro-chloric acid, for Petit⁴ has shown that it will transform one thousand times its weight of fibrine into peptone, and dissolve five hundred thousand times its weight in a few hours. After a certain time, as yet not accurately known, the peptone is more or less absorbed, the rest of the food passes on, and the stomach becomes empty.

Even if the stomach were as accessible to the touch and sight as the mouth is, it is doubtful whether we could get much information as to its diseases by looking at it, for the morbid changes in the functions of a gland are not often due to visible lesions. Of still less value, therefore, is the gastroscope devised by Miculicz. In a few instances it may give some information, but it is not safe to insert such an instrument into a diseased stomach, and the difficulty of manipulation and the cost render it impracticable for ordinary use. By the use of the ordinary soft rubber stomach-tube we can get much more accurate knowledge with much less risk.

From the physical examination of the stomach we obtain information as to the following points: (1) the time of digestion; (2) the absorbent power of the stomach; (3) the motor activity of the stomach; (4) the chemical composition of the gastric juice; (5) the digestive powers of the gastric juice; (6) the size and position of the stomach.

(1) The time of digestion, as I have said, is not accurately known. It varies with the individual and with the character of the food taken. Leube⁵ has found, however, that normally, after a definite meal, all food has disappeared from the stomach at the end of seven hours. In a certain proportion of cases it may disappear before that time, but if, after seven hours, food is found in the stomach, it shows that the process of digestion is delayed. To test this, Leube orders a test breakfast—soup, a piece of beef-steak, and a slice of white bread, with water. At the end of seven hours the stomach is washed out, using about three funnels full of water, and the wash-water is examined for undigested fragments of food. In health the water should contain no such fragments.

(2) The test of the absorbent powers of the stomach is a simple one. Penzoldt⁶ has found that by giving a small amount of iodide of potassium (0.2 grm., gr. iij) in a gelatine capsule with a wineglassful of water at least three hours after a meal, or preferably on an empty stomach, the salt is absorbed, and can be detected in the saliva. The patient is directed

¹ Read before the Suffolk District Medical Society, Section for Clinical Medicine, Pathology and Hygiene, April 11, 1888.

² Ewald. *Klinik der Verdauungskrankheiten*. 1886.

³ Ewald and Boss. *Virchow's Archiv.*, cl., p. 325, 1885.

⁴ Petit. *Journal de Thérapeutique*, 1880.

⁵ Leube. *Deutsches Archiv. f. klin. Med.*, xxxi., 1, 1883.

⁶ Penzoldt und Faber. *Berlin. kl. Wochenschrift*, 22 May, 1882.

to spit once a minute on a bit of starch paper, which is then touched with a drop of fuming nitric acid. In health, in from seven to fifteen minutes, there is found first a reddening and then a bluing of the paper.

(3) The test of the motor activity of the stomach is equally simple. Ewald⁷ has lately found that salol is changed in an alkaline solution to salicylic acid. The acid gastric juice has no effect on it, but when it passes through the stomach, it is changed to salicylic acid by the alkaline pancreatic juice, absorbed, and eliminated by the urine. The patient is given three to five grains of salol, and specimens of the urine obtained every fifteen minutes or half an hour. The addition of a drop of tincture ferri chloride to the urine will, when it contains salicylic acid, give a deep brownish-red color. This color is said to be found in from half an hour to an hour, after taking salol. If it does not appear until after that time, the motor activity of the stomach is regarded as below normal. Later observers make the time rather longer.

(4) The methods of obtaining the gastric juice, and of testing its chemical composition, have been the subject of much controversy, and the question is by no means settled yet. Leube⁸ suggested three methods of obtaining the juice. The first was by the mechanically irritation of the mucous membrane of the stomach by means of a stiff sound, which naturally proved impracticable. The second was to wash out the stomach with 400 cc. of luke-warm water; then introduce 50 cc. of a three per cent. soda solution, letting it stay twelve minutes, and then adding 500 cc. of luke-warm water, siphoning out, and testing the acidity; alkalinity of the wash-water showing insufficient acid. The third, which was the one he generally employs, is to wash out the stomach, introduce 100 cc. of iced water, letting it stay ten minutes, and washing it out with 300 cc. of water.

Jaworski and Gluzinski⁹ obtain the juice by giving the patient the whites of two eggs, hard-boiled, and 100 cc. of distilled water, at a temperature of 18° C. (65° F.). The patient sits still an hour and a quarter and then the stomach is washed out with 100 to 300 cc. of water. By that time the egg should be digested, and the diluted juice may be tested.

The trouble with these methods is that they give a juice much diluted with water, and therefore estimates as to the acidity or the digestive power of the juice, must make allowance for this dilution. Riegel¹⁰ has therefore sought to obtain the juice in an undiluted form. To this end he passes the stomach-tube during the period of active digestion, two or three hours after a hearty meal, and expresses a part of the contents of the stomach through it. This is filtered, and the filtrates contain the undiluted juice mixed with peptones. The residue, if desired, may be examined microscopically for sarcine, bacteria, etc.

Ewald¹¹ has suggested a modification, giving two rolls, weighing from 30 to 35 grammes, and a cup of green tea without milk or sugar. An hour later he expresses a part of the contents of the stomach in the same way.

As I have said above, at the end of two hours, after a mixed meal, the only acid in the stomach should be

hydro-chloric. If abnormal processes of fermentation are going on there may also be lactic, butyric, or acetic acids. The presence or absence of hydro-chloric acid is therefore the important point. Unfortunately, if any of the organic acids be present, they may respond to some of the tests, and much work has been done to find tests that will show even minute traces of hydro-chloric acid, without re-acting to the organic acids.

First of all, the question of the acidity of the juice should be determined by the use of Congo-red paper, which turns blue when acid is applied. It is rather more delicate than litmus, but the latter should be used as a control.

Then to a little of a concentrated solution of tropæolin (that known to the trade as Merck's 00) spread out on a porcelain dish a drop of juice should be added. If the juice contain hydro-chloric acid it produces first a lilac red and soon a smutty brown color. This change, however, may be produced by a 2 : 1000 solution of lactic acid (Uffelmann).¹²

The test in common use is that with methyl aniline violet. If to a rather dilute aqueous solution of methyl violet a drop or two of gastric juice containing hydro-chloric acid be added, the color changes to blue.

Ewald and Boas¹³ and Uffelmann, make more or less use of Mohr's test. This consists in adding a couple of drops of juice to a layer of the following mixture:

Liquor ferri acetici (C. P.)	0.5
10% sol. potass. sulpho-cyanide	2.0
Aqua dist.	10.0
M	

This forms a clear ruby-red solution. If hydro-chloric acid be added it turns violet, and later a mahogany brown.

Rhode's¹⁴ test consists of equal parts of a half per cent solution of ammoniac sulpho-cyanide and a fresh solution of tartrate of sodium and iron oxide, which becomes brown-red with dilute solutions (0.25 per cent.) of hydro-chloric acid.

Von den Velden¹⁵ recommends a solution of fuchsin (rosaniline chloride) which loses its red color with hydro-chloric acid.

Uffelmann¹⁶ is a strong advocate of two tests. The first is by use of the coloring matter of red Bordeaux wine. The wine must respond to various tests, for which I will refer to his original paper. One cc. of this wine is shaken with three cc. of absolute alcohol and filtered. He then wets paper with this filtrate, dries it in a cool place, and uses it like litmus. Hydro-chloric acid changes it from a bluish-red to a rosy red. His other test is a paper soaked in the juice of huckleberries which is turned red by hydro-chloric acid.

Von Jaksch¹⁷ quotes Voigt as recommending a solution of emerald green (the "krystallisirte" of B. Bayer), which is changed to a grass or yellow green by dilute hydro-chloric acid, while organic acids have no effect, and mentions several similar colors which are less sensitive.

Cahn and v. Mering¹⁸ have devised a very elaborate method of determining the presence of hydro-chloric acid, even in minute quantities, by distillation

⁷ Ewald. Wiener Med. Press. July 10, 1887.

⁸ Leube. Art. cit.

⁹ Jaworski and Gluzinski. Zeltschr. f. klin. Med., xl, 50, 270, 1880.

¹⁰ Riegel. Deutsches Archiv. f. klin. Med., xxxvi, 100, 1885.

Zeltschr. f. klin. Med., xl, 107, 1886; xli, 420, 1887. Volkmann's klin. Vorträge. No. 289, 1886.

¹¹ Ewald. Berlin. kl. Wochenschr. Jan. 18, 25, 1886

¹² Uffelmann. Deutsches Archiv. f. klin. Med., xxvi, 431, 1880.

¹³ Ewald and Boas. Art. cit.

¹⁴ Quoted by Ewald. Op. cit.

¹⁵ Von den Velden. Deutsches Archiv. f. klin. Med., xxiii, 369, 1878.

¹⁶ Uffelmann. Zeltschrift. f. klin. Med., viii, 392, 1884.

¹⁷ V. Jaksch. Klinische Diagnostik. 1887.

¹⁸ Cahn and v. Mering. Deutsches Archiv. f. klin. Med., xxxi, 233, 1886.

and digestion with cinchonine, but it is too complicated for ordinary clinical use, so I will not describe it here, although I shall refer to the conclusions which they draw from it later.

Finally, I will mention a new test described by Güinzburg,¹⁹ which I learn from Dr. J. W. Warren is very trustworthy and satisfactory. He uses the following solution:

Phloroglucin (Merck's)	2.0
Vanillin	1.0
Alcohol (absolute)	30.0

This gives a yellow-red solution. If a few drops of this be added to an equal amount of gastric juice containing hydro-chloric acid and gently warmed on a porcelain plate, deep-red crystals are formed. This solution reacts to very small amounts of hydro-chloric acid, 0.01 per cent. and less, and does not react, even to concentrated organic acids. Dr. Warren regards it as the only satisfactory test.

The presence of pepsine is to be determined by a digestive experiment. The detection of peptones is not very important. The test is simple, however, and is the ordinary biuret reaction. The solution is diluted, rendered alkaline by sodic hydrate, and a few drops of a dilute solution of cupric sulphate are added. If peptones be present, the solution turns a rosy red, but if albumen be present alone, it turns violet. (Sticker).²⁰

The test for the acids found where there is fermentation is much simpler, or rather all authorities agree. Uffelmann²¹ has proposed a test for lactic acid which is generally accepted. He takes one or two cc. of the following solution:

4 % sol. acid carbolie	10.0 cc.
Aqua distill.	20.0 cc.
Liq. ferri sesquichlorid. (P.G.)	one dr. p.

This forms a steel-blue solution, which is decolorized by hydro-chloric acid, and turned yellow by lactic acid.

If the juice be shaken with ether, and the ethereal residue evaporated, acetic and butyric acids can be detected by the smell. On neutralizing the ethereal solution with sodic carbonate and adding the iron solution, acetic acid will turn it blood-red. On adding distilled water, a drop or two, and a bit of calcic chloride, oil drops of butyric acid will appear on the surface. These tests, however, are unimportant.

Having determined the presence or absence of hydro-chloric acid, the juice should next be subjected to a quantitative determination of the acids. Uffelmann gives the following approximate tests:

Huckleberry juice shows	0.024 % hydro-chloric acid.
Tropeolin shows	0.03 % "
Methyl-violet shows	0.038 % "
Wine test shows	0.045 % "

Von den Velden²² thinks the normal amount of hydro-chloric acid is 0.12%. Ewald²³ thinks the normal limit varies between 0.15% and 0.4%, with the normal average of 0.2%, and other observers think that a percentage above 0.25 or 0.3 is to be regarded as suspicious. For an accurate test, only a small amount ($\frac{1}{2}$ to 1 cc.) of the juice is necessary. This is diluted with a weak solution of phenol-phthalein, and the decinormal sodic hydrate solution is run into it from a burette until a red color persists. The amount of acid is then easily calculated, as the decinormal

sodic hydrate solution contains 4 mgr. to the cubic centimeter.

(5) As I said before, the presence of a sufficient amount of pepsine is best shown by testing the digestive power of the stomach. The test is very simple: A bit of egg-albumen is put into a test-tube containing 10 to 20 cc. of the juice, and kept at the temperature of the body. For this purpose, it is well always to take a piece of the same size. Sticker²⁴ advises a disc 8 mm. across and $1\frac{1}{2}$ mm. thick. I have used a bit measuring 8 x 4 x 1 mm. If the juice be undiluted, this should be digested in from two to three hours. With diluted juice, the time, of course, will vary. If juice enough be obtained, it is well to perform control experiments at the same time by taking three test-tubes and leaving one untouched, adding a drop of dilute hydro-chloric acid to the second, and a flake of pepsine to the third.

(6) The determination of the size and position of the stomach is of importance chiefly in cases of suspected dilatation, and various methods have been devised for this purpose. Palpation and percussion may furnish some slight aid, but, as a rule, other methods are necessary. Leube²⁵ passed a stiff sound into the stomach, and endeavored to feel the point through the abdominal wall, but this procedure is not easy in stout patients, and is full of danger. Penzoldt²⁶ had the patient take considerable water, and thus mapped out the lower border of the stomach by detecting the dulness. Schreiber²⁷ tied a rubber balloon to the end of the stomach-tube, and thus inflated the stomach. Neubauer²⁸ and Fleischer²⁹ determined the level of the liquid in the stomach by connecting the stomach-tube with a U-tube outside the body. Rosenbach³⁰ put water in the stomach, passed a tube into the water, and then, ausculting over the abdomen while he pumped air into the stomach, determined, by listening to the bubbles rising through the water, the upper level of the fluid. Kussmaul³¹ inflates the stomach by generating gas within. For this purpose, he gives 2 grm. of bicarbonate of soda and $1\frac{1}{2}$ grm. of tartaric acid, and the size of the stomach when filled with the gas thus generated can readily be determined by palpation and percussion. In using this method, a stomach-tube should be in readiness in case unpleasant symptoms should arise from over-distension. Purgess³² taking the average distance from the incisors to the cardiac orifice, finds how much farther the sound can be pushed downwards—a method applicable only with the stiff sound, and liable to the same objections as Leube's method.

Having spoken at length of the various methods recommended, before speaking of the conclusions to be drawn for diagnosis from these tests, I will briefly describe the methods of procedure which I have selected as best adapted for use for clinical purposes—substantially those of Riegel.

The patient's history should first be taken, and, if there is a recent history of hæmatemesis, the tube should not be used. The abdomen should be carefully examined, inspected, palpated, percussed, and ausculted. The chest should also be examined, for

¹⁹ Güinzburg, *Centrabl. f. klin. Med.*, Oct. 1, 1887.

²⁰ Sticker, *Deutsche Med. Zeitung*, Feb. 28, 1887.

²¹ Uffelmann, *Zeitschrift f. klin. Med.*, viii, 392, 1884.

²² Von den Velden, *Volkmann's klin. Vorträge*, No. 280, 1886.

²³ Ewald, *Op. cit.*

²⁴ Sticker, *Art. cit.*

²⁵ Leube, *Die Magensonde*, 1879.

²⁶ Penzoldt, *Die Magenverwässerungen*, 1876.

²⁷ Schreiber, *Deutsches Archiv f. klin. Med.*, xxix.

²⁸ Neubauer, *Prager Med. Wochenschr.*, No. 14, 1878.

²⁹ Fleischer, *Ref. Leube*, *Op. cit.*

³⁰ Rosenbach, *Volkmann's klin. Vorträge*, No. 153, 1879.

³¹ Kussmaul, *Volkmann's klin. Vorträge*, No. 151, 1880.

³² Purgess, *Deutsches Archiv f. klin. Med.*, xliii, 654, 1879.

the tube should not be used if there is a thoracic aneurism. Leube recommends a tube of 11 mm. diameter (33 French), with a calibre of 7 mm., but a smaller one will answer — my own is about 9 mm. (25 French). The patient should sit erect, the head thrown a little back, the mouth well open, and the tongue may be depressed and pulled forward a little by a spatula or the left index finger. The tube is then passed into the fauces, past the epiglottis, and into the pharynx. Once engaged in the œsophagus, there is no further trouble, except that it may stick for a moment at the cardiac orifice. If it does, a little water poured into the tube will overcome this obstacle. If the patient begins to retch or to show signs of suffocation, he should be told to take deep breaths. It is rarely necessary to withdraw the tube. It is certainly not easy to get a tube into the larynx of a sane man. If cocaine be used — and it makes the process easier — such an accident may be possible, although I doubt it. It is well to wait a moment, however, to see if the patient breathes naturally. When the tube reaches the stomach, it generally happens, unless the stomach be quite empty, that we hear a bubble or two of air come up the tube — a point mentioned at a meeting of the Section a year or two ago by Dr. Boland. I have found that milk is a good material to lubricate the tube with to facilitate the introduction, being much less nauseating than vaseline or oil. To wash out the stomach, a piece of rubber tubing is connected with the stomach-tube, with a funnel at the end, and about a pint of warm water is slowly poured into the funnel, holding the funnel end well up. By suddenly lowering the funnel, the contents of the stomach may thus be siphoned out. In withdrawing the tube, care must be taken to compress the end tightly before withdrawal, so that the contents of the tube may not drop into the larynx. If the tube be passed through the nostril — the favorite way of introduction when it is used for feeding the insane — the patient may lie down. In the cases that I have tried, it seems less disagreeable to the patient to pass it through the nose, but as I never tried both methods on the same patient, it is hard to make comparisons. Patients sometimes get so used to the passage of the tube that they will swallow it down themselves. The dangers of the procedure are slight, less than those of catheterizing the bladder. The chief risk, of course, is of passing the tube into the trachea and setting up an inhalation pneumonia, but this is not great, except among the insane. Slight traces of blood are of no account. One patient reported to me raising half a teacupful of "blood and corruption" after the first passage of the tube, but it seemed to do no harm. It might be well to tie a string to the tube, for in a case reported the whole tube was swallowed.

Having taken the patient's history, and made a careful external examination, I prefer first to get a specimen of the gastric juice. This I do by expression by Riegel's method, having the patient come to me about three hours after a meal. Having passed the tube, external pressure over the abdomen, or a voluntary effort on the part of the patient, will generally press out a certain portion of the contents of the stomach. Having filtered it, I test the acidity of the filtrate by litmus and Congo papers, and then I have thus far tested for free hydrochloric acid with tropæolin and methyl violet. Hereafter I shall use Günzburg's test. I then test for lactic acid with Uf-

fermann's reagent, reserve about 1 cc. of the juice for a quantitative test, and, if there is enough, divide the rest of the juice into three parts to test its digestive power. All this requires only about an ounce of gastric juice. If abnormal fermentation is suspected, I shake with ether, and smell the residue to detect butyric or acetic acid. The next day, or later, I prescribe Leube's test breakfast — soup, steak and bread — taking care to measure the size of the steak and bread taken, and the quantity of soup. Seven hours later I wash out the stomach, taking care that the patient eats nothing between whiles. During one of the visits Penzoldt's test for absorption may be made, and between them the patient may be given a dose of salol with instructions to save several specimens of urine passed every half-hour after taking it. For determining the size of the stomach Penzoldt's fluid test is the simplest, but, if it prove unsatisfactory, it may be supplemented by Kussmaul's test.

What do we learn from all this? What is the good of such an examination, which seems so elaborate, yet which is really comparatively simple — less difficult, except as far as obtaining the juice, than a thorough examination of the urine? By it, as I said at the beginning, our knowledge of diseases of the stomach has been put on a firm foundation. I am so fully convinced of the value of these methods that I am ready to say that a man who tries to treat a serious and obscure case of gastric disturbance without resorting to them, is as guilty of negligence as the man who tries to treat an obscure case of thoracic disease without using the stethoscope.

The most important question refers to the presence or absence of free hydro-chloric acid in the gastric juice. The weight of evidence is decidedly in favor of the opinion that in cancer of the stomach there is no free hydro-chloric acid in the gastric juice. The chief authority opposing this view is that of Cahn and von Mering, who, by the method spoken of above, have found acid in cancer. Rosenbach⁸⁵ alone claims to have found hydro-chloric acid in cancer by the ordinary tests. The experiments of Cahn and von Mering, however, have recently been repeated by Honigsmann and v. Noorden,⁸⁶ who believe that the juice in cancer does not contain the free acid, but acid combined with unstable albumen derivatives, which are broken up by the method employed. If, then, the gastric juice constantly reacts to the ordinary tests with tropæoline and methyl violet, it is safe to say that there is not cancer. The absence of hydro-chloric acid, however, is not pathognomonic of cancer, for it has also been found absent in atrophy of the stomach, and in the backward flow of bile (Riegel),⁸⁷ in amyloid disease of the stomach, and temporarily in catarrh, from increase of mucus, and in febrile diseases (Edinger).⁸⁸ In such cases the time of digestion is, of course, prolonged, and the digestive power of the juice is impaired, even if hydro-chloric acid is added, showing that there is a decreased amount of pepsine.

In contradistinction to the cases where hydro-chloric acid is absent come those where it is increased, or where there is a continuous secretion of gastric juice (Reichmann,⁸⁹ Riegel).⁹⁰ This condition gives rise

⁸⁵ Rosenbach. *Centralblatt f. klin. Med.* 6 Aug., 1887.

⁸⁶ Honigsmann and v. Noorden. *Zellschr. f. klin. Med.* xiii., 57, 1887.

⁸⁷ Riegel. *Arts. cit.*

⁸⁸ Edinger. *Berlin. klin. Wochenschr.*, 1 March, 1886.

⁸⁹ Reichmann. *Berlin. klin. Wochenschr.*, 2 Oct., 1882.

⁹⁰ Riegel. *Deutsche Med. Wochenschr.*, 31 July, 1887.

to thirst, heart-burn, pain at night, and acid vomiting. The stomach must be washed out at night, and then the tube passed before breakfast the next morning. In these cases the stomach is found to contain 180 to 300 cc. of an acid fluid, which digests albumen, and gives the reactions for hydro-chloric acid. This is the only pathognomonic test for this condition. The amount of acid may also be increased to 0.3% and over.³⁹ Riegel⁴⁰ believes this condition to be quite common. It is of especial interest as pointing to a possible cause of ulcer, the extreme acidity of the juice rendering self-digestion easier. Some of the symptoms are like those of ulcer, and in ulcer there is usually an extreme acidity of the juice.⁴¹

The detection of other acids points to abnormal processes of fermentation going on in the stomach, as in catarrh or dilatation of the stomach. The significance of the digestive test has been mentioned in connection with the absence of hydro-chloric acid. The tests for absorption and muscular activity have been too little studied as yet. The muscular activity would naturally be diminished in dilatation, where the methods for determining the size of the stomach are also called for. When there is digestive disturbance, but the stomach digests a test breakfast in seven hours, and the juice is normal, the condition is often spoken of as "nervous dyspepsia."⁴² Many cases are undoubtedly due to some nervous disorder, while in others the absorbent power and the muscular activity of the stomach have not been carefully tested. Where there are other signs of a neurotic condition the term may be used, but at best it is vague, and in many cases we can define the numerous nervous affections of the stomach more exactly.

What do these new methods teach us in regard to treatment? Enough to cause us to alter our present methods. In the majority of cases there is a normal or excessive amount of hydro-chloric acid, hence the common exhibition of it is needless, and often injurious. Where the acid is in excess we should not depend on alkalis. The stomach should be washed out at night, Carlsbad water given in the morning, and the stomach given increased work by giving the patient an albuminous diet, avoiding carbohydrates. When acid is absent, or much diminished, the ordinary dose ($\pi v-x$) is much too small. Ewald⁴³ has calculated that to render neutral juice properly acid, thirty to forty-five minims should be given after each meal, in three doses fifteen minutes apart, beginning about an hour after meals. When acidity of the stomach is due to lactic acid, from fermentation, this should not be combated solely by alkalis, although Carlsbad may be used. The stomach should be washed out, and hydro-chloric acid given, for it will be remembered that when hydro-chloric acid is formed during digestion it checks the formation of lactic acid. In catarrh and dilatation washing out the stomach is a remedy to be first employed. In muscular insufficiency strychnine and very mild faradic currents may prove serviceable. In "nervous dyspepsia," as I have long believed, special treatment is uncalled for; we must build up the nervous system, and the stomach will take care of itself.

I have said nothing of that panacea for all disturbances of digestion, of which at least nineteen varieties are brought to our attention weekly, namely, pepsine. I have always acted on the statements which the physiologists have been making for years, that pepsine is required for digestion only in small amounts, and that hydro-chloric acid was the important factor. In the great majority of cases there is plenty of pepsine in the gastric juice, and the addition of any more is needless, and therefore wrong. In a few instances where partly digested food is to be given, pepsine becomes necessary in its preparation, otherwise the use of pepsine is thoroughly unscientific.

I have dwelt chiefly upon the methods of research, referring briefly and cursorily to these points where they throw light on the diagnosis and treatment. The thorough examination is not agreeable to the patient, although it is not dangerous, and it takes a certain amount of time and trouble. I can merely repeat that the more I try it the more firmly I am convinced of its value and necessity, and I fully agree with Ewald's dictum.⁴⁴ "I grow more convinced daily that an exact diagnosis of gastric diseases, and a sound treatment based on it can be obtained only by a careful chemical examination of the gastric juice or the gastric contents by the methods of qualitative and quantitative determination of acids as given above."

AN EXERCISE IN THE EXTEMPORIZATION OF LITTERS FROM RIFLES AND GUNSINGLS.

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For a number of years past, the subject of the conveyance of the disabled as an important part of early aid in accidents and emergencies, has been a popular one. The St. John's Ambulance Association in England, the Samaritan Societies in Germany, and still other bodies in other countries, all serving under the Red Cross, have contributed to this end. Foreign armies have long possessed thoroughly organized corps devoted to this work, and now the National Guard of many of our States is provided with an ambulance corps, while the regular army, with its hospital corps supplemented by four "company bearers" from each company, troop, and battery, has a foundation upon which is being erected a system of "first aid" that will be a material advance upon the work already done. In a recent lecture before the Military Service Institution, the writer presented some of the results of a considerable number of experiments as to the best methods of conveying the disabled by human bearers. The well-known method of carrying the disabled upon a litter extemporized from two rifles and their gunsling was particularly pleasing to many, and a strong desire has since been expressed for a system of movements by which such a litter could be constructed with the least confusion and delay.

In deference to this desire, the following exercise has been devised. Unless otherwise specified, the movements are to be executed in accordance with the authorized United States Infantry tactics:

The bearer company or squad being formed in two ranks, with their pieces at "carry arms," the medical officer commands, (1) *Rear open order*, (2) *MARCH*, which is performed in the usual manner. He then

³⁹ Von den Velden. Volkman's klin. Vorträge, No. 290, 1886.

⁴⁰ Riegel. Zeitschr. f. klin. Med., xii, 426, 1887.

⁴¹ Korczyński and Jaworski. Deutsche Med. Wochenschr., No. 47 to 49, 1886.

⁴² Leube and Ewald. Verhandl. d. Congress. d. inner. med., iii, 204, 1884.

⁴³ Ewald. Berlin. klin., Wochenschr., No. 3, 4, 1886.

⁴⁴ Ewald. Klinik der Verdauungskrankheiten, I, 107, 1886.

continues, (1) *Front rank, about.* (2) *FACE.* After this command is executed, he commands, (1) *Order,* (2) *ARMS.* The company is now prepared to construct the litters. Accordingly, the medical officer commands, (1) *Prepare,* (2) *LITTER.*

At *litter*, each man grasps the barrel of his rifle just below the muzzle, and lifts it directly forward until the stock rests upon a point midway between the front and rear rank. Each rear rank man lets its gunslung out to its greatest length; at the same time, the front rank man frees the upper end of his gunslung entirely from his piece. The rear rank man passes his gunslung over the rifle of the front rank man, and then, with his left hand, grasps the rifle of the front rank man, just below the muzzle; the front rank man then passes his gunslung about the rifle of the rear rank man, and, drawing it through the upper ring of his own rifle, hooks it at its greatest possible length, and then faces about to the front.

The medical officer then commands, (1) *Carry,* (2) *LITTER.*

At *litter*, the front rank man stoops and grasps the stocks of the rifles, and he arises to an erect posture holding them in his hands, with his arms extended by his side; at the same time that the front rank man arises with the stocks, the rear rank man lowers the muzzles until they are held by his side also.

It is now seen that an excellent litter has been formed with the rifles as the side poles, and the interlacing gunslings as the bed. A disabled man should be carried on this litter in a sitting posture, leaning back upon the chest of the rear bearer. To place a patient upon this litter, it should be lowered to the ground in obedience to the command, (1) *Lower,* (2) *LITTER*, and the patient made to sit upon it, facing in the direction of the stocks. It should then be lifted in obedience to the command, (1) *Lift,* (2) *LITTER.*

If it is desired to separate the litter again into its component parts, the medical officer commands, (1) *Order,* (2) *LITTER.*

At *litter*, the front rank man lowers the stocks of the rifles to the ground, and faces to the rear; the rear rank man, retaining his grasp at the same point upon the rifle-barrels, draws the stocks to a point midway between the two ranks, raising the muzzles to the height necessary to hold them easily in front of him.

The medical officer then commands, (1) *Break,* (2) *LITTER.*

At *litter*, the front rank man unhooks his gunslung and removes it from the rifle of the rear rank man, seizes his rifle and withdraws it from the gunslung of the rear rank man. Both bearers fasten their gunslings in the original position and bring their pieces to "order arms." The medical officer then commands, (1) *Carry,* (2) *ARMS*, following with (1) *Front rank, about,* (2) *FACE*, and bringing the company back to its original formation by the command, (1) *Close order,* (2) *MARCH.* The company is then dismissed in the usual way by the commands, (1) *Arms,* (2) *PORT*, and (1) *Break ranks,* (2) *MARCH.*

A litter extemporized in this manner has been shown by experience to be of the greatest value in the field, where the accessories of litter-bearing are very apt to be deficient or entirely absent. Its construction is equally adapted for any number of men from two to a hundred. A bearer company carrying this variety of extemporized litter may be manoeuvred in exactly the same manner as an infantry company in

double rank formation. The evolutions are exceedingly effective, and, while not the less useful in actual service, are particularly adapted to exhibition occasions.

REPORT OF PROGRESS IN ORTHOPÆDIC SURGERY.¹

BY E. H. BRADFORD, M.D., AND R. W. LOVETT, M.D.

THE MECHANICAL PRODUCTION OF KNOCK-KNEE, FLAT-FOOT, ETC.

It is impossible, in the short space available here to do justice to Mr. Arbuthnot Lane's very admirable paper² on the pathology and physiology of the deformities of young life. One line of argument runs through it all, that the cause of all these deformities (knock-knee, flat-foot, lateral curvature, etc.), is mechanical, and brought about by the child's habitually assuming what he calls "attitudes of rest." Take knock-knee for example, in the erect position when the heels are together the femur and tibia form an angle open outward, and the external condyle transmits the body weight more than the inner one. A persistent assuming of this position, or even a more extreme one, with the feet apart, by even a healthy child, would be apt to lead to atrophy of the cartilage of the external condyle where the pressure comes, and hypertrophy of the inner one (in a former paper Mr. Lane has demonstrated these pressure results in healthy adults), and knock-knee results. If the assumption is correct, the wonder is, as the writer says, that so few children have knock-knee. The treatment of early cases should be to raise the inner side of the sole. Flat-foot often coexists with knock-knee, not that one is the result of the other, but that both are the results of this assumption of attitudes of rest. Partial adduction of the foot is the position of activity. Abduction, the position of rest assumed in the easy erect posture. Abduction habitually assumed, leads to rotation of the os calcis, and displacement of the astragalus and yielding of the ligaments come secondarily. Treatment should be directed to repairing the loss of tone and vigor, low-heeled boots should be worn, exercises should be adopted to strengthen the adductor muscles of the foot, and if necessary, some of the numerous mechanical devices should be resorted to. Round shoulders and lateral curvature in the same way are traced to static causes. One statement with regard to the latter might be questioned; "You can get no lateral flexion of the dorsal spine unassociated with what is called a rotation of the bodies of the vertebrae around a vertical axis."

With regard to rachitic deformities of the legs the ordinary cause is asserted to be a rotation of the sacrum, apparently in consequence of the flexed spine. The pelvis rotates secondarily, the ilio femoral ligaments are consequently strained upon and the child stands with thighs necessarily flexed. In this position the weight of the body falls inside of the knees and a tendency to bow-legs results. The treatment should be extension of the thighs and pelvis in the recumbent position.

LOOSE BODIES IN THE JOINTS.

König³ writes opposing the theory that loose car-

¹ Continued from page 522.

² Guy's Hospital Reports. 1887. p. 241.

³ Deutsch. z. f. Clin., Bd. xxvii, Heft. 1 and 2, p. 90.

tilages are so frequently produced by actual tearing off of the articular cartilages by a wrench or a strain, as Hueter, for example, supposes. Rather, he says, consider them the result of a local necrosis, produced by the injury and consequent inflammation which has lead to their separation. He does not attempt to deny that an actual tearing off does occur, but he thinks it very uncommon and only to be produced by very great violence. The process which sets free the necrotic pieces, he classifies as an osteochondritis of spontaneous origin. He alludes to the frequent occurrence of these free bodies in the elbow, as well as in the knee.

Professor Humphrey²⁵ went so far as to deny the possibility of the formation of these loose bodies by the detachment of pieces of the articular cartilages, and he adds: "I can scarcely suppose that any one really believes that a portion of bone detached by the process of necrosis, can be converted into one of these bodies."

Mr. Howard Marsh²⁶ replies to him and mentions a specimen in St. Thomas' Hospital Museum where Mr. Simon removed a loose body from the knee-joint, consisting of a piece of cartilage with adherent bone, evidently freshly clipped off of the end of the femur.²⁷ With regard to a piece of bone becoming converted to one of these bodies, a case of Mr. Teale's showed a loose body which fitted exactly into a breach made in the inner condyle of the femur, and Mr. Marsh quotes four other cases in support of the view that these bodies are certainly sometimes clearly caused by tearing off small pieces of cartilage and bone.

WRY-NECK.

Mr. Keetley²⁸ would confine the term "wry-neck" to contraction of the sterno-mastoid muscle and to that alone, and he advocates the operative treatment as soon as ever the wry-neck has actually developed. Mechanical treatment, without operation, except in very rare cases, he condemns. The methods are of course two, subcutaneous and open division of the muscle. He first does the subcutaneous operation, and if rectification is not possible after that, he at once passes on to the open method and cuts the bands still resisting. Extension and counter-extension are then made "by weights attached by adhesive strapping to the head and upper arm respectively," commencing with two weights of four pounds each, and extension should be kept up a month and followed by daily manipulations to keep the head in place.

Dr. J. J. S. Davis²⁹ in writing of congenital torticollis, gives a very complete bibliography of the subject and sums up a somewhat long article as follows:

(1) "That it is rare and doubtful if ever congenital torticollis is produced through the act of delivery . . . but that the cause may often be found in the low vitality of the fœtus of scrofulous parentage; (2) that complete resection of all the contracted tissues is necessary before attempting to restore the head to its normal position; and (3) that it should be kept in the normal position ten or fifteen days.

DISEASE OF THE ELBOW-JOINT.

Kummier³⁰ in a most thorough article on disease of

the elbow-joint has found, in a large number of cases, no instance of general miliary tuberculosis caused by operative interference, as claimed by König; and operative treatment is especially advocated in severe forms of the disease, either complete or partial resection, arthrectomy, or evidement. In complete excision, Ollier's Z-incision is to be preferred, and no attempt should be made for first intention in fungous disease, to the sacrifice of thorough drainage. Excision for the cure of ankylosis has not, in the hands of the writer, given satisfactory results, as a rule. The conservative treatment, fixation, etc., through of use in the lighter cases, is not satisfactory in the severe tuberculous cases.

Mr. Thomas³¹ under the heading of "Contributions to Surgery and Medicine," gives first, some valuable hints about the diagnosis of early Pott's disease, and mentions brown paper wet and bound on as a sufficient treatment for early cervical disease in infants. When deformity has occurred in the spine anywhere he advises against all treatment which is calculated to lessen the angular deformity, and he says that he uses himself the "dorsal cuirass," advocated by Dr. Bauer.³² Of plaster-of-Paris jackets Mr. Thomas speaks as follows: "I am equally convinced that the plaster-of-Paris casing, now so popular, is the most inefficient and irrational of all forms in use." With regard to disease of the elbow-joint he insists that the joint should be put up at the angle of 45° as giving better rest to the muscles, and if ankylosis does take place, as affording a more useful arm. The remainder of the book is devoted to questions of general surgery.

ORTHOPEDIC TREATMENT OF PARALYSIS OF THE ANTERIOR MUSCLES OF THE THIGH.³³

The disability of patients affected with paralysis of the extensor muscles of the thigh is well-known to be very great, and Judson calls attention to the occasional amputation of such limbs on this account. The treatment which he proposes is very simple; by means of a steel upright running up the inside or outside of the leg terminating below in a club-foot retentive shoe, with a joint at the ankle; an anterior steel arm embraces the limb above the knee, and high up on the thigh a posterior arm half encircles the leg. In this way the knee is kept from bending, and the whole leg is supported.

OPERATIVE TREATMENT OF PARALYTIC JOINTS.

Zinsmeister³⁴ writes of the procedure of making an artificial ankylosis in joints which are useless from paralysis. Albert was the first to suggest and perform an operation in a case of infantile paralysis resecting the knee. Winiwarer has repeated the operation, Wolf has done the same thing for the shoulder, and Lesser and Rydiger on paralytic varus. The result in all these cases were excellent. Albert has recently operated on 10 patients; 14 operations, 5 in the knee, and 9 in the foot. In 8 of the cases the paralysis was due to acute poliomyelitis, and in 2 this followed apparently an acute infectious disease. The results were satisfactory in all. Six weeks after the operation, as a rule, the patients were able to go about. The operation is especially indicated for the poor who are

²⁵ Brit. Med. Jour., March 17, 1888, p. 613.

²⁶ Brit. Med. Jour., April 14, 1888, p. 786.

²⁷ Path. Soc. Trans., xv., p. 206.

²⁸ Annals of Surgery, April, 1888, p. 252.

²⁹ N. Y. Med. Journal, February 4, 1888, p. 114.

³⁰ Deutsch Zeitschrift f. Chirurgie, 27 Bd., 1 und 2 Hefte, 1887.

³¹ Hugh Owen Thomas. London, 1887. Fractures, dislocations, diseases and deformities of the bones of the trunk and upper extremities.

³² Orthopædic Surgery. N. Y., 1868, p. 138.

³³ Med. Rec., Feb. 4, 1888.

³⁴ Deutsche Zeitschrift für Chirurgie. Bd. xxvi, p. 498.

unable to procure appliances for locomotion. Albert does not advise a typical resection, but a simpler procedure; namely, the removal of the cartilaginous surface of the joint. This is sufficient for anchylosis, and wiring of the bones is not necessary. It is not necessary to remove the synovial membrane. It is reported by the writer that a typical aseptic first intention without suppuration does not give as firm an anchylosis as if there is some suppuration, and he advises keeping a small layer of iodoform gauze in the wound until slight suppuration takes place. In paralytic club-foot it is better to remove the astragalus.

Roser⁸⁵ reports a case of absorption of the head of the humerus, the formation of a loose joint somewhat similar to that seen following tabes dorsalis, where no disease of the chord existed.

The affection was chronic and painless. It developed in an adult secondarily to a plegmon of the hand, but no pain, stiffness, or loss of function of the affected shoulder existed. On examination an abnormally loose shoulder-joint was found, with friction on moving the shoulder forcibly. A cold abscess had formed around the shoulder. Excision of the shoulder was performed, and the head of the humerus and the opposing surface of the acromion was found absorbed, as was also the long head of the biceps and the tendons of the supra and infra spinatus.

SECONDARY SYPHILITIC AFFECTION OF THE JOINTS.

Cayla⁸⁶ reports two cases with a syphilitic affection of the synovial membrane of the knee-joint, occurring during the secondary stage of syphilis, which disappeared under anti-syphilitic treatment and immobilization. The pain was not severe, and the effusion was not great. There was no redness or symptom suggesting articular rheumatism. Cases of the sort are quite uncommon, but have been observed in Fournier's clinic.

THE RELATION OF SYPHILIS TO RICKETS.

MM. Cuzin and Iscorresco,⁸⁷ after an extended study of this subject, arrive, among others, at the following conclusions: The bony lesions in the two conditions are either quite different, or are common to other diseases. Syphilitic bones never present the spongy tissue peculiar to rickets. Rachitic bones never show the characteristic multiple osteophytes of syphilis. Anatomically the two processes are entirely distinct. Syphilis may precede, but cannot be viewed as giving rise to rickets, though it sometimes produces osseous deformities, which may be included within the general title of pseudo-rachitis.

Moncorvo,⁸⁸ writing of his experience in Rio Janeiro, allows that hereditary syphilis furnishes 60% of the cases of infantile disease. These and rickets he finds present in 45% of the children coming under his observation. More than two-thirds of the rachitic children in his practice show signs of syphilis, and it is rare to find a child with hereditary syphilis whose bones are not rachitic.

SPINA BIFIDA.

Rocklinghausen⁸⁹ has investigated thirty-one cases of congenital deformity of this sort with a view to es-

tablishing the pathology of the affection, and they confirmed the Daresti-Koch theory that the cord in such cases remained in the stage of the medullary plate, and not that the medullary canal was primarily closed and then opened by what was called hydromyelia. It was found that the exterior of the cyst wall was not dura but pia mater. Pressure is asserted to be the fundamental cause in all the varieties, and not, as in the old view, an embryonal hydromyelos.

Sutton⁹⁰ reports a case of spina bifida occulta, where there were also present lateral curvature, talipes equinus of the left foot, atresia ani, imperforate pharynx and single kidney.

CLUB-FOOT.

Shaffer,⁴¹ speaking of Phelps's method of treating club-foot by open incision, says that many cases apparently to be classed as "inveterate" yield readily to simple mechanical treatment, while on the other hand, apparently simple cases offer much difficulty. His own experience leads him to divide congenital club-foot into three varieties: (1) muscular; (2) ligamentous; (3) osseous; but a clinical distinction is not always to be made between them. The method of treatment which he advocates is, to start with an efficient traction apparatus, and if, after a sufficient length of time, the deformity does not yield to this, to proceed to tenotomy and subcutaneous division of the ligaments, and then to go on with traction as before. Under these circumstances open incision and osteotomy will be rarely called for.

CONGENITAL TALIPES EQUINO VARUS.

A very valuable article is contributed by Mr. C. L. Scudder,⁴² of the Harvard Medical School, embodying the results of many original dissections of cases of talipes, as well as of the fetal foot, and his conclusions are:

(1) The obliquity of the neck of the astragalus is greatest in cases of varus, less in normal, and least in adult feet.

(2) A change in the obliquity of the neck of the astragalus is a part of the development of that bone, whether it be in a normal or varus foot.

(3) In all probability this obliquity of the neck of the astragalus offers greater resistance to the reduction of the deformity in cases of congenital varus or equino varus past the first few years of life than has hitherto been supposed.

With regard to Berg's theory of retarded inward rotation of the thigh as the cause of the deformity, Mr. Scudder concludes from an examination of sixty-nine fetuses, "that the position of varus or varo-equinus with rotation outward of the thigh is present in all twelve fetuses of the average age of six weeks." That for the same age beyond six weeks neither the position of the feet nor the degree of the rotation of the thigh inward is constant. That rotation of the thighs outward is quite a constant phenomenon, occurring in fifty-one out of the sixty-nine cases; and the cases which showed no rotation were, as a rule, older than the cases presenting outward rotation. That there is probably no necessary connection after the sixth week of fetal life, between the age of the fetus, the rotation of the thighs, and the position of the feet. As to the

⁸⁵ Centralblatt f. Chirurgie, March 31, 1888.

⁸⁶ Centralblatt f. Chirurgie, March 3, 1888, p. 171.

⁸⁷ Am. Jour. Med. Sci., Feb., 1888, p. 192.

⁸⁸ N. Y. Med. Record, Sept., 1887.

⁸⁹ Auk. f. Klin., Bd. 8, II. G. Review in Arch. of Ped., Feb., 1888, 123.

⁹⁰ Lancet, Nov. 5, 1888.

⁴¹ N. M. Schaffer. The treatment of Club-Foot by open incision. N. Y. Med. Journal. Dec. 31, 1887, 733.

⁴² Boston Medical and Surgical Journal, Oct. 27 and Nov. 3, 1887.

feet alone, "as the age increases the varosity, if I may be allowed the expression, decreases." And from an examination of hospital cases in very young children, he concludes that Berg's statement "that the leg is rotated outward in all cases born with this deformity" is incorrect.

CLUB-FOOT.

At the beginning of his article, Dr. Hawes⁴⁸ remarks that "to the average practitioner, distant five hundred miles from the nearest instrument maker, the treatment of talipes by the aid of an ill-fitting club-foot shoe is annoying and unsatisfactory," and he advocates the use of a simple home-made apparatus, which he has found of much use. Two pieces of thin board are hinged together, one piece to go back of the legs and one under the feet. Each leg is secured by straps to the larger piece of board passed about the calves and ankles. On the smaller piece of board are screwed two strips of metal, which are applied to the inner side of the foot from the instep to the base of the toe, in such a place that the foot is held in the normal position. The equinus can be corrected by tightening a cord which connects the free edges of the two pieces of board. From the cut it would appear that the apparatus would produce eversion rather than correction of the deformity. However, in using it Dr. Hawes finds "that in the majority of cases, by its use, aided by local stimulation, the child is ready to dispense with all appliances when old enough to walk."

ANEURISM AFTER TENOTOMY FOR CLUB-FOOT.

Walsham⁴⁹ reports the appearance of an aneurism as large as a marble two weeks after a subcutaneous division of the plantar fascia in a boy seven years old. There was a smart hemorrhage from the wound at the time of operation, but it was easily controlled, and the usual plaster-of-Paris bandage was applied. Mr. Walsham thinks that a wound of the artery is not uncommon, but the subsequent development of an aneurism is certainly very rare, and in this case, perhaps, to be attributed to the fact that the mother allowed the child to walk too soon. In this case the aneurism was cured by pressure over the posterior tibial artery, which was maintained for two months.

DISTORTION OF PELVIS CONSEQUENT ON CLUB-FOOT.

Meyer⁴⁶ reports that the rotation of the limb consequent on club-foot necessarily alters the flexion-plane of the knee, bending the knee forward with some rotation; also throwing the pelvis forward, necessarily causing an alteration of the shape of the acetabulum and of the head of the femur. A slight narrowing of the pelvis (cross diameter) also occurs, as well as an increased lordosis of the spine.

TREATMENT OF CLUB-FOOT.

Krauss⁴⁶ advises the use of simple appliances in the treatment of club-foot, making the surgeon independent of the instrument-maker. He makes use of a simple appliance, consisting of a wooden sole-plate with a steel upright on the outer side of the leg, and an arrangement for increasing pressure (by means of a screw) for the inner sides of the metatarsal and great toe. The appliance is covered with thick felt, and the foot and ankle secured to the wooden sole-

plate by means of plaster-of-Paris bandages applied over the stocking, and without much cotton applied to the foot. Correcting-screw pressure is exerted upon the foot secured by the plaster bandages.

Tenotomy of the tendo-Achillis is not needed in young children, but in older cases the tendons and fascia should be divided. This has to be repeated in the severest cases. The results reported are most excellent, and are quite numerous.

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Clinical Memoranda.

TYPHOID FEVER IN A CHILD THREE YEARS OF AGE.

BY EDWIN FARNHAM, M.D., CAMBRIDGE, MASS.

As records of the temperature curve of typhoid fever occurring in young children are, according to my experience, comparatively rare, the following case may be of interest.

October 3, 1887, this child's father who had been feeling poorly for some days went to bed and developed an attack of typhoid fever of medium severity. November 1st he was convalescent, and about this time the daughter complained of being tired after going out, was fretful, and indifferent to what usually interested her, and in the afternoon was hot and flushed.

⁴⁸ *Trans. Col. State Med. Soc.*, 1887, 59.

⁴⁹ *Lancet*, January 23, 1888.

⁴⁶ *Centralblatt f. Chirurgie*, February 1, 1888, p. 18.

⁴⁶ *Deutsche Zeitschrift f. Chirurgie*, Bd. 25, Heft. 3 and 4, 1888.

She was put to bed November 7th. During the continuance of her illness there were diarrhoea, scanty urine, slight tympanites, complete anorexia, so that at times food had to be poured down her throat, thirst, nausea, vomiting once or twice, mild delirium on a few nights, slight bronchitis throughout the entire fever, enlarged spleen, rose spots coming out once, and few in number.

Until the evening of November 9th the temperature was taken in the rectum, after that in the axilla on account of the nervous disturbance caused by the first method. The thermometers used were self-registering ones made by Hicks, of London for Leach & Green, of Boston. On the morning of November 11th, the thermometer was broken before the temperature had been taken, and another could not be got till the evening.

	Morn.	Even.		Morn.	Even.
Nov. 7	104.8	105.8	Nov. 17	95.4	97.4
" 8	103.2	106.2	" 18	95.4	95.2
" 9	102.2	104.2	" 19	96	97
" 10	101	104.4	" 20	95.4	96.2
" 11	103.4		" 21	95.6	97.2
" 12	101.2	103	" 22	95.2	97.4
" 13	99.6	102.8	" 23	96.6	97.8
" 14	98.8	101.2	" 24	96.6	97.6
" 15	97.6	102	" 25	97	98.2
" 16	96.6	98.8	" 26	96.4	98.4

From this time the temperature did not drop below normal.

Through the period of low range of the thermometer beyond a slight irregularity of the heart's rhythm, the child developed no unfavorable symptoms, but gained steadily in strength, slept well, and eat in a satisfactory manner.

Is a period of thermometrical depression after typhoid fever common in young children, and unnoticed because not looked for, or is its occurrence exceptional?

A CASE OF PELVIC ABSCESS. DEATH FROM HÆMORRHAGE.

BY E. T. HUBBARD, M.D., ROCHESTER, N. H.

A. W., aged thirty-four, married, had had several miscarriages; had been treated by a homœopathic gentleman for neuralgia of left hip, for two months previous to my seeing her. Saw her for first time November 11, 1887, found her suffering from severe pain in left hip, and lower part of abdomen. Pulse 120, temperature 103°, having night sweats, appetite poor, bowels constipated, urine normal in color, but scanty. Could get no history of abortion or injury. Upon examination found quite a large tumor in left inguinal region above Poupart's ligament, with obscure fluctuation. The vagina presented a hard indurated appearance and was bathed with a thick creamy pus which came from a fistulous opening in the posterior wall of the vagina just below the cervix uteri. I ordered hot poultices to be applied over lower part of abdomen and gave quinine and iron. At my next visit I found the patient more comfortable, temperature 102°, pulse 120; continued treatment for one week with the result of relieving her of all pain, temperature 100°, pulse 110; less swelling at night, but tumor increasing in size.

November 17th. Aspirated, and got about three ounces of thick yellow liquid, of the consistency of linseed oil. She got along fairly well with less pain

and a general amelioration of symptoms until December 18th, when the fistulous opening into vagina became closed, and pain began to be more severe.

Aspirated December 18th, and drew away about sixteen ounces of horribly offensive pus.

December 19th. She complained of pain in lower part of bowels, loss of appetite, and great wakefulness.

December 22d. Assisted by Drs. Daniel and Virgin, gave ether, and made incision just above Poupart's ligature in the middle of its course, as there was at this time a sense of fluctuation to be felt at this spot. After dissecting carefully, and separating the tissues by my finger more than the knife, keeping close to the inner aspect of the pubic arch, I reached the anterior wall of the abscess under the peritoneum. After making sure I had the abscess to deal with, by aspirating a little pus from it, I nicked it with the knife, and enlarged the opening with my finger. The pus gushed out in a horribly offensive stream to the amount of at least one quart, followed by a copious venous hæmorrhage from the interior of pus cavity. I placed compress above and applied a tight bandage which immediately controlled it. She rallied partially from the operation, but was taken with a chill which lasted one hour, being pulseless the most of the time, but under stimulants and external warmth, she rallied and passed a comfortable night. The next morning I removed the compress and washed out cavity with a solution of mercury bichloride, 1-2000. A few blood-clots came out at this time. I inserted a drainage-tube one-fifth of an inch in diameter by eight inches in length, and applied a pad of oakum to absorb pus.

I continued to wash it out daily with antiseptic solutions, the patient gaining strength, the temperature coming down to 98½°, pulse 100. Appetite good, slept well, and free from pain. I shortened drainage-tube until it was only three inches in length. On the fourteenth day after the operation, I had washed out the cavity as usual and found it growing smaller, and the discharge less in amount, and had flattering hopes of her ultimate recovery. While getting ready to introduce the drainage-tube I was horrified to see the blood spurt out in a bright red stream; I was surprised because there had not been one drop of hæmorrhage since the first day of the operation. I immediately passed my finger down into the wound which by this time had healed up to the size of the drainage-tube, and could feel the pulsations of the external iliac under my finger. I was then satisfied I had ulceration of this artery to deal with, as it lay close to the anterior side of the drainage-tube. As my experience with her in opening the abscess was anything but flattering, I did not deem it expedient to try to ligature the artery. I plugged the wound with absorbent cotton, knowing full well it was not a surgical procedure and also knowing that hæmorrhage would again take place, but I did not wish her to die under the knife, as I was almost certain she would if I attempted to ligature the external iliac artery. Hæmorrhage came on again the next day, and she finally died from exhaustion January 9, 1888. A peculiar feature in this case was to me that a patient suffering for nearly three months from pelvic abscess, should survive the operation for two weeks, and then die from hæmorrhage from ulceration of external iliac artery. This was the probable cause of death, though no autopsy was allowed. Possibly if the case had been taken in season it might have terminated more favorably.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

REGULAR meeting, Wednesday, April 11, 1888.

Dr. P. C. KNAPP read a paper on

THE PHYSICAL DIAGNOSIS OF THE STOMACH IN DISEASE.¹

Dr. E. G. CUTLER said: I am very much interested in this subject, and am only sorry that I was called away so that I could not hear the whole of the paper, but the few concluding remarks that I heard lead me to say that Dr. Knapp has gone over the ground very thoroughly. I have tried for some little time these methods of examining the gastric juice in patients that have complained of gastric disturbance, and have been, on the whole, quite satisfied with it. It does not help us out to a very great extent, but it does somewhat, and the difficulty that I have found, and I have no doubt that Dr. Knapp has met with it also, in the majority of cases where time is an element of consideration; namely, dispensary cases, it is rather difficult to get patients to come a second time for examination, so that you cannot determine very readily about the character of the gastric juice after treatment.

I didn't hear what he said about the tests. The ones which I have used, and which have proved of the most service in my hands, have been the ones for the hydrochloric acid with tropaeoline, and the methyl violet test, the ferric chloride and carbolic acid test, and recently I have been using the vanillin-phloroglucin test. I don't know whether Dr. Knapp mentioned that. I have found that rather better thus far than the others, although, with the precautions, and looking after the peptones, one can get along very well with the others. What he said about the necessity of pepsine I thoroughly agree with. It is quite rarely the fact that I give pepsin as we formerly used to do, in large quantities so many times a day; and I do turn more to hydrochloric acid, and, as he said, both Boas and Ewald have determined for us that the dose of hydrochloric acid is not usually sufficiently large.

I also agree to the fact that the so-called "nervous dyspepsia," in those cases which I have seen, have not shown any neurotic element that I could determine. My experience, of course, is not very large, but I have had several cases, and, as Dr. Knapp says, they were better treated by paying a little attention to their food and building them up generally. They always get along pretty tolerably well. I do not recall any case now that has not continued well. The first one that I saw was eight years ago, shortly after the disease was first written about by Leube, and that case has remained practically well ever since. She was treated almost exclusively without electricity, by other means, and has gotten along perfectly well. I had another case shortly afterward which has had several relapses, and is by no means well, who has these symptoms quite frequently. Another case that I had has passed out of my hands, and into the hands of an-

other physician. I understand, however, that it was for some other complaint that she was treated, and she appeared to be pretty well of the other trouble; at least it was not mentioned as a prominent symptom.

As far as the presence or absence of hydrochloric acid is concerned in cases of carcinoma, I have found it absent in cases which I believed to be carcinoma, but I have never had a case of autopsy, so as to prove it. I have found a very small amount in one or two cases which were believed to be chronic catarrh. In regard to the hyperacidity which Dr. Knapp speaks of, in cases where there is ulcer of the stomach, that has never come to my observation thus far. I have not seen a case of ulcer of the stomach for quite a long time, so far as I remember now. Certainly, I have no test of the juice in a case where I believed such a condition to exist. But I believe with him that it is an essential thing to do in some cases, and have not found great difficulty in persuading my patients to try it once, but I have met with difficulty in persuading them to try it more than two or three times, although I have now a patient whose gastric juice has been examined every week for some little time, who is improving constantly; but men, certainly in my experience, object to it less than women. Women do not seem to take to it very kindly. I have never met with any mishap in passing the tube, and take it. Dr. Knapp advocates the method brought forward by Ewald and Boas for getting the gastric juice.

Dr. KNAPP: For getting the gastric juice itself, I prefer Riegel's method.

Dr. CUTLER: That has the disadvantage of being rather dilute, and then, too, the question has occurred to me whether it would not be wiser for a person to use for the simple test just egg-albumen and little else. In that way, one eliminates the disturbing element of lactic acid which is usually found after Ewald's test breakfast. That is what I am doing now, using albumen as a food, and not the original test breakfast that they speak of.

Dr. FOLSON: There is one accident in using the stomach-tube which Dr. Knapp spoke of, and although the risk is not a great one, I think it is enough to be considered, so that some of the French physicians have devised various mechanical means to prevent it, one of which is to have a portion of the outside of the tube so made as to completely fill the esophagus. That danger is this: occasionally, at very rare intervals, the presence of the tube in the stomach causes very sudden and very violent vomiting, without very much warning. The food is regurgitated at once and without any apparent cause, and sometimes, after the patient has used the same tube a number of times, even without difficulty, and without the tube obstructing the natural movement of the epiglottis, it is very easy for some food to get into the larynx and cause inhalation-pneumonia. That has occurred a number of times. I don't know that it ought to prevent us from performing this test when it is necessary, but I can hardly believe that it is necessary so often as Dr. Knapp seems to think desirable; that is to say, I think, by paying very close attention to the clinical symptoms, we can relieve the symptoms without this danger.

There is another point, of which I have seen a number of cases, which is rather interesting, and that is dyspepsia, very obstinate and very painful, sometimes keeping the patient awake the whole night,

¹ See page 561 of the Journal.

without any very definite or ascertainable cause, and generally referred to some neurotic group of symptoms. I have seen quite a large number of these cases who have been through the hands of a large number of the profession, and who have had almost everything tried, and I have tried tonics of all sorts, and gymnastics, without relief of the trouble, and yet who are relieved by taking a very moderate dose of bromide of ammonium three times a day. It was a very great surprise to me to see the first case I treated. Since then I have used it in a number of cases, and I am convinced that there is a certain group of these neurotic cases which are not reached without something of the sort.

DR. CUTLER: I would like to ask Dr. Folsom if, in these cases of vomiting, the tube was not passed too far down.

DR. FOLSOM: I think not. One case occurred under my own eyes, where I was sure the tube was not in the stomach. I don't think it is a great danger, or can occur in a great number of cases, but it seems to me it is a thing to be thought of.

DR. CUTLER: I agree with Dr. Folsom, but it seems to me if a person is a little careful in the manipulation it would be very unlikely to occur. Of course, the fact that it has occurred would render it liable to occur again.

DR. KNAPP: In regard to that point which Dr. Folsom has brought up, I would say that it has always been my custom to pass the tube into the stomach.

DR. CUTLER: This for getting the gastric juice; but for feeding?

DR. KNAPP: Yes, for feeding I have always passed it completely into the stomach. I recall one case of very obstinate vomiting, where everything else had been tried. There had been some suspicion of malingering, but careful observation had convinced me that the man could not control his vomiting; he vomited everything that he was given, and nothing had any effect, except when we stood over him. Then he would not vomit for perhaps half an hour or an hour after taking the food, but during all that time there would be the constant retching and constant nausea, which was apparently very distressing; and he was finally fed by the stomach-tube — I didn't do it myself; it was after I went off duty — and after that there was no more vomiting.

DR. CUTLER: I think that is not a very uncommon occurrence for obstinate vomiting to be cured by the stomach tube. I have had it within a month in a case not so obstinate, where the person rejected food constantly. I would merely pass the tube down so as to be sure that it went into the œsophagus, and the food would stay. I have had a very few other cases. I don't say that it is not quite as well to pass the tube into the stomach, but it is not always necessary. That is what I mean to say.

DR. KNAPP: It is a way I got into in feeding by the stomach. I don't say that it is best, or that it is necessary.

DR. CUTLER: I have sometimes tried to have them stop, or swallow slowly, so that I could hear the food go in at the back of the stomach. I have tried all sorts of ways to do this, but I have never succeeded yet in making it slow in that way.

DR. FOLSOM: It is not necessary, Mr. Chairman, to pass anything into the stomach through the tube, because this violent vomiting is sometimes produced

by the simple presence of the tube itself, without passing anything into the stomach. If the tube is put in for experimental purposes, it will sometimes cause very violent vomiting, and with the tube near the epiglottis, it is very easy for food to get into the larynx.

DR. CUTLER: I agree that this may occur, but it should not deter a man from doing what is apparently necessary.

DR. FOLSOM: I don't think it should; but it seems to me that it should be used only after other means have been tried.

DR. VICKERY: I would like to say, as Dr. Folsom has, that I usually get out of gastric cases by a careful consideration of the symptoms, and such physical examination as I can obtain without these minute, careful, chemical tests. I believe that the stomach-tube is of great use in washing out the stomach in gastric catarrh, where it is very obstinate, particularly in drunkards, and a source of great relief to cases of cancer of the stomach, but I don't see how treatment has been revolutionized by the tests as to the fermentation or the nervous or muscular action, to be decided upon by taking out the gastric juice. I merely like to say this because, if we say that all these things are so necessary, it may discourage men in treatment, and I do see a great many stomach cases, and I think they get along very well. I am anxious to have chances to use the treatment; I have only one patient who uses it at present, and I think it does him a great deal of good. He was a drunkard. I have a case of cancer that I would like to try it in, but the lady objects. Dr. Gannett advises that if you once obtain consent, be sure to get the tube into the stomach that time, because you will never have another chance in the same person.

DR. J. A. JEFFRIES: It seems to me that one difficulty that has been made is that the tube is put too low down. Then the stomach walls may shut up on it, and you don't get anything. I have seen it tried, and thought the stomach was empty, and then, taking the tube out a little, have got plenty of juice. I think it is a point of some practical importance. There is one thing that comes in in speaking of diagnosis: if we don't wash the stomach out, and there is much mucus, the bacteria which cause fermentation are protected by the mucus and last over, but the normal amount of hydrochloric acid kills most of the bacteria, so that in animals or man, three or four hours after meals, the stomach is for practical purposes germ-free. In that way, I think washing out the stomach is a great thing in getting rid of these ferments, such as butyric and lactic acid. Of course, they do cause a good deal of distress. The easiest way to kill the bacteria is to wash the stomach out.

DR. CUTLER: From what I said, I did not mean that in every person who came to me with gastric symptoms I immediately introduced the tube and got the gastric juice. I try to get rid of the trouble in some other way, and if I cannot do that I may use these methods. I am unfortunate in not having heard what limitations the reader said; I heard him speak of the tube, and I took that. I should not wish to be understood as starting right off in this manner, because I don't do it. In fact, while I was on service at the Massachusetts General Hospital, this last four months, I think there were not more than four cases where the tube was systematically used. There was

one man, whom I think Dr. Vickery has now. Another fellow came in who had catarrh; I don't think that any of the others came in a second time. That is usually the case. I will say that I sometimes use it in the Hospital for my own experience, when I might not advocate it outside. The cases which need it are limited, but if a man once starts where it is really needed, it seems to me that there is nothing else that will supply its place.

DR. KNAPP: I would like to make practically the same statement that Dr. Cutler has. It certainly is a very disagreeable and rather laborious process to make a complete test of the gastric juice and the action of the stomach, and it is a thing that I admit in one or two cases I persuaded the hospital patient to allow me to do for the sake of my own curiosity; but certainly, in a great many cases of digestive disturbance it can be avoided, the patient may get on perfectly well, and you can treat them fairly satisfactorily. At the same time, there are a good many doubtful cases where it is an immense help, I think, and where the therapeutic use of the tube, which I did not lay any stress on, is one of our main resources.

(To be continued.)

CONNECTICUT MEDICAL SOCIETY.

THIS Society held its Ninety-seventh Annual Convention this year at New Haven, May 23d and 24th. There has been a growing feeling for some time past that the plan adopted for many years of having the Society meet alternate years at Hartford and New Haven should be so far modified as to admit Bridgeport as a third meeting-place, for there is no doubt but that the rapid increase of Bridgeport brings it close to Hartford in point of numbers, and, though not so central in location, it is only about thirty minutes from New Haven by rail. So confident were the Bridgeport members that a change would be made in this respect that they had a subscription paper numerously and generously signed, pledging a handsome sum to aid in the entertainment of the Society if its next meeting should be held there. But owing to the fact that a By-law stood in the way, which could only be altered by proposing the alterations one year and acting on them the next year, it could only be done by a suspension of said By-law by unanimous consent, and one negative vote settled the matter and left the *status in quo ante*. Consequently the meeting next year will be at Hartford.

The meeting was called to order at 3 P.M., by the President, DR. FRANCIS BACON of New Haven. This meeting is of the president and fellows, corresponding to the councillors of the Massachusetts Medical Society, only with the difference that any member of the Society may speak or introduce motions, or do anything but vote.

The committee on honorary degrees and membership reported for action the name of Prof. John C. Dalton, of New York, who was unanimously elected, and to lie over for one year under the rule, the name of Dr. E. M. Moore, of Rochester.

After some routine business the nominating committee brought in the following list, who were unanimously chosen.

President, Dr. G. L. Porter, of Bridgeport; Vice-

President, O. Brown, of Washington; Secretary, N. E. Worden, of Bridgeport; Treasurer, W. W. Knight.

Committee on matters of professional interest, Drs. L. B. Almy, L. T. Day, W. L. Ford; committee to nominate physicians to the retreat for the insane, Drs. M. Storrs and S. F. Risley; committee on publication, N. E. Worden and Dr. Almy; committee on arrangements, W. A. Wainwright, W. Bacon, E. R. Root.

Dissertator, P. H. Ingalls. Alternate, W. G. Brownson.

Delegates to American Medical Association, Dr. J. B. Kent, of Putnam, E. C. Kinney, of Norwich, C. H. Bill, of Bridgeport, H. B. Buel, of Litchfield, Dr. C. B. Newton, of Stafford, W. W. Welch, of Ansonia, S. B. St. John, F. D. Edgerton, of Middletown, B. W. Munson, of Noroton, F. E. Beckwith, of New Haven; to Maine, F. A. Merrill, and Ralph Goodwin; to New Hampshire, N. W. B. Dunham, and A. F. Douglas; to Vermont, H. G. Howe and S. G. Hubbard; to Massachusetts, F. M. Wilson and William Deming; to Rhode Island, F. L. Smith and E. S. Davis; to New Jersey, C. A. Lindsley and C. J. Fox; to New York, P. M. Hastings and H. P. Geib.

The so-called "New Charter Question," which appears now every year and is promptly voted down, was again brought forward, a committee appointed last year making a majority report recommending a slight increase in the number of fellows in the larger counties, and a minority report (supported by 4 out of 16 members) recommending the so-called new charter, sweeping away our present representative governing board. The minority report was suppressed by a vote of 24 to 12, and the majority report was also lost by 16 to 18. So we go on under the old dispensation for another year.

The Annual Convention began at 9.30 A.M. on Thursday. The evening before had been pleasantly spent at a microscopical soir  , held at the Yale Medical School, under the direction of the faculty, and at a reception later at the house of President Bacon.

The Secretary's Report showed an accession of 34 new names, and a falling off by death and removals from the State so as to leave a total membership of 494. A brief valedictory address was appended, as the secretary's resignation was handed in this year, after a service of five years.

The feature of the day was the President's Address to the Society, by DR. FRANCIS BACON. After a brief survey of the field of interesting topics which offered for a subject on such an occasion, such as recent improvements in the technique of surgery, local anaesthesia, advances in neurology, etc., the speaker announced his subject as

THE RELATION OF THE INSANE TO THE LAW IN THE STATE OF CONNECTICUT.

He made a powerful arraignment of the law as being meagre and insufficient. Here any "reputable physician certified to by any notary public or justice of the peace may certify his neighbor into confinement as being insane. In most other States this power is limited and restricted, requiring two physicians, graduates of some lawful school of medicine, having practised so many years, etc., not connected with each other in business, not connected by consanguinity with the person in question, not connected officially with any insane asylum, etc.

In this arraignment of the meagreness of the law, Dr. Bacon spoke as follows:

"A reputable physician!" What is a 'reputable physician' in the eyes of those august expounders and administrators of the law, the average notaries-public and justices of the peace? Perhaps some callow youth with the ink scarcely dry on the parchment which, with small outlay of time, labor, or cash, he has joyfully borne away from some diploma-mill, and eager to requite the low opinion that society has of him by condemning to confinement and civil disability some person with a clearer and steadier brain than his own; perhaps a chiropodist, perhaps a bone-setter, a 'magnetic healer,' a 'Christian scientist,' a 'faith curist,' a 'metaphysician,' a 'clairvoyant,' a 'theosophist,' any one of a hundred avatars of Belial or Moloch may be a 'reputable physician' before the all-embracing charity of our mother State. For my own part, when I reflect upon the extreme readiness of our laws to lend themselves to proceedings of this sort, and upon the momentous and far-reaching consequences of an act which is sometimes rather lightly performed, I respond to the not uncommon call for a certificate of insanity with more reluctance than attaches to most duties of the profession.

"If it is true, as I believe it is, that this dangerous power is but rarely abused to the detriment of citizens of Connecticut, it is so because, in this particular at least, our lives are better than our laws. The public, knowing the potentiality of many and various mischiefs that abide with the profession of medicine, is shrewd and quick to suspect misconduct in this business. The amendment of our law in this matter should be speedy; it is needed for the convenience and dignity of our profession to protect us from groundless accusations, even if it is not required for the safety of the citizen."

The speaker regretted the want of provision for a permanent commissioner in lunacy, and continued:

"I do not think that the State of Connecticut has acquired or deserved any special ill fame, as compared with other States of the Union, by reason of the abuse in her courts of the plea of insanity as a defence in criminal trials.

"Indeed, if such an accusation were brought against her, it might be repelled by quoting numerous cases of preëminent infamy from the judicial records of one of our nearest neighboring commonwealths, and a deplorably long array of others of similar character from some of the remoter States.

"Not yet in a Connecticut court have we seen the triumphant appearance of that illogical chimera of medical jurisprudence — 'transitory frenzy,' or 'acute moral insanity.'

"Not yet have we heard a judge charge the jury all tremulous with compassion and stifling their sobs that they might listen to the words of wisdom, speaking with judicial authority, that the accused may have been of sound mind up to the moment of his aiming his deadly pistol, an irresponsible maniac when he pulled the trigger, and to have returned to sanity and mental fitness for good citizenship while the bullet was speeding to its mark.

"That appalling malady which seizes upon a man just before engaged in the ordinary quiet pursuits of some peaceful vocation, and in an instant reduces him to such a mental wreck that he may commit the highest crime known to the law without responsibility

therefor, and then as suddenly leaves him without any change in his normal condition except such as the unscientific might suppose to be the result of gratified vengeance, is as yet unknown to us here in Connecticut, save as we hear of by cases reported from other States illuminated by the latest discoveries in practical psychology."

The speaker then made running comments on the principal "somatic indicia" of insanity, some of which were quite sarcastic, and indeed there was a vein of humor running through the entire paper. He touched upon cranial lateral asymmetry, the unpleasant smell of the insane, bromidrosis and osmidrosis, the fibrillar tremor of the tongue, etc., and the so-called ophthalmoscopic signs, and in connection with the latter he gave an instance of a trial for murder where two physicians, one an expert neurologist, who relied largely on the ophthalmoscopic signs, had testified to the homicide's insanity. The plea of insanity did not avail, the man was sentenced to a term of imprisonment which he served out, and so far as heard from showed no insanity, while each of the two doctors certifying to his insanity, became an inmate of a lunatic asylum within a few months, one with violent mania, the other with a form of paranoia. Said he—

"As for the 'somatic indicia' at large, we may safely declare that the theorist who attempts to build up a case of lunacy out of any combination of them will find himself confronting from a different direction the conclusion which Polonius and many a philosopher since him, reached in his attempt.

"To define true madness

What is 't, but to be nothing else but mad."

"The end of the matter is that the most expert of clinicians forms his opinion in any given case just as the unlearned do, on the basis of common sense, by considering the acts of the patient. If the ophthalmoscope and the sphymograph come in to confirm the opinion based upon the mental condition, well and good. Even such corroboration as may be had from those instruments of precision, the dynamometer and aesthesiometer, which falsely pretend to convert subjective symptoms into objective ones, may not be destitute of interest. The ankle-clonus, the knee-reflex, the cremasteric-reflex, the fibrillar tremors, the host of peripheral nerve phenomena that may be present or absent, will not be neglected by the careful student, and yet the fact remains that these somatic indicia may be present in abundance and variety and yet the subject of them may be of undoubted and active intellect,—they may be all absent and yet we may have to deal with a dangerous and incurable lunatic.

"I will go a step further and say: The physician on the witness-stand, who permits himself, under the manipulation it may be, of some wily and unscrupulous lawyer, to convey to a jury the idea that his means of determining the mental condition of any person in question, are different in kind, however superior they may be in degree, to those of the ordinary observer, puts himself in a false and untenable position, and fosters a fallacy already too prevalent. . . . It is beyond doubt or cavil that most of these frequent verdicts of not guilty by reason of insanity, are the expression, not of the judgment, but of the emotion of juries. They are due to a reluctance to award the full penalty prescribed by the law in cases where the crime is felt to have been to some extent an excusable, if not a justifiable act, of vengeance.

The jury, which is rarely logical but often sympathetic, feels a thrill of gratitude to the doctor who will say that his infallible ophthalmoscope or aëthesiometer shows the prisoner at the bar to be the hapless victim of irresistible cerebral disturbance. But is it right, is it even politic, for our profession to be carrying the opprobrium of what clear-headed and thoughtful men everywhere feel to be a trifling with the law and a setting at naught of evidence? In countries where, as in France for instance, it is permitted to juries to find that 'extenuating circumstances' mitigate the crime, the shameful absurdities of transitory frenzy and of insanity which is insanity *pro hoc vice*, for this occasion only, are unknown in the courts and conviction of high felonies and punishment, at least some substantial degree of punishment, are reasonably sure and speedy. But so long as our laws and our juries continue as they are, society will from time to time be exposed to the demoralizing spectacle of justice thwarted and crime shielded by the combined efforts of unscrupulous lawyers and of doctors whose lightest condemnation must be that they are ignorant or unreflecting."

In the following sentence the Massachusetts Statute is commended; but its effect is nullified by the power to pardon bestowed upon the Governor, of which he says:

"Pretty infallible, let us hope, the Massachusetts governor is, because under the provision of this last section, two years ago, to speak of only a single case, a man was turned loose upon society, who about six years previously had, not in a maniacal fury, but most deliberately, slain his own child in a way that curdled the blood of any one 'made of penetrable stuff' that heard of it. He had recovered his sanity, it was found upon inquiry, and accordingly was discharged. His insanity had been of that type which characterizes the truly sincere and devoted among the faith-curious, and which more commonly impels them to homicide by negation than to positive acts of violence. Admit that he had returned to a state of mental soundness, and still the question arises, what use has society for such a man? What better place can be found for him, taking his own view of it, than that where a humane and skilful custody has prevented his being a constant danger to himself and others?"

"What lapse of years, what painful assiduity in works of atonement, can ever make him less than an object of horror and suspicion to those about him?"

The paper concludes as follows: "Is it too much, then, to ask that every person acquitted of homicide upon the ground of insanity be declared permanently insane, and that he be for the term of his natural life subjected to such humane but efficient restraint as may be required to ensure both his own safety and welfare and that of society at large? I sincerely believe that a law to that effect would work no undue hardship to any one, but would be a substantial advance in the direction of practical justice and social safety."

The Society decided to raise a committee to go before the next legislature and advocate a law as recommended in the address. President Bacon appointed this committee as follows: Dr. Lewis, of Collinsville, Dr. Stearns, of Hartford, and Dr. Lindsley, of New Haven.

Resolutions of thanks to the retiring secretary, S. B. St. John, and treasurer, E. P. Swasey, were adopted.

GEORGE R. SHEPHERD, chairman of the committee on matters of professional interest in the State made an extended report. The subject treated was

ALBUMINURIA.

Extensive statistics had been compiled by the committee, from examinations made upon supposed healthy men. Some 35,000 examinations were collected from Life Insurance Companies, and some cases through the officials at Washington, when examinations were made before and after exercise, etc., and the following general conclusions were drawn:

(1) Albuminuria is much less frequent in the United States than in England, Stewart giving 31% as the general average, while ours, conducted upon a much larger scale, show but 2%.

(2) The brain-workers rather than the muscle-workers show the largest percentage of albuminuria.

(3) The urine of perfectly healthy people rarely shows albumen after food, while those who suffer from dyspepsia and oxaluria, are very liable to show it.

(4) Privation, scanty food and clothing with unsanitary surroundings, increase the liability to albuminuria.

(5) Cold bathing does increase the liability to albuminuria, though more notably so in case of dyspepsia.

(6) Severe exercise increases this liability in a very moderate degree.

(7) In the large majority of cases albuminuria is not associated with kidney disease.

(8) In the matter of Life Insurance, albuminuria should be looked on as a symptom only, and acceptance or rejection of the risk should depend on the gravity of the cause.

(9) The existence of any such condition as physiological albuminuria is extremely improbable.

This report, which was extremely elaborate, reflects great credit upon the committee, and especially on its chairman, who was peculiarly qualified to investigate this question, not only by reason of his experience as medical examiner for a great Life Insurance Company, but from the unusual facilities which his official position gave him for collating statistics. It is a report which will be extensively quoted in coming literature.

A paper on

PARALDEHYDE,

by DR. KENISTON, one of the physicians to the State Insane Asylum, gave the results of the trial of this comparatively new hypnotic. He gave it in drachm doses, sometimes repeating three times, and found it a reliable hypnotic in most cases of excitement and restlessness without pain, while free from the objectionable attaching to opium and chloral, leaving the patient bright and cheerful, not heavy and stupid.

DR. R. M. GRISWOLD, the Dissertator, read a paper advocating

CHLOROFORM AND EARLY USE OF FORCES IN CASES OF LABOR,

as soon as the pains began to flag, or the patient to become in the least exhausted.

DR. C. W. RAY, of Vermont, DRs. A. M. SMITH and MOLONY, of Massachusetts, DRs. PALMER, and O'LEARY, of Rhode Island, were introduced as delegates from sister societies and spoke words of greeting.

Delegates to other Societies made short reports.

One of the most emphatic addresses of the day was that of DR. PARSONS, on

ALCOHOL IN THERAPEUTICS,

being a vigorous onslaught on those who would banish this article from our armamentarium because once in a while a latent appetite is awakened by alcohol medicinally advised.

DR. NEWTON's paper on

PNEUMONIA

dwelt especially upon the sharp contrasts to which we were exposed by keeping our dwelling-houses so hot in winter, as a cause for this dread disease. He also intimated that the formation of ptomaines might play an important part in the effects of this disease.

THE RELATIONS OF CARDIAC HYPERTROPHY TO NEPHRITIS,

was the title of a paper by DR. J. K. THACHER, Professor of Physiology at the Yale Medical School, a peculiarly able, though at first hearing, much-involved paper.

A CASE OF TYPHOID FEVER

with chart, showing the effect of antipyrine in lowering the temperature, was read by DR. G. C. SEGUR, and the time of adjournment was reached, leaving fourteen papers on the bulletin. Nothing could more clearly demonstrate the necessity for another session of the Society to hear and discuss papers. This we hope to have when the Charter agitation allows a chance for action in some other channels.

The Society adjourned and met at the New Haven House, where the annual dinner, and a very good one too, was served. DR. W. H. CARMALT, Anniversary Chairman, acting as master of ceremonies during the post prandial exercises.

AMERICAN MEDICAL ASSOCIATION,¹ CINCINNATI, OHIO.

SECTION OF PRACTICAL MEDICINE, MATERIA MEDICA, AND PHYSIOLOGY.

SECOND DAY.—WEDNESDAY, MAY 9th.

H. C. VAN BIBBER, M.D., Chairman.

Election of officers for the ensuing year resulted as follows: Dr. F. C. Shattuck, of Boston, Chairman; Dr. G. A. Fackler, of Cincinnati, Secretary.

Topic for discussion

DIAGNOSIS AND TREATMENT OF DISEASES OF THE STOMACH.

DR. WILLIAM PEPPER, of Philadelphia, opened the discussion with some practical remarks on the diagnosis of diseases of the stomach. To illustrate his points he cited a number of cases.

CASE I. A man had been losing two pounds in weight per week, for a period of sixteen weeks. No disease could be detected, blood and urine normal. No affection of heart and lungs. No enlargement of the spleen or glands. Eye ground presented no data of significance. No pain, vomiting and constipation. Teeth had failed and were hence an element of imperfect mastication. Careful diet with small doses of arsenic brought about a temporary cessation of flesh.

¹ Continued from page 564.

But emaciation in time resumed its progress. Only by excluding every affection demonstrable did the speaker arrive at a diagnosis of developing cancer in the walls of the stomach. The case resulted fatally three or four months after it was first observed by the speaker, and the walls of the stomach were found to be the seat of general carcinomatous infiltration.

Such cases demonstrate the want of something necessary to render a diagnosis accurate. Not only in cases so rare as this, but many cases will be met with in which one or two symptoms may be present, and yet the group is too inadequate to make a definite diagnosis.

The speaker had but recently seen a business man sixty-four years of age, who had previously enjoyed perfect health, but was suddenly attacked with some pain in the pit of the stomach, coming on when that organ was empty and at night. It recurred every night and extended from the pit of the stomach to the back. Bowels quiet or a little costive. He has lost thirty to forty pounds, pale but not cachectic. Most careful search of the epigastrium revealed nothing. Radials hard, arcus senilis present, abdominal aorta strong and appeared somewhat enlarged. No evidence of pancreatic disease. Under the use of careful diet, hydrocyanic acid, the application of the thermo-catheter to the region over the stomach and back a most remarkable improvement was noted. But it was only transient. Months passed and emaciation advanced, and a hardness could be detected close up to the crura of the diaphragm. Patient died and an autopsy revealed a fungus epithelioma in the superior and posterior walls of the stomach, doubtlessly involving nervous filaments in the dense adhesions. We recognize then, the need of something, outside of the clinical data as pain, vomiting, emaciation, etc., which although they usually suffice to establish a diagnosis, still fail when they are most needed for differential diagnostic points.

The speaker wished to allude to a field which seemed to offer us assistance in this regard; namely, the application of organic chemistry in the examination of the contents of the stomach removed in a systematic manner. Vomiting occurs so frequently, and the vomited matter is so mixed with portions of previous meal or with mucus, etc., that the study of the ejected substances is inadequate.

The contents of the stomach should be removed by aspiration. It should be done at a definite time after the ingestion of a definite meal, which shall consist of a certain amount of mixed food, starchy and nitrogenous. The matter obtained should be tested for free hydrochloric acid, lactic acid and peptic strength; that is, the power it possesses still further to digest albumen. The methyl violet is the best test for hydrochloric acid.

It is asserted by Riegel that in consequence of thousands of investigations, he has found that when cancer is present, no free hydrochloric acid will be found in the contents of the stomach six hours after a test meal. Here, then, we have a point of enormous importance, if it be established.

The secretion of the stomach is just as accessible as the urine. The statements have been confirmed by most excellent observers. The ability to diagnose accurately has distinct limitations. In our efforts to dignoscate a certain case some, or all, the classical symptoms may be absent. Here, then, a field has

been opened that appears to promise large results. What has been presented to us may be accepted as possessing confirmed value, although not regarded as infallible.

DR. F. C. SHATTUCK, of Boston, congratulated Dr. Pepper on the conservative position taken by him with regard to the inferences to be drawn to-day from the absence of free hydrochloric acid in the gastric secretion. Ewald has found that in some persons, apparently perfectly healthy, this acid is absent, and it must be kept clearly in mind that no diagnostic inference is to be drawn from one or two examinations. Such conclusions, if drawn at all at present, are to be based on the persistent presence or absence of the free acid. The phloro glucin vanillin test is probably the best; it is not only very delicate but apparently absolutely distinctive of hydrochloric acid.

Unfortunately, the quantitative tests are not so easy of application. The color tests are for this purpose entirely unreliable, and the method of Calm and v. Mering, demands in skilled hands one to two hours, a fact which puts its extended clinical use quite out of the question.

Dr. Shattuck then spoke briefly on hyper-secretion and hyper-acidity, with the relation of the latter to gastric ulcer, and of the great value of auscultatory percussion in defining the area of gastric resonance. The introduction of the soft stomach tube is rendered less disagreeable to the patient, if it is carefully washed from mucus, etc., after using. It is then perfectly smooth and requires only to be wet with water before being swallowed.

In closing, Ewald's salol test for the motor sufficiency of the stomach was alluded to. The speaker's experience with this test in about fifty cases of health and disease, led him to think that the number of healthy persons in whom upwards of an hour is needed after taking salol, before salicylic acid can be detected in the urine, with the solution of the perchloride of iron, is not very small.

DR. OCTERLONY had for several years made use of chemical analysis in the diagnosis of gastric disease. In no single case did the examination fail to corroborate the diagnosis. In malignant disease, free hydrochloric acid was always absent. Speaker referred to some symptoms which we are likely to meet with in malignant disease of the stomach; that is, hæmorrhage is of frequent occurrence, perversion of appetite is an early symptom, and a habitually lower than normal temperature comparatively early.

DR. WHITTAKER confined his remarks to the consideration of the presence or absence of free hydrochloric acid:

(1) Does the presence or absence of free hydrochloric acid indicate the presence or absence of carcinoma?

(2) Is the test easy of execution?

The general practitioner is not content with a method that demands execution by a chemist, but there can be no doubt that the test is easy of execution. A piece of Congo paper dipped into a solution of gastric juice is turned blue by free hydrochloric acid. It is a very sensitive test. Should there be any doubt, then apply the methyl-violet test. The patient should furnish the physician with the contents of the stomach. These are easily obtained. It is rarely necessary to employ the pump. The contents should be obtained seven hours after the ingestion of

a meal. Lactic acid is sought for by means of the carbolate-of-iron test.

Does the absence of free hydrochloric acid indicate cancer? On this point all seem unanimous that the persistent absence of hydrochloric acid, day after day, uniformly indicates cancer. The speaker did not mean universally, just as albuminuria does not universally indicate Bright's disease. The speaker was able to say conscientiously that in a period of five years he had never been deceived. The vomited matter is of no avail. The food which has undergone digestion for about seven hours should be withdrawn. If the symptom, absence of free hydrochloric acid, be established, and the patient be of the required age, no mistake can be made. What practitioner has not met with cases in which all symptoms were present, except the tumor? The absence of the latter rendered the diagnosis doubtful, but now the symptom under discussion clears up the case. Hyperacidity indicates ulcer. It is no more necessary to send the material to the chemist than to send urine for the detection of sugar or albumen. The intensity with which the Congo paper is colored points to the degree of acidity. An interesting point in this connection is that hyperacidity may cause ulcer, and also be the factor which prevents the healing of the ulcer.

A paper entitled

FOOD IN NERVOUS AFFECTIONS

was read by DR. EPHRAIM CUTTER, of New York.

THIRD DAY. — THURSDAY, MAY 10TH.

The session of May 10th was opened by the reading of a paper, subject:

SYRUP OF HYDRIOIC ACID IN GENERAL PRACTICE.

by W. C. WILE, of Danbury, Conn.

The form of remedy employed is the unalterable syrup presented to the profession in 1878. It has been the favorite remedy of the author in all asthmatic troubles, and has never been exhibited without unmistakable evidences of relief and comfort. Excellent results have been obtained in chronic bronchitis of long standing, chronic lead poisoning, scrofulous diseases, obesity, and in all the latest stages and manifestations of syphilis.

DR. J. MCFADDEN GASTON read a paper on

CEREBRO-SPINAL MENINGITIS.

His object in preparing the paper has been to emphasize the great importance of recognizing the gravity of the situation at an early period by the general symptoms indicative of congestion, without waiting for indications of inflammation to determine the nature of the disease.

The author cited forty five cases of meningitis, thirty-five of which were cerebro-spinal meningitis, and the balance spinal meningitis, with the following results: 80% of the latter and 40% of the former died.

As to treatment, the speaker thought that while the recourse to opiates has, in some cases, seemed to afford relief, it is evident that in most cases it only soothes the passage to the grave. There is an urgent demand for restoring the functions of the vital organs, and arousing the nerve-centres to action by revulsive applications externally, and revolutionary measures internally. Relying upon the special properties of a

mixture of calomel and quinine, he had employed it for the purpose of jugulating the progressive development of the congestive stage of this disease. Hot mustard baths were applied to the lower extremities, and cold to the head. Mustard plasters may also be placed along the spine, arresting or restoring the energy of the nervous system, and mustard applications to the inner portion of arms and legs.

The speaker cited cases in illustration and proof of the efficacy of this treatment, followed by salicylate of sodium and fluid extract of *Jaborandi*.

DR. DIDAMA, of Syracuse, gave in detail

FIVE VERY OBSTINATE CASES OF HEMATURIA,

which, after resisting ordinary and extraordinary treatment for periods of from six weeks to three months, finally yielded in the course of a week or so to large doses of alum, twenty grains three times daily, or smaller quantities every three hours. He called attention to the importance of having the alum dissolved in a large quantity of water, and claimed that when so diluted—twenty grains to a goblet of water—it found ready access to the blood and urinary passages, and never produced constipation. Some of his cases had, under the care of the most eminent physicians, received the best known treatment without the slightest benefit. Alum had been used in some instances, but never in the large doses which he had employed with invariable success up to the present.

DR. N. S. DAVIS had met with cases of persistent hematuria so severe as to greatly impoverish the patient and endanger life. He reported a case of such character which could not otherwise be explained than upon the theory that there existed a defect in the influence of the vaso-motor nerves over the vessels of the kidney. Acting upon this theory, the speaker had found the only remedies under which the patient recovered—ergotine on the one hand in moderately full doses, and, at the same time, the fluid extract of *hamamelis virginicus*. He disregarded largely astringent principles. It is probable that alum (advised in the paper), well diluted so as not to create gastric disturbances, will pass through the kidneys in sufficient quantity to increase the tonic of the kidney vessels.

DR. G. W. McCASKEY thought that the majority of cases of persistent hematuria are due to an effusion of blood from the parenchyma of the kidney, otherwise to local lesions of the urethra, bladder, ureters or pelvis of the kidney. He thought that Dr. Davis's view was probably the correct one in many cases.

DR. H. GRADLE, of Chicago, read a paper entitled

HEADACHES FROM OVERLOOKED CAUSES IN THE NASO-PHARYNX AND EARS.

He divided his cases into three classes, presented a full review of symptoms, and advised the appropriate treatment.

DR. JOHN V. SHOEMAKER, of Philadelphia, read a paper, in which he took ground against the imputations that had been cast upon β naphthol.

DR. V. C. VATCHAN, of Ann Arbor, discoursed upon the

ETIOLOGY OF TYPHOID FEVER,

presenting in detail his experiments with the Eberth

bacillus obtained from drinking water, and the successful inoculation of dogs with the germ.

DR. JOHN NORTH, of Keokuk, Iowa, read a paper on

SYMPATHETIC NERVOUS SYSTEM IN DISEASE.

SURGICAL SECTION.

THIRD DAY, THURSDAY, MAY 10TH.

THE SURGICAL ADVANTAGES OF THE BURIED ANIMAL SUTURE, AND ITS ADAPTABILITY TO SPECIAL PURPOSES,

by HENRY O. MARCY, Boston.

The introduction of antiseptic wound treatment has modified the use of the ligature to a degree which renders possible results hitherto never attained. Sir Joseph Lister's admirable researches on the animal ligature and the ligation of arteries, justly entitle him to the fame he has reached. The reader went on to say that these demonstrations and researches of Lister, although confirmed by other observers, were not applied to sutures until 1871, when the essayist himself, in a case of strangulated hernia, freshened the edges of the ring and united them with catgut. Union speedily followed, and the cure was complete. From this experience and experiments conducted afterwards he established the operation for cure of hernia by aseptic suturing of the refreshed parts in open wounds. In this operation by means of the shoemaker stitch, devised by himself, the sac is stitched across and returned to the abdominal cavity. If it is too large a part of it is removed.

He has gradually extended the application of buried suturing, until he has treated wounds in nearly every part of the body by this method. In 1881 he applied successfully the same method to the stump of the uterus in hysterectomy. About the same time he used the animal ligature on the pedicle of an ovarian tumor, and reported the same at the International Congress in London, 1881.

Perineorrhaphy, laparotomy, plastic operations, etc., are all cases in which the animal suture is adaptable. In wounds that do not require drainage he is in the habit of burying even the superficial sutures by sealing them and the whole wound with an iodoform solution of collodion. The material used in buried sutures should be reliable and thoroughly aseptic. He prepares his own sutures from the tendons of the kangaroo. The ordinary catgut is not reliable.

There is no better test of the aseptic skill of the operator than in the introduction of animal suture. Septic material will easily be carried into the wound on the suture unless the surgeon follows strictly antiseptic precautions.

SARCOMA OF THE SCALP,

by P. S. CONNOR, Cincinnati.

In October, 1885, was consulted by Mrs. S., aged twenty-five, who stated that fifteen years before she had noticed a lump of the "size of a bean," not painful on pressure. At the end of thirteen years it began to enlarge, and continued to do so until the time of her confinement, five months before he saw her, when it was as "large as a goose egg." Since that time the growth had been rapid and attended at times with severe pain. The tumor, occupying the occipital region, was, at time of consultation,

movable and apparently fluctuating. It was ellipsoidal in shape, its greatest circumference measuring twenty-one inches, and the least, at its junction with the head, fifteen inches. The mass was completely removed on the 23d of October, 1885, the rather profuse hemorrhage being easily controlled by the application of hot water. The wound was dressed with iodoform. At the end of four days the drainage-tube was removed, and in eight days union was complete. The mass removed weighed five pounds, and was found to be a spindle-celled sarcoma. She continued well for eighteen months, when a small tender spot and soon after a hard lump was noticed. This continued to grow, until in March of this year it had reached larger dimensions than before, its greatest circumference being twenty-five inches. On the 3d of March, 1888, the tumor, together with portions of the pericranium, were removed, and the whole denuded surface touched with the Paquelin cautery. A mild erysipelas somewhat retarded healing, but in five weeks she was practically well. Weight of tumor, seven and one-half pounds. Patient was one month advanced in pregnancy when the recurrence was first noticed, and until the time of confinement the growth was very slow, this constituting one of the points of especial interest. The great size of the tumor, and the fact that primary sarcomata of the scalp are exceedingly rare, make this case of especial interest.

A recurrence of such growths may be expected, but an early operation when the tumor is first noticed as a hard lump in the scalp, will give to the patient the best chance for life.

INTRA-PERITONEAL RUPTURE OF THE BLADDER,

by H. H. GRANT, of Louisville, Ky.

Although indefinite reference to the propriety of attempting suture of the bladder after rupture is made by Gross, Larrey, Cussack, and others, and although Holmes, in his "Principles and Practice of Surgery," makes practical suggestions regarding this operation, yet up to 1886, Mr. Rivington declares in Heath's Dictionary, intra-peritoneal rupture, however treated, was almost uniformly fatal.

It appears that to Mr. Willett is due the credit of priority, and also of proposing the best style of suture for such injuries. In 1878, Mr. C. Heath, forty hours after the accident, closed an intra-peritoneal rent of the bladder with catgut sutures. Death, on account of extravasation, occurred on the sixth day.

An operation described by Pilcher in 1883, and successfully performed by MacCormac in 1886, is now recognized as possessing the best technique.

In a case which the essayist treated successfully, the patient, aged nineteen years, was run over by a cart, the wheel passing over the pelvis. By the use of the catheter, several ounces of bloody urine were withdrawn; this, together with the severe pain in the hypogastric region and the existence of shock, indicated intra-peritoneal rupture of the bladder, and laparotomy was advised.

The operation, antiseptic throughout, was performed about five hours after the occurrence of the accident. On opening the peritoneal cavity in the median line, a considerable quantity of bloody urine escaped. A loose fragment of bone, apparently from the horizontal ramus of the pubic bone, was found in the wound. A rent, two and a half inches long, was found in the fundus of the bladder, and this was carefully closed

with eleven sutures of carbolized silk, after the method of Lambert. The toilette of the abdominal cavity having been made, the wound was closed with deep silk and superficial catgut sutures. A rubber drainage-tube was introduced behind the bladder. Iodoform and dry antiseptic dressings were employed. At no time did the temperature rise above 100° F.; on the sixth day the tube was removed, and the convalescence was established on the fourteenth day.

The essayist presented a table of fourteen recorded cases of laparotomy performed for intra-peritoneal rupture of the bladder (including his own). Five of these recovered, and nine died. In a majority of these cases, abdominal drainage was practised after the operation.

The method of treating these intra-peritoneal lacerations by the plan of inaction will result in death in the large majority of cases, and he believes that a laparotomy, done with every antiseptic precaution, and a closure of the wound of the bladder by antiseptic suturing promises the best possible chance of recovery to the patient. When the wound in the bladder wall is irregular, much lacerated, and the general conditions of the patient are unfavorable, the method of stitching the edges of the vesical wound to those of the wound in the abdominal wall may be adopted. The wound in such a case could be stuffed with iodoform gauze, and drainage could be effected through a tube and also a catheter.

The importance of an early diagnosis and an early laparotomy should be recognized. The history is usually clear, and the symptoms prominent. Severe pain, accompanied by great desire, but fruitless efforts to urinate, are symptoms that are suggestive. The urine that is withdrawn is bloody. As to the after-treatment, he thinks that the advantages to be gained by catheterization, thus preventing any distension of the bladder from an over-accumulation of urine, far outweigh the dangers of its careful use. The viscus should not be allowed to fill, but after four or five days the patient may be allowed to pass urine in the natural way, avoiding all straining.

DRY MEDICATION IN THE TREATMENT OF URETHRA AND BLADDER,

by ELMER LEE, St. Louis.

By the use of granules of cane sugar, in which may be incorporated any medicament, such as an alkaloid, and which are introduced into the inflamed urethra, bladder, or uterus, he claims that the treatment of diseases of these organs may be much more successful than hitherto. The granules, which vary in size and dose to suit individual requirements, when placed in the urethra, dissolve in the mucus of the part, allowing the medicament to come in contact with the inflamed area. The instrument for introduction of the granules consists of a tube or catheter, with the eye at the end. Through this the granules are pushed by means of a probe. The claim is made that these pellets are not so irritating as gelatine bougies or other urethral remedies.

AN ANTISEPTIC SURGICAL CABINET,

by H. LANDIN GETZ, or Marshalltown, Iowa.

The expense of preparing a special room in which to perform laparotomies, ovariectomies, etc., and the time required to put such a room in an aseptic condition, prompted him to devise the cheap and efficient

substitute which he exhibited to the Section. It consists of a framework of light wooden poles, which support a covering of cheese-cloth, which falls to the floor on every side. This cloth, before being placed over the frame, is wrung out of a strong bichloride solution, and is presumed to intercept all germs from entrance to the operating cabinet. The gauze on one side is fastened to the wall around a window, so that the latter forms one wall of the little apartment, and admits light. An antiseptic spray can be kept playing on the gauze to keep it moist all the time during the operation. The operating table is so placed that the head of the patient may be on the outside of the cabinet, while the cloth forming that side falls to each side of the table like a curtain. The instruments may be handed to the operator through the flap door at one side.

His claims for the device are that it is simple, inexpensive, and easily constructed. The air within it may be readily purified by the antiseptic spray, while the air that enters from without is rendered aseptic by coming in contact with the bichloride solution in the gauze walls. The patient's head being outside the tent, the attention of the assistant administering the anæsthetic cannot be distracted from his work, for he cannot see the field of operation.

DR. VAN HOOK, of Chicago, wished to call attention to the fact that Dr. Prince, of Illinois, has used for his abdominal operations a room supplied with air which has been rendered thoroughly aseptic by passing through some disinfecting process. But it is not possible to keep the atmosphere of an apartment aseptic, for enough germs, morbid and non-morbid, are exhaled by the operator and all in the room to thoroughly contaminate it. As to the cabinet of Dr. Getz, he feared that the meshes of the cloth were too large to prevent the entrance of germs.

WOOD-FIBRE AS A SURGICAL DRESSING,

by J. W. BROWN, Mattville, N. J.

Dr. Brown was not present; his paper was read by title.

(To be continued.)

Recent Literature.

Pulmonary Consumption; Its Etiology, Pathology and Treatment. By C. J. B. WILLIAMS, M.D., etc., and CHARLES THEODORE WILLIAMS, M.D. Second edition, enlarged and rewritten by DR. C. THEODORE WILLIAMS. Philadelphia: P. Blakiston, Son & Co. 1887. pp. 434.

The appearance of a new edition of this well-known work affords a good opportunity for a review of the advances in our knowledge of consumption since 1871, the date of publication of the first edition. To pass over minor points, the two directions in which progress has been made are in pathology and in climatic treatment. The experiments of Villemin in 1864 first gave a scientific basis to the idea that consumption is an infectious disease, and the work to which these experiments gave rise culminated in Koch's great discovery which has so cleared up the vexed question of the pathology of tuberculosis that the ninety pages of conflicting views in the first edition

shrink to fifty, mostly of established fact, in the second. A comparison of the chapters given to pathology impresses strongly upon the reader the magnitude and importance of the revolution which has been worked.

Secondly, the high altitude treatment of consumption may be said to have been born, and even come of age in the years since the first edition was printed. At present the remarks of the author on this subject are general in character, though he discusses briefly the indications for and against the choice of a climate by this class for individual cases, but he strongly hints on page 369 that we shall ere long have the benefit of detailed results of his large experience with mountain stations.

On page 59 the author seems to maintain the view that tuberculosis itself, like syphilis, is inherited, and cites as disproving the position of Virchow and others a passage from Scudamore, who examined the body of a child dying greatly emaciated at four months, and found a general tuberculosis. The mother was advanced in phthisis when the child was born. We cannot see that this case proves anything. It seems vastly more probable that the child was congenitally predisposed to entertain and breed the bacillus, which, however, entered the system after birth, coming from the air passages of the mother. While we are not in a position absolutely to deny the possibility of the hereditary transmission of the disease itself, the weight of evidence at present is certainly against such a possibility. It will be interesting and instructive to see whether Jani's observations are confirmed. He claims to have found isolated tubercles in the otherwise healthy vesicular seminales and prostates of consumptive males, and also in the folds of the mucous membrane of the tubes in females.

We regret that the author has not thrown the light of his experience on the question of the existence and frequency of simple pleurisy due to exposure to cold; it is held by many authorities now that such an affection is very rare, if it occurs at all, these pleurisies being really tubercular from the start.

To show the position of the author toward prognosis and treatment, the following passage from the preface may be quoted: "The outlook of the future of consumption is decidedly hopeful, for there is little doubt that much of the disease is due to preventable causes, which the coming reign of hygiene will sweep away, and that in many cases the disease will be nipped in the bud by a combination of anti-phthisical and bacillicide treatment, while, in more advanced cases, life will be prolonged even beyond its present lengthened duration."

Of course a direct bacillicide treatment is not at present known to us.

We are somewhat surprised at a statement on page 341 with regard to milk, which "is of such vital importance to the consumptive that some form of it must always be insisted on. But two cautions are necessary; one, that it must never exceed one quart a day, and that if cod-liver oil is taken the quantity shall be limited to a pint." Our experience here in America does not at all coincide with the above. We find that patients can take and digest, without impairment of appetite for other things, larger quantities of milk than Dr. Williams thinks desirable to administer.

There are many other points which we should like

to note, and very many which we should like to commend, did space permit. If the profession does not keep abreast of the advances in our knowledge of consumption it is not the fault of Jaccoud, See, Powell and Williams, new works, or new editions of works by whom, on consumption, have appeared, and been noticed in these columns within the last few years.

F. C. S.

Abdominal Surgery. By J. GREIG SMITH, M.A., F.R.S.E., Surgeon to the Bristol Royal Infirmary, etc. Philadelphia: P. Blakiston, Son & Co. 1887.

This book of six hundred pages is an attempt to describe in a systematic manner surgical operations of the abdomen. The recent rapid advance in this department of surgery, and the immense collection of data, the result not only of increased clinical experience, but also of valuable experimental research, which is now scattered haphazard in a wilderness of periodicals and monographs, necessitates a concise review of the subject. There is no other work in English in which detailed descriptions of the various procedures authorized by modern surgery are collected; hence a systematic rearrangement of these facts and methods, which have been proved by experience to be the best in this most trying class of cases, is especially valuable and useful, and any one who has been compelled to search through the mass of current literature now at hand to learn the most approved technique for some abdominal operation, or the most successful method of treatment, will appreciate at once the true value of Mr. Smith's work. The volume is clearly written, and is the presentation not only of the results of bibliographical research, but also an exposition of knowledge gained from actual experience. The author can said to a certain extent to have practised what he preaches, and states what he himself believes, instead of giving, as is so often done, merely a compilation of the opinions of others.

"Treatment by operation" has been his motto. Normal and pathological anatomy, histology, and clinical history are introduced only so far as they have a direct bearing on diagnosis or treatment. Thorough and complete asepsis is conspicuous. The description of operative technique is the chief feature of the book, and all the principal operations involving the stomach, intestines, liver, gall-bladder, kidney, spleen, pancreas, ovaries, broad ligaments, and the gravid or unimpregnated uterus, are here given in detail. The remarks relating to the treatment of patients subsequent to operation contain many valuable suggestions. The author's views are usually clearly stated, and although, perhaps, not in every instance in accordance with those held by the most prominent surgeons, still are seldom without some good reason for their adoption. As a rule, the book seems a reliable one, but at times an incongruity of statements show a rather careless style.¹ This is apt to induce a certain amount of caution in accepting the author's statements as always absolutely accurate. The book is a compendium, not a complete work on abdominal surgery. This is what the author intended, and he deserves the credit of having made a valuable contribution to surgical literature.

¹ Page 131: "Primary cancer of the ovary is rare." Ibid: "Primary cancer also frequently attacks both ovaries." Page 191: "On the operating table the proceeding" (vaginal hysterectomy, an operation at times a most trying and difficult one) "ought not to occupy more than a quarter of an hour."

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THE ONE HUNDRETH AND SEVENTH ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY.

The approaching annual meeting of the Massachusetts Medical Society will present some rather unusual features. The papers give promise of unusual merit and the subjects are for the most part of general interest.

Among the items of business a report will be expected from the committee appointed at the last annual meeting to investigate the subject of Physical Culture in the Schools, and the matter of amending the conditions of admission into the Society, already acted upon by the Council, will be brought up. This latter item is of the greatest importance. The proposition is to permit the examination for admission to the Society by the Censors of the graduates of certain irregular schools. At the present moment a man who has taken a degree from a school not classed as regular can find no means of admission to the society save by the acquisition of a degree of one of the accepted schools. Occasionally a man presents himself who is fully qualified for membership and is desirous of admission but does not care to go back to school again in his advanced years. The proposed change is to meet such individual cases. The measure so far recommended itself to the Council as to pass that body without a dissenting vote.

The usual banquet will loose many of the features which have become inseparable from it in the minds of the members. The impossibility of securing a proper hall for the dinner has obliged the change to a less formal, but probably equally enjoyable meeting at which no one need lose his dinner but which will permit free circulation and the interchange of ideas with friends and acquaintances.

How popular such a gathering will prove in comparison with the formal tables and set speeches of previous years it is impossible to foretell. Certainly it will for once prove a novelty and we trust a pleasing one.

THE PHYSICAL EXAMINATION OF THE STOMACH, AND THE VALUE OF THE ABSENCE OF FREE HYDROCHLORIC ACID AS A SIGN OF CANCER.

IN the present number of the JOURNAL we publish a report of two interesting discussions upon the diagnosis and treatment of diseases of the stomach, one of which took place before the Section on Practical Medicine of the American Medical Association, and the other before the Section on Clinical Medicine of the Suffolk District Medical Society. It is hardly an exaggeration, we believe, to say that no subject presented at the meeting of the American Medical Association exceeds in importance this of the physical examination of the stomach as a means of diagnosis and treatment. The methods by which we can now determine the chemical composition of the gastric juice and the functional activity of the stomach give us, at last, objective data in regard to gastric diseases which before were lacking. Of the value of such data in diagnosis there is, of course, no question, and these new methods of examination of the stomach, which we owe entirely to the Germans, are of as much importance for the diagnosis of gastric disease as is the examination of the urine for the diagnosis of renal disease, or the use of the stethoscope for thoracic affections. The disagreeable features attendant upon such an examination will naturally act as a check to its general adoption, and many physicians will content themselves with making a diagnosis without a resort to the stomach-tube. In certain cases of phthisis, or Bright's disease, or tabes dorsalis, we may feel reasonably sure of the diagnosis without resorting to a careful physical examination, and the same may be said of many cases of gastric disease; but there are many other cases, like those reported by Dr. Pepper, where we gladly welcome anything that will give us new light. Such light will, we believe, be furnished by the German methods of investigation, and the men who have used them the most are the firmest believers in their value. Certainly, in the short time they have been in use, our knowledge of the diseases of the stomach has been so much increased, that in no other subject in medicine, except in bacteriology, have so great advances been made.

The most important question which is to be determined by the chemical examination of the gastric juice — but by no means the only one, as some seem to think — is in regard to the presence or absence of free hydrochloric acid, and the chief point in dispute at the present time is in regard to the absence of hydrochloric acid in cancer of the stomach. Dr. Shattuck has done well in calling attention to the fact that we must not rely upon one or two observations. Only the constant absence of the acid is of value. The question of the absence of free hydrochloric acid in cancer is still in dispute, but in the great majority of cases thus far reported the ordinary tests — methyl-violet and phloroglucin-vanillin — fail to give the reactions. Certain observers, among them Rosenbach and Germain-Sec,

have found the acid by the ordinary tests in a few cases of cancer, and more elaborate tests performed by Cahn and Von Mering have shown that there is hydrochloric acid, either free or in unstable combination, in cases of cancer examined by them. Nevertheless, the absence of free hydrochloric acid, although not absolute evidence, is a sign of great value in diagnosis. Dr. Whittaker's comparison of this sign with albuminuria is suggestive. Albuminuria is certainly a sign of great value in the diagnosis of renal disease, but it is not pathognomonic of such a disease, nor is it always present. In the same way, it is probably true that free hydrochloric acid is not always absent in cancer of the stomach, although it is absent in the majority of cases, and, furthermore, when hydrochloric acid is absent, it is not pathognomonic of malignant disease. This latter point has been overlooked by some of the recent writers on the subject, but the pioneers in the field, notably Riegel, have repeatedly called attention to the fact that there were various affections of the stomach in which free acid may be persistently absent, and Ewald has noted its absence even in health. It is, therefore, assuming too much to claim that its absence is pathognomonic of any one affection.

We must still hold a judicial position with regard to these new methods of examining the stomach. They have already done much to advance our knowledge, and will undoubtedly do much more, but it is the part of ignorance to rely upon single examinations, or to claim a decisive value for any single test. Repeated examinations, not only of the chemical composition of the gastric juice, but also of the various functions of the stomach, added to the methods already employed, will give us most valuable information both in the way of diagnosis and treatment. Single tests for this or that sign will in this, as in all other classes of disease, lead to unbalanced and erroneous judgments.

ON THE TREATMENT OF PHTHISIS PULMONALIS BY SOJOURN IN ELEVATED CLIMATIC STATIONS.

AT the recent meeting of the Royal Society of Medicine and Surgery (May 8th), Dr. Theodore Williams read a paper on the above subject, and indicated the results which he had obtained in a series of 141 cases.

These 141 patients, all of whom had been under observation during the last nine years, were sent to various stations of the Alps, of the Rocky Mountains, and South Africa. The altitude of the stations varied between 1,500 and 1,700 meters. The average length of time during which the disease had been progressing before the beginning of the treatment was about two years; sixty-one patients had had hæmoptysis, and four of these were cases of true hæmorrhagic phthisis. The mean age of the men was twenty-seven years, and of the women, twenty-four years. Ten patients had fever at the time of their departure; ninety-one were

in the first stage, and fifty in the second or third; seventeen per cent. only of the cases could be classed as incipient phthisis.

In fifty-three cases both lungs were affected, in eighty-eight only one, and the left oftener than the right. The presence of the tubercle bacillus was detected in the sputa of fifty-four patients, but it is only recently that such examination has become the rule. These patients had all been previously treated by tonics, cod-liver oil, etc.

When once the patient had arrived at the station where he was to reside, he was required to take daily walks on level ground; later on, skating, tobogganing, and mountain climbing was allowed. During the spring thaws, the patient was advised as a general rule to quit the Engadine, while, if in Colorado and South Africa, he might sojourn the year round in the mountains or on the elevated plateaux.

These are the results which Dr. Williams claims to have obtained: the proportion of complete recoveries has been 41.13 %. In 29.78 % there was considerable improvement, in 13.47 % slight improvement; 17.02 % were made worse by the change; there was a mortality of 13.47 %.

From the point of view of the local symptoms, an amelioration was noted in 74.82 % of the cases; in 3.59 % the condition remained unchanged; in 21.5 % there was an aggravation. As for the cases in the first stage of the disease, the proportion of ameliorations to cures was 91 %; in the later stages, this proportion was 46 %.

From these statistics, the writer draws the following conclusions:

(1) A prolonged sojourn in elevated climatic stations produces an amelioration in the majority of cases of phthisis pulmonalis; it may arrest the disease temporarily or permanently in many cases.

(2) It is useless to expect a favorable result unless the patient be free from fever and acute symptoms, and unless there is sufficient healthy pulmonary surface to enable respiration to be well performed in a purified atmosphere.

(3) It is seldom that the state of patients remains stationary during the sojourn in elevated regions; you note sometimes an improvement, sometimes an aggravation.

(4) The circumferential chest measurement augments from two to ten centimeters during the treatment. There is produced a considerable hypertrophy of the healthy pulmonary tissue, and more or less emphysema around the tuberculous lesions; the expansion of the thorax is accompanied by a diminution in the frequency of the pulse and of the respiration.

(5) The arrest of the disease is probably due, in part, to the compression exercised on the tuberculous lesions by the augmentation of volume of the surrounding tissues.

(6) In proportion as the local symptoms disappear, there is an amelioration in the general condition; the patient increases in weight, has a better color.

(7) Phthisical patients of both sexes equally profit by sojourn in elevated stations; as far as age is concerned, the results are less satisfactory in women before the twentieth year, and in men before the fortieth.

(8) The results are especially favorable in cases where there exists a hereditary predisposition.

(9) Mountain climates are useful in hæmorrhagic phthisis, and diminish the tendency to hæmoptysis.

(10) The arrest of the disease is the more probable the more recent the lesions, but an improvement is often noticed in old cases.

(11) The special influence of sojourn in elevated regions is observed at all altitudes above 1,500 meters.

(12) In the majority of cases, the duration of this sojourn should be six months, at least.

(13) Mountain climates are useful not only in phthisis, but in other affections, such as incomplete development of the lungs and of the thorax, chronic bronchitis without bronchiectasis, pulmonary retraction after chronic pleurisy, spasmodic asthma not accompanied with notable emphysema, and in anæmia.

(14) Mountain climate is contraindicated in the following cases: (a) tuberculosis with bilateral cavities, with or without fever; (b) phthisis with considerable diminution of the respiratory surface; (c) catarrhal phthisis; (d) phthisis with considerable irritability of the nervous system; (e) emphysema; (f) chronic bronchitis with bronchiectasis; (g) affection of the heart, of the large bloodvessels, or of the central nervous system; (h) advanced age, or a state of feebleness too great to allow exercise in the open air.

In the discussion which followed, Dr. Hermann Weber stated that he had notes of 106 cases similar to those of Dr. Williams, and he had arrived at almost identical results; namely, 40 % of cures, and about 40 of amelioration. Of the 106 patients, 70 were in the first stage. In response to a question of Dr. Haviland Hall, Dr. Williams said that laryngeal phthisis was unfavorably influenced by mountain climates.

Dr. Pollock said that he had treated more than 13,500 cases of phthisis in the Brompton Hospital, and his impression was that Dr. Williams's cases were precisely those that *might* get well or improve in London, as elsewhere. If you send to the mountains only patients who have no acute symptoms, no fever, it is not astonishing that you get good results; the absence of fever in phthisis pulmonalis is always a favorable sign. Chronic tuberculous patients who have not passed the first stage often get well in London, and as for cases where there is only one cavity in one lung, these often remain stationary, even in England, for twenty-five or thirty years. We have heard of the gout of the rich and the gout of the poor; there is also a phthisis of the rich and a phthisis of the poor, and it is to the first only that the remarks and statistics of Dr. Williams apply.

Dr. Jucker Wesi, of Maloja, Engadine, remarked that the air of the Alps produces, in a very short time, a favorable effect on the appetite. The cold, aseptic

air exercises a sedative action in the bronchial mucous membrane, and diminishes the cough. It is probable that the ozone contained in the air plays an important part, and that the solar rays, to which the patient is almost daily exposed, favor the transformation of leucocytes into red globules. It is interesting to note that patients who sweat easily do not experience the dyspnoea which often appears at the commencement of a sojourn in high regions.

The facts and conclusions above given by Dr. Theodore Williams, and confirmed by the experience of Dr. Hermann Weber, strikingly coincide with those of Dr. F. I. Knight in his paper lately read before the Boston Society for Medical Improvement, and published in this JOURNAL, April 5, 1888.

MEDICAL NOTES.

—The health-officer of San Francisco wrote to the health-officer of New York under date of March 20th, as follows: "Yesterday Anton Anderson, aged twenty-one, a native of Norway, was sent to the small-pox hospital. He stated that he came from Glasgow by the steamship *Circassian*. Immediately on landing at New York he left for this place, arriving here on the 17th instant by the Southern Pacific railroad. According to his account he was taken sick on the 11th, the eruption appearing on the 14th. It is a bad case of confluent small-pox."

A San Francisco paper says: "The steamship *Main*, from Bremen, which had been detained at quarantine for two days on account of a case of small-pox being discovered on board, reached Pier 8, Locust Point, Baltimore, yesterday. Her 1,147 emigrants were discharged and sent west by the Baltimore and Ohio Railroad. That is the way they do it in the east. On this coast she would have been kept in quarantine about a month."

—Dr. Paul F. Mundé, at the request of the Faculty of Dartmouth Medical College, has consented to deliver the course of lectures on Gynecology at that institution this year, beginning July 13th, it being found impracticable otherwise to fill the vacancy caused by the death of Dr. Dunster. Dr. William H. Parish, of Philadelphia, will give the course of lectures on Obstetrics this year.

—Prague, with a quarter million of population, treats 7,000 in-patients in her hospital and 50,000 outdoor patients, while the incomes of the medical practitioners are growing very small, according to a letter in a foreign contemporary, which says that "a large number of Bohemian practitioners are now making less than £100 a year, with a prospect of a still further diminution of their income in the near future."

—The very rare phenomenon of six at a birth occurred in the first week of May last says, the *Lancet*, at Castagnola, a village in the neighborhood of Lugano, on the Italian-Swiss frontier. The wife of the

Syndic (Mayor, as we should call him) brought forth at a birth six children, four males and two females, all of whom died shortly after, while the mother made a good recovery. Her name is Filomena Rezzonico; she is thirty-eight years of age, and has already given birth to seven children after only two confinements, four being born at one delivery and three at another. Her husband, the Syndic, by his former wife had ten children, of whom seven survive. A note with comments on the case, will shortly be published by a well-known gynecologist of Milan.

BOSTON AND NEW ENGLAND.

—At the annual meeting of the Massachusetts Medical Society next week, the usual formal dinner is to be replaced by a reception at the Vendome, which will afford an abundant scope for the social instincts of the members. We advise the members, instead of overloading stomachs and carpet-bags with the appetizing dietetic and pharmaceutical preparations which are so freely offered, to enter the hall and listen to the papers. The general list of papers is far too attractive to be read to empty seats. Come in, gentlemen, and encourage by your presence those who have spent time and care in working up their articles.

—The house recently occupied by Mrs. Robinson, of Somerville, who was convicted a few months ago on circumstantial evidence, of the murder by arsenical poison of one of her relatives, and who is supposed to have been guilty of other similar murders, has lately been occupied by a new tenant, who, in making repairs, discovered in the cellar a package of "Rough on Rats." An occupant intermediate between Mrs. Robinson and the present tenant avows that he never had any of the poison, and while it is possible that it was there before Mrs. Robinson's occupancy of the house, it is believed by the police that she used it in accomplishing the murders.

—Mrs. Kate Gannett Wells, chairman of the executive committee, and Miss Ellen M. Tower, Secretary, of the Massachusetts Emergency and Hygiene Association, gave a reception last week in honor of Miss Clara Barton, President of the "American National Red Cross," from whom the Emergency Society derives permission to use the insignia of the Red Cross. That cross, enclosed in a triangle, the triangle symbolizing the Esmarch handkerchief bandage, is used on all the documents and certificates of the society. The reception was largely attended by members of the association, and by others interested in the work, and was a pleasant occasion.

NEW YORK.

—At a meeting of the Medical Society of the County of New York, held May 28th, Dr. John C. Peters read a paper on "The Water-Supply from the Croton Lake System," in which he stated that the sewage created by 25,000 people, the largest condensed milk factory in the world, 10,000 cows, 1,200

horses, 1,500 hogs, and 40 factories, was all being run into that body of water from which the city of New York draws its water-supply. While in former years the Thames water used by London contained five times as much bacteria as Croton water, recent investigations showed that in one cubic centimeter New York water contained 526 bacteria, against 44 contained by London water. While, of course, the greater part of these were the common, harmless bacteria, still there was a large proportion capable of producing disease, and he expressed the opinion that a great deal of the scarlet fever, diphtheria, and other infectious disease which prevailed in New York might be traceable to germs derived from the water-supply.

A resolution was offered by Dr. Peters, and unanimously passed, calling for an official examination of the present condition of the waters of Croton Lake, and urging that such steps should be taken by the authorities as should be deemed advisable to ascertain if the works now being constructed will deliver to the city the "pure and wholesome water" referred to in the terms of the act creating the present Aqueduct Commission. Copies of the resolution were ordered to be sent to the Board of Health and the Department of Public Works, and when the resolution was received by the latter, the matter was at once referred to the Chief Engineer for a report. While it is probable that the efforts of Dr. Peters may excite unnecessary alarm in the public mind, it is, of course, of the utmost importance that the condition of the water-supply should at all times be the subject of the greatest possible care, and such concerted action on the part of the medical profession will no doubt have a good effect in stirring up the public authorities to a proper state of vigilance.

— Among the bills recently signed by the Governor, is one which provides for matrons in the police stations in the cities of the State, and also for a sufficient accommodation for women under arrest, separate from the apartments for males.

Miscellany.

MYOSITIS OSSIFICANS.

DR. LENDON, of Adelaide, has recorded in the Transactions of the First Intercolonial Medical Congress, August and September, 1887, says the *Lancet*, the particulars of a case of this very rare disease.

The man died at the age of forty-six, having first shown signs of the affection when only eight years old; but he had always been clumsy with his right arm and forearm and, as during boyhood the stiffness increased, it was attributed to injuries received at various times. He became greatly deformed, with bent rigid back and limbs, and before his death he suffered from numerous bed-sores, and was reduced to a pitiable state. Many muscles were partially or wholly converted into bone, notably both latissimi, which caused the scapulae to be firmly fixed to the thoracic cage. In the limbs the joint surfaces were fairly

normal, or the cartilages in fibroid degeneration, although the joints were greatly surrounded by irregular masses of bone due to ossification of muscles and ligaments. The spinal and costal ligaments were all ossified, making the back quite rigid. Dr. Lendon also quotes an interesting description of a similar case from a work on the city of Cork, by Charles Smith, published in 1750, and reproduces the engravings that represent the skeleton of this case. Reference is made to Mr. Sympton's paper on the subject, to the case described by Mr. Cesar Hawkins, to the specimen in the Hunterian Museum, and to some recently recorded cases, which, however, lack the post-mortem evidence that renders Dr. Lendon's essay so important to the pathologist.

RELIGIO MEDICI.

THE Union League Club resolutions on the death of Dr. Agnew, prepared by Chauncey M. Depew and presented by Sigourney W. Fay, contain the following: "If all Christians were like Dr. Agnew all men would become Christians. With him religion was not a cloak, but a career. It was not a formula, but a faith. It was not alone a liturgy or a creed, but the practice during every working hour of the commandment, 'Thou shalt love thy neighbor as thyself.' The profession was not only enriched by his genius and science, but thousands of young men owe to him the opportunities and examples which will enable them to take up his work and follow in his steps. The loss of such a man in the prime of life and usefulness is a public calamity, only mitigated by his good works while living and his glorious memory after death."

ALBUMINURIA IN THE APPARENTLY HEALTHY.

THIS subject was recently discussed in a short paper at the Islington Medical Society, by Mr. F. H. Stokes, as reported in the *Lancet*, March 10, 1888. He related a case in which a patient of his had been found, four years since, to have albuminuria by a consultant, who immediately took a very gloomy view of his case, and informed his wife that he would not live more than three months—a prognosis refuted by the gentleman continuing in good health to the present time, in spite of the persistence of albuminuria. There are no casts in the urine, and no other renal symptom. The urine is lithiacal, but this fault is largely influenced by the habits of the patient, especially in the matter of beer, which he used to take freely. When the beer is discontinued the lithiasis abates, and with it the albuminuria. In a happy interval of this sort the patient's urine was found free of albumen, and he was accepted for life insurance. Mr. Stokes mentioned two or three cases in which albuminuria existed for a long time in his experience without apparent harm, notably one of a gentleman still living, about sixty, in whose urine, twenty years ago, he detected a considerable quantity of albumen, which still continues. This patient has been a great athlete, and has climbed every considerable mountain that can be climbed in Europe. He is now infirm with prostatic and cystic troubles.

Mr. Keele related a case of acute nephritis, with

hæmorrhage, partial suppression of urine, convulsions, anasarca, etc., which did not prove fatal, as expected. All the symptoms disappeared, but the albuminuria persists.

Dr. Glover gave some particulars of two cases of temporary albuminuria, one in a lady about sixty-five, with severe vomiting, distressing headache, full pulse, and hot skin. There was, for one day, about a fourth of albumen. It was found that the diet had been too free, especially with regard to eggs, five of which had been taken in one day. A little starvation and purgation sufficed to remove the albuminuria and all the symptoms. In another case, that of a little girl about six, with "cold-water" feeling down the back, followed by fever, sickness, and coughing, there was slight hæmaturia, with corresponding albuminuria. The albuminuria lasted only one day, and the other symptoms gradually abated with rest in bed and other treatment.

The disposition of the meeting was to believe, with Prof. Grainger Stewart, that the gravity of mere albuminuria had been overrated.

OBITUARY. DR. EDWARD GREELY LORING.

MR. EDITOR,—Immediately after the death of Dr. Edward G. Loring, the New York Ophthalmological Society called a special meeting and the report of the committee then appointed was read and accepted at the last regular meeting of the Society. At the request of the Society I send you a copy of this report, hoping that you will kindly publish it in your JOURNAL.

Very respectfully yours,

WM. S. DENNETT, Secretary.

Dr. Loring joined the New York Ophthalmological Society, January 13, 1869. He was elected the President of the Society January 12, 1874. He died suddenly in this city April 23, 1888. During the twenty years in which he was a member of this Society he was a constant attendant at its meetings, no one was more beloved than he for his many social qualities and in the scientific work of the Society his word was listened to with a respect accorded to but few. It is fitting that a brief sketch of his life should be entered upon our minutes.

Dr. Loring was born in Boston, September 28, 1837. He was a son of Judge Edward Greely Loring. For a short time a member of the class of 1861 at Harvard College; he went abroad and began the study of medicine in Italy. For three years he was enrolled as a student at Florence and Pisa, and at the University of the latter place he was a devoted student in anatomy of Professor Duranti. In 1862 he returned to America, and in 1864 graduated at the Harvard Medical School, winning the Boylston Prize Essay.

Upon receiving his degree in medicine, Dr. Loring devoted himself to the study of ophthalmology under the direction of Dr. Hasket Derby, of Boston. He was appointed Ophthalmic externe by Dr. H. W. Williams, at the City Hospital, and subsequently served for a short term at the Massachusetts Charitable Eye and Ear Infirmary. In 1865, he established himself in practice in Baltimore, remaining there but little over a year when he came to New York to become associated with the late Dr. C. R. Agnew, who had taken this partnership as dissolved, and until his death Dr. Loring has practiced medicine in New York city.

He was a surgeon of the Manhattan and Brooklyn Eye and Ear Hospitals and subsequently a consulting surgeon of the latter institution. He was in 1874 appointed an ophthalmic surgeon of the New York Eye and Ear Infirmary, and held a similar position at the Fiske Eye Hospital.

Original in thought, scientific in method, bold in execution, Dr. Loring was a skillful surgeon, a thoroughly-trained physician, as an author he was conspicuously known both in this country and abroad for his original contributions to medical literature. In this brief memoir it would not be in place to discuss the value and extent of his literary work. His writings were upon nearly all the subjects embraced in the science of ophthalmology. His text-book on Ophthalmoscopy, the completion of the second volume of which occupied the last days of his life, will remain for all time his most lasting memorial.

Dr. Loring made the Refraction Ophthalmoscope a working instrument, to which nothing of any importance, except the tilting mirror, has been added since. By whatever name the latest manufacture is known, this instrument is still the Loring Ophthalmoscope, vastly better than all its predecessors.

In the discussions of this Society he was frank and straightforward in his action and speech, scholarly in his address; the type of a brilliant, honest and independent man.

A keen observer, unflinched by the traditions of the schools, his opinions based on sound anatomical and physiological knowledge, he was a hater of sham, a follower of truth for the truth's sake.

Correspondence.

OVARIOTOMY IN AGE.

LONDON, ENG., May 23, 1888.

MR. EDITOR,—In the JOURNAL of May 3d I find an interesting case of "Ovariectomy in a Patient Eighty-two Years and Four Months of Age," by Dr. Homans. This patient certainly appears to be the oldest who has ever recovered from ovariectomy. But I am surprised to find that the author, as well as Dr. Lorini, who has made some wide literary investigations at the behest of Drs. Homans and J. S. Billings, failed to find "any case recorded older than seventy-eight years of age." In the *Buffalo Medical and Surgical Journal* for September, 1866, and in the *American Journal of the Medical Sciences*, Vol. LIII, 1867, page 284, a record will be found of Dr. Miner's case of ovariectomy in a woman aged eighty-two. The tumor was multilocular, and weighed nineteen and a half pounds. The extremities of the pedicle-ligature were passed through the vaginal septum. The patient died fourteen days after the operation. Schröder operated successfully on a patient aged seventy-nine, and on another aged eighty. Miner's and Schröder's cases are noted both in the second edition of Olshausen's "Krankheiten der Warien," and in my "Handbook of Gynecological Operations."

I remain, dear sir, yours truly,

ALDAN DORAN.

THE IMPORTATION OF LEPROSY.

MR. EDITOR,—It may be a matter of interest to your readers, in connection with your remarks upon "the importation of leprosy" in the last number of the JOURNAL, to learn that within two years I have been consulted by two former residents of the Hawaiian Islands in relation to cutaneous manifestations, which, they feared, might be the early symptoms of that disease. If their fears had been well founded, what should have been done by their medical adviser for the protection of the communities in which they live, which should not as well be required in a case of syphilis? The spread of the latter through non-venerable channels is of not uncommon occurrence amongst us, and the chief difference between the two diseases is that the latter is more or less under the control of treatment, while the other is scarcely at all so. Not until complete isolation is enforced by national governments over the whole earth simultaneously against syphilis and leprosy, will these great and kindred historic destroyers of mankind become exterminated.

JAMES C. WHITE, M.D.

TREATMENT OF FRACTURES OF THE CONDYLES OF THE HUMERUS. A CORRECTION.

BOSTON, May 28, 1888.

MR. EDITOR,—The remarks of Dr. David W. Cheever, as published in your issue of May 17, 1888, in the report of the Suffolk District Medical Society, are so entirely misleading that it seems improper to let them stand without correction.

That I ever practiced or taught that fractures of the external condyle of the humerus should be treated in a straight position, is an absurd mistake. What I taught and advocated was that fractures of the internal condyle were to be treated in the straight position, while fractures of the ex-

ternal condyle was best treated by maintaining the arm flexed at an acute angle, for which purpose any splint is a dangerous nuisance. It is enough to place the hand on the opposite nipple and maintain it there by adhesive plaster a sufficient time.

Dr. Cheever says that I became convinced that although it was philosophically correct, it was not practical in its results. I taught that it was philosophically wrong and therefore impractical. Had it been philosophically correct it must have been practically correct. To reason otherwise is folly.

The slurring remark that I had picked up the idea from some French author is silly. No author ever advanced such an idea. A most original and excellent article was published, with plates, in the earlier numbers of the *Annals of Surgery*, advocating the plan of treating fractures of the internal condyle of the humerus in the straight position, and those of the external condyle in the flexed position at nearly a

right angle. It was written by Oscar H. Allis, M.D., of Philadelphia, a renowned anatomist and surgeon. He may be a Frenchman, but if he is, he is an honor to his native country, and to that of his adoption.

It is curious to remark that many years ago the same argument brought forward by Dr. Cheever was used by Pèzerat in favor of treating fracture of the inner, *not* outer, condyle straight, but Malgaigne declared it nonsense because the flexors arising from the inner condyle were thus made tense. In truth, the muscles have little or nothing to do with the question. It is the opposition of bone against bone that does the business.

Dr. Gay's remarks in the same number of the *JOURNAL* are sounder. It is evident he remembers the case of the child treated without splints in the wards of the City Hospital, the result of which was satisfactory in every respect, as I have ever found it to be.

W. C. B. FIFIELD, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING MAY 26, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrheal Diseases.	Diph. & Croup.	Scarlet Fever.
New York	1,526,081	703	270	21.42	14.42	1.68	9.06	4.34
Philadelphia	1,016,758	370	121	11.88	16.74	2.16	2.16	.54
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	750,000	—	—	—	—	—	—	—
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,155	128	49	8.58	17.16	3.12	—	—
Boston	407,024	164	46	9.76	15.86	2.44	6.09	.61
New Orleans	248,000	142	71	32.38	8.45	23.23	4.93	—
Buffalo	230,000	—	—	—	—	—	—	—
District of Columbia	225,000	—	—	—	—	—	—	1.61
Pittsburgh	210,000	62	31	12.88	6.44	3.22	3.22	—
Milwaukee	200,000	77	39	3.87	10.32	—	1.29	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	19	6	26.30	21.04	10.52	—	—
Charleston	60,145	35	18	20.00	2.86	2.86	—	—
Portland	40,000	16	3	—	6.25	—	—	—
Worcester	76,328	24	14	21.96	20.80	—	20.80	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	15	4	—	20.00	—	—	—
Fall River	61,203	27	4	14.80	22.20	—	3.70	—
Lynn	51,467	21	—	—	33.33	—	—	7.40
Lawrence	40,175	11	3	18.18	9.09	—	—	—
Springfield	39,052	—	—	—	—	—	—	—
New Bedford	36,298	11	3	18.18	—	—	18.18	—
Somerville	33,307	—	—	—	—	—	—	—
Holyoke	32,887	16	5	18.75	37.50	6.25	6.25	—
Salem	28,781	11	0	18.18	9.09	—	9.09	—
Chelsea	27,552	—	—	—	—	—	—	—
Haverhill	24,979	—	—	—	—	—	—	—
Taunton	24,796	9	2	—	11.11	—	—	—
Brockton	24,784	—	—	—	—	—	—	—
Gloucester	23,187	10	2	20.00	40.00	10.00	—	—
Newton	21,105	5	1	—	—	—	—	—
Malden	18,932	7	0	—	28.56	—	—	—
Pittsburg	17,534	6	0	—	50.00	—	—	—
Waltham	16,661	1	0	—	—	—	—	—
Newburyport	13,859	6	0	33.33	16.66	—	—	—
Northampton	13,419	7	2	—	—	—	—	—

Deaths reported 1,893: under five years of age 594; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 329, consumption 283, acute lung diseases 232, diarrheal diseases 70, scarlet fever 37, typhoid fever 22, whooping-cough 18, measles 16, malarial fever 13, cerebro-spinal meningitis 10, erysipelas 10, puerperal fever 10, small-pox seven. From typhoid fever, Philadelphia 13, New York three, Baltimore, Boston, New Orleans, Pittsburgh, Milwaukee and Lawrence one each. From whooping-cough, Charleston six, New York five, Philadelphia four, Baltimore, New Orleans and Gloucester one each. From measles, New York eight, Baltimore three, Philadelphia, Pittsburgh and Milwaukee one each. From malarial fever, New York five, New Orleans four, Philadelphia and Baltimore two each. From cerebro-spinal meningitis, New York three, Nashville two, Pittsburgh, Milwaukee, Worcester, Salem and Holyoke one each. From erysipelas, New York six, Philadelphia two, Nashville and Lawrence one each. From puerperal fever,

New York seven, Philadelphia, Milwaukee and Fall River one each. From small-pox, New York four, Philadelphia three.

In the 19 cities and larger towns of Massachusetts, with an estimated population of 974,035, the total death-rate for the week was 19.22 against 20.51 for the previous two weeks.

In the 28 greater towns of England and Wales with an estimated population of 9,398,278, for the week ending May 12th, the death-rate was 17.6. Deaths reported 3,174: infants under one year of age 738; whooping-cough, 109, scarlet fever 45, measles 40, diarrheal 32, fevers 29, diphtheria 26, measles (Sheffield three, Manchester, Preston and Leeds one each) six.

The death-rates ranged from 12.5 in Cardiff to 26.7 in Bolton; Birkenhead 18.8; Birmingham 15.7; Bradford 17.0; Hull 19.1; Leeds 19.6; Leicester 18.5; Liverpool 17.2; London 16.6; Manchester 21.9; Newcastle-on-Tyne 21.7; Nottingham 19.2; Sheffield 14.8.

In Edinburgh 21.3; Glasgow 24.4; Dublin 23.1.

The meteorological record for the week ending May 26, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barom-eter.	Thermometer.			Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Sunday, ... 20	30.09	56.0	67.0	45.0	69.0	47.0	60.0	N.W.	N.W.	N.W.	10	8	16	C.	F.	C.		
Monday, ... 21	30.17	57.0	66.0	44.0	53.0	47.0	58.0	N.W.	N.W.	N.	24	12	6	C.	C.	C.		
Tuesday, ... 22	30.24	56.0	69.0	48.0	44.0	55.0	50.0	N.W.	S.E.	S.W.	4	13	10	C.	C.	C.		
Wednesday, ... 23	30.11	58.0	70.0	49.0	52.0	53.0	53.0	S.W.	E.	S.	9	6	8	C.	O.	O.		
Thursday, ... 24	30.06	58.0	69.0	49.0	57.0	91.0	84.0	S.E.	E.	E.	4	12	9	O.	O.	O.		
Friday, ... 25	30.03	58.0	66.0	51.0	85.0	76.0	77.0	N.E.	N.E.	N.	12	12	9	O.	F.	O.		
Saturday, ... 26	29.98	62.0	65.0	47.0	84.0	79.0	93.0	N.	E.	N.	7	10	10	O.	O.	R.	1	.13
Mean, the Week,	30.097	55.0	62.0	49.0			65.3										3½	

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING JUNE 2, 1888.

CRAIG, F. C., passed assistant surgeon. Detached from Naval Hospital at Norfolk and to the Naval Hospital at New York.

WESTWORTH, A. R., assistant surgeon. Detached from the United States Steamship "Galena," and to the Naval Hospital at Norfolk.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE FOUR WEEKS ENDING JUNE 2, 1888.

WYMAN, WALTER, surgeon. Leave of absence extended fourteen days. May 22, 1888.

MAORIDDER, G. M., assistant surgeon. Relieved from duty at Marine Hospital, Chicago, Illinois, detailed as medical officer Revenue Bark "Chase," during summer cruise. May 19, 1888.

DETAX, S. C., passed assistant surgeon. Granted leave of absence for ten days. May 29, 1888.

CARRINGTON, P. M., passed assistant surgeon. Granted leave of absence for five days. May 29, 1888.

SOCIETY NOTICES.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.—THE SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE will meet at Huntington Hall, Massachusetts Institute of Technology, Tuesday, June 12, 1888, at 7.45 o'clock. Business: Dr. Thomas Dwight, "Demonstration of Models of Frozen Sections of Anatomy." Dr. T. M. Ketch, "Exhibition of Aseptic Appliances for Infant-Feeding." Dr. S. G. Webber, "Cases of Tumor of the Brain." Drs. C. F. Folsom, J. J. Putnam, W. N. Ballard and others will take part in the discussion. Dr. E. W. Cushing, "Studies in Malignant Disease of the Body of the Uterus, with Stereoscopic Views." Dr. George M. Garland, "Upon the Use of Gelsolinum Semperivens." Members of the profession are cordially invited to attend.

ALBERT N. BLODGETT, M.D., Secretary.

A. L. MASON, M.D., Chairman.

RHODE ISLAND MEDICAL SOCIETY.—The Seventy-seventh annual meeting will be held in Lyceum Hall, 62 Westminster Street, Providence, at 10 o'clock, A. M., on Thursday, June 14, 1888. The Annual Address will be delivered by Charles V. Chapin, M.D. Subject: "The Nature and Prevention of Scarlet Fever." The Annual Dinner will be served in Blackstone Hall, Washington Street, corner Snow. Dr. William H. Palmer, Anniversary Chairman.

W. R. WHITE, Recording Secretary.

H. G. MILLER, President.

NEW HAMPSHIRE MEDICAL SOCIETY.—The Ninety-eighth annual meeting will occur in the Hall of the G. A. R., 15 Warren Street, Concord, N. H., Tuesday, June 19, 1888, at 11 o'clock, A. M. The annual dinner will be served Tuesday, at the Eagle Hotel, at 1 P. M. Tickets will be for sale by the Committee of Arrangements at the opening of the morning session. The Anniversary Chairman, Dr. George Cook, of Concord, will preside. The Society will meet at 8 o'clock A. M., Wednesday, June 20, 1888, and any papers or discussions laid over from the programme of Tuesday will be in order.

APPOINTMENTS. NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

At the meeting of the Board of Trustees of the New York Post-Graduate Medical School, held on Monday, May 28, 1888, the following appointments were made in the Faculty: Abraham Jacobi, M.D., Professor of Diseases of Children; Robert C. Weir, M.D., Professor of Clinical Surgery; Peter A. Callan, M.D., Professor of Diseases of the Eye; L. Bolton Bangs, M.D., Professor of Diseases of the Genito-Urinary Organs and of Venereal Diseases; Joseph E. Winters, M.D., Professor of Diseases of Children; O. B. Douglass, M.D., Professor of Diseases of the Nose and Throat. Dr. William A. Hammond being about to remove from New York to Washington, has resigned his position as Professor of Mental and Nervous Diseases. Dr. Hammond was one of the founders of the School.

BOOKS AND PAMPHLETS RECEIVED.

- Report of the Mitchell Library, Glasgow. 1887.
- On Exercise for Prevention and Cure of Deformities. By A. H. P. Leuf, M.D., Philadelphia. Reprint. 1888.
- Infantile Feeding, especially with Reference to Subjects with Infantile Eczema. By L. Duocan Buckley, A.M., M.D., Physician to the New York Skin and Cancer Hospital, etc. Reprint. 1887.
- An Aseptic Atmosphere; Club-Foot; A Rectal Obturator; Palatoplasty. By David Prince, M.D., Jacksonville, Ill. 1888.
- Atlas of Venereal and Skin Diseases; Fasciulus IV. By Prince A. Morrow, M.D. New York: Wm. Wood & Co. 1888.
- Inebriety; its Etiology, Pathology, Treatment, and Jurisprudence. By Norman Kerr, M.D., F.L.S., etc. Philadelphia: P. Blakiston, Son & Co. 1888.
- The Physician's Leisure Library, No. 7; issued monthly. The Modern Treatment of Pleurisy and Pneumonia. By G. M. Garland, M.D. Detroit: Geo. S. Davis. 1887.
- University of Nebraska; First Report from the Patho-Biological Laboratory; Southern Cattle Plague and Yellow Fever. By Frank S. Billings, Director, Lincoln, Nebraska. Author's edition.
- Sulla Natura Parassitaria dei Tumori Cancerosi. Comunicazione Preventiva del dottore Ignazio Lampiasi-Rubino, Direttore del Gabinetto di Batteriologia dell'Ospedale S. Antonio di Trapani. Reprint. 1888.
- Guide to Health Resorts in Australia, Tasmania and New Zealand. Edited and compiled by Ludwig Brock, author of the Australasian Medical Directory and Handbook. Centennial edition. Published at the Australian Medical Gazette Office, Sydney. 1888.
- Dissolution and Evolution and the Science of Medicine. An Attempt to Co-ordinate the Necessary Facts of Pathology and to establish the First Principles of Treatment. By C. Pitfield Mitchell, Member of the Royal College of Surgeons, England. London: Longman, Green & Co. 1888.
- An Address on the Treatment of the Gonity Constitution. By I. Burney Yeo, M.D., F.R.C.P., Professor of Clinical Therapeutics in King's College, London; and Physician to King's College Hospital. Reprint. 1888.
- The Physiological Argument in Obstetric Studies and Practice. By A. F. A. King, A.M., M.D., Washington, D. C. Reprint. 1888.

Address.

RE-ESTABLISHMENT OF THE MEDICAL PROFESSION.¹

BY R. JOY JEFFRIES, A.M., M.D., OF BOSTON.

MR. PRESIDENT and Fellows of the Massachusetts Medical Society: It is very generally agreed that the lawyer, the minister, the squire, and the physician do not hold the same relation to the community as they formerly did. As that position was one of trust and confidence, it well behooves us to carefully study the causes that have broken it down, and correct, if possible, any fault lying at our door. On the other hand, it is equally our duty to right ourselves before the community, if our efforts have again placed us in a position to be trusted and confided in. Moreover, if the community misjudge the whole from a part of the profession, it is the duty of those truthfully striving not to have their labors misjudged and injured by any false sentiment towards others not so acting.

There are, of course, many natural causes for the three professions not holding their ancient position. They are now but three of many existing in the world. Science and art and technology have introduced distinctly professional fields of study and occupation.

In the older compact and more isolated communities the diffusion of knowledge was less. The three professions represented nearly the whole of it. Moreover, the diffusion of falsehood was less, though credulity remained. All forms of medical chicanery have increased and widened with the means of reaching by the public press and the post office a larger circle of the ignorant and credulous, poor and rich. Wealth does not now, as formerly, include knowledge and common-sense. Money is more easily gathered than knowledge, and its accumulation does not preclude the continuance of its owner's previous credulity or gullibility. Moreover, money renders its sudden possessor more dogmatic in his superstition and infallibility. The poor man is open to teaching and advice, the rich man thinks that his wealth places him above both of these.

In the village life of former days, any question of medicine, natural science, or natural philosophy was referred to the physician, and his decision taken. The common-sense imbibed in medical education and practice enabled him to expose the falsehood started by cupidity and kept alive by credulity. The same confidence was reposed in the minister as to all matters of morality or theology, and in the lawyer as to property and legislation. But we are not concerned with them. Our own position alone should occupy our thoughts and efforts.

Why have the profession as a whole lost their hold on the community and the respect naturally theirs? In this country democracy has brushed away any glamor of office, all that which hedges in a class or an organization. Even that which clings longest, namely, any peculiarity of manner or dress which separated us from others, has melted away before the sun of common-sense and general intelligence. When the physician possessed more knowledge, more education, than those about him in his community, he was respected for these as he should have been. But now—days those about him have in the general advance

of education gained upon, and only too often outstripped him. In the struggle for existence, the doctor goes to the level that he is entitled to by his education and the refinement this gives him. If the ranks are filled with men without education, except that which they are supposed to have medically, then the laity, finding that such are destitute of the former, very fairly doubt the existence of the latter. Good breeding and a good education are not now, as formerly, the natural attributes of those legalized by a diploma. Cheap and charity medical schools have multiplied over our country to a greater extent even than seminaries, colleges, and so-called universities. The profession well know that these medical schools are but local advertisements, and that in their struggle for existence they underbid each other, not only as to medical education, but also receive as students and give medical degrees to men comparatively destitute of even a common education. The various State legislatures grant these medical schools the power to issue such degrees, which the laity ignorantly accept as a proof of education, and that is what they are sold and bought for.

Now, in course of time the laity have found out that the holding of a medical degree, being a doctor, does not preclude ill-breeding and lack of education. And they have naturally arrived at the conclusion that a medical man may be pretty low in the social scale gauged by education; hence that the study and practice of medicine mean but little.

To give every individual in the community, without respect to color or sex, an opportunity for the best education he can attain to and his ability deserves, is a noble charity on the part of the State or the private citizen. For the public or private institution to sanction by its seal ignorance and quackery in any form, is simply cheating the community for the moneyed benefit of the few and unworthy. The poor and unlearned are deluded by the title of doctor, and the delusion has the sanction of the State by the judge on the bench deciding that one medical degree is as good legally as another. The laity know nothing of and cannot judge medical matters, and hence are easily duped in giving State sanction to any and every form of rascality under the guise of medical teaching, from a Druid college to a Christian scientist's bucket-shop, thus helping to fill our graveyards and insane asylums. The community demands protection in everything except precisely where it needs it; namely, from ignorance, prejudice, and superstition.

It is from such causes, it seems to me, that the medical profession as a whole has dropped in the social and educational scale, lost power and lost influence. The public recognize that it is largely entered into as a trade or business, and that many of its members hold degrees and diplomas purchased of the mills, legalized it is true. But so are the dramshop and saloon legalized. The professors in our law schools well impress on their students that law has nothing to do with justice. One doctor is the same as another to the public, to such an extent that even men of attainment and culture fail to distinguish the honorable and well-educated physician from the quack and the charlatan.

I have found many truly scientific men treating us most unfairly in this respect. They tolerate licensed or unlicensed pretenders in medicine without separating them from those of the profession whose knowledge and proved ability really place them on an equality

¹ The annual address to the Massachusetts Medical Society, June 13, 1888.

with themselves. They give credence to and put faith in, associate with, men whose ignorance, charlatanism and want of breeding are such as they never would admit them in their own field of study. Men of science in other branches receive from no class greater recognition and respect than from the best men in our profession, who know enough to appreciate knowledge and its attainment. It is but fair that we ask of them such discrimination as they employ towards each other, and not attribute any protest on our part to narrowness, professional jealousy, etc. It can only be that they as members of the laity imbibe prejudice from inability to discern and judge of medical matters.

The teachers and the examiners in the best Medical Schools all over the world are demanding greater educational requirements of men desiring to study medicine. And this most rightly, because it is impossible to teach medicine to those without thorough foundation. They cannot learn, and to give them diplomas half-earned, but adds to the load the educated portion of the profession have to carry. The refinement which education gives is needed in the practice of medicine. Education of a high standard is needed for the doctor to hold his proper relations to the community, besides a thorough knowledge in his calling.

Medicine can only recover its former just position when the world is forced by its existence to recognize that to be a graduate of a good medical school means to have the education of our best universities in addition. The world will not now believe and trust in a man's medical knowledge unless they have proof of other education besides, which adds force and power and refinement. The doctor must be, can be, and will be, a man of science. As such we can ally ourselves with the great body of men striving for knowledge and seeking truth. From the lack of this, a large part of our profession is not distinguishable from the man of business or the tradesman, perhaps perfectly respectable, but perfectly commonplace, and worthy only of the position trade and business take in the community.

The avenues to wealth or official power are quite outside our calling. As physicians we cannot compete with trade or business. But this is our common lot with other scientific men. Wealth is a mighty power but it falls palsied before knowledge. Slowly but surely, I believe, is the former yielding place and respect to the latter. Certainly Cæsar is never more flattered than when treated as possessing knowledge, education and the refinement it brings.

Are we not in honor bound to do all in our power to bring up the standard of education and the standard of professional requirements in our callings? Educators tell us that it would be a good thing for the world if nine-tenths of our so-called academies and little colleges were swept away and merged in large and strong institutions. Certainly it would be a good thing for the world and for our profession if nine-tenths of the medical colleges were swept away and what was good in them gathered into a few great medical universities, placed where teaching and study could best be carried out.

Why should not this Society quickly raise its standard of requirement for admittance, such as would render membership a proof of educational refinement and professional knowledge? I grant you that moral

courage and backbone are needed to do this. But I insist that the possessors of these exist among us, and await only support from the majority. Let them have it, and this at once, or else the best men in the profession must separate and form themselves into a body known and respected for possessing what the others do not. May this necessity never come in my day. But we must sympathize with the man of scientific attainment and educational refinement forced to recognize another who is ill-bred and half educated, simply because the latter holds also a medical degree which insures nothing of these. That is trades union.

I hear expediency, desire to conciliate for ultimate purposes, compromise, saying, perhaps with bated breath, we cannot be so high-toned, we cannot expect doctors to have the refinement of education, or more professional knowledge than enough to get along in practice. I answer at once, with no hesitation or reservation, that there is an increasing number of men in our ranks who have educational refinement and high professional attainments.

Again, I hear it said that the requirements of a physician's vocation tend to break down his literary life and hinder any advance in his medical study. This is but an attempted defence of the ignorant who never should have been allowed to enter our ranks, and who have done so for trade through chicanery. No one of the laity has to descend to the low offices the sacred duty of a physician calls upon him to perform for his patient. Such never detract from his refinement or his dignity. Circumstances may call upon us at times to do any manual or menial work. We elevate it, not degrade ourselves, by performing it as a part of the burden we assume with our title. There is nothing demeaning in taking care of your horse, your furnace or your boots; there is in saying "I be," and in calling yourself an "allopath."

A knowledge of the formation and working of the human frame, so-called anatomy and physiology, the recognition of the diseases incident to humanity, the control of these latter by hygienic methods, drugs or surgical interference, are what separate our profession from the rest of the community. We are a very distinct class, wholly apart from the rest of our fellow-men who have gained or who are pursuing knowledge. Any intelligent person in proportion to his intelligence or capacity, may have some ideas of justice or injustice which we call law, of right or wrong which we call morality or theology, or of the great principles of the other professions now recognized. But no man or woman, no matter how intelligent, can make any truthful decision as to our bodies in health or disease, or how the latter may be prevented or mitigated by any human means. It is only the very shrewd among the laity who recognize and act on this. I do not mean the blind trust of the ignorant and credulous or superstitious.

The great mass of the laity feel perfectly competent to judge of medical matters as they do of other things, where there is seeming cause and effect. They feel as if it was an insult to their common-sense and discernment, not to be able to instantly judge, where we with all our knowledge and experience, feel still incompetent to decide the present or the future. They regard the cautious safety in which we feel our way, as only a proof of ignorance or incapacity, referring to the glib answer they get from the charlatan in support of their opinion. Nothing irritates men or

women of the laity more than to have their medical judgment shown up to them as silly credulities. They stand by these, and the quack who has induced them, the firmer, the more they have been deceived. The greater the knowledge and education or even the scientific attainments, the more firmly will the laity feel assured of their capacity of judging things medical, and resent exposure of their special fad. In their own department of learning or research they would derisively laugh at any one arguing from such evidence as they have accepted without challenge in matters medical.

I have often shown a business man to what silly credulity he has yielded in what concerned his own life and health, or that of those he loved best. And I have asked him what would be his position if he yielded to such charlatanism in his business and everyday life, acted on such evidence, and adhered to such falsehood. Many such a man has afterwards thanked me for the new thoughts I had given him, and the warnings to balance evidence with common-sense and applied intelligence.

Human nature is such that you often cannot argue with or convince it. But human nature is very sensitive to being proved silly, or even credulous. Nothing is more powerful than the exciting a smile at an opponent's expense. Now when physicians meet in social intercourse with each other, what for them is more entertaining or affords greater amusement, than the relation of their individual personal daily experience of the laity's medical ignorance and hence medical credulity? No matter how great the rascality of the special quack or charlatan in question, he will not be inveighed against, the laugh is always at the expense of the dupe, the greater whose intelligence, the greater his silliness of action. There is no more complete satire on humanity than just this never-ceasing fund of entertainment the laity of all classes afford us. Could the public hear and understand our collected knowledge of this folly, their ears would tingle, and if shrewd enough, they might profit by it. But the tailless fox, even with an unhealed stump, will recommend the trap to his friends. None know this better than the quacks and charlatans. The laughter we enjoy at the laity's expense is a bitter medicine for them, but when judiciously administered may often be of great benefit. Its exhibition requires tact and moral courage. The "paths" who fatten on the laity's medical credulity, never offend the laity's belief in the infallibility of its judgment, for this would soon affect their pockets. The "paths" pretend to be doctors; the pretence satisfies the laity.

Our profession know only too well that there is no limit to human gullibility in all matters medical. High and low, rich and poor, ignorant and learned alike, are human in all that relates to their bodies, and hence gullible, credulous and superstitious. Now it requires very little brain-power to fool those who know nothing of the subject concerning which they are being fooled, and who are *willing dupes*. The ignorant laity will swallow anything mentally and physically, and so will the intelligent and the learned, if you only favor their conceit of knowing more of our profession than we do ourselves. This is the secret of the various patibquack's success.

The community never challenges the charlatan's knowledge or ability whilst accepting his statements. To be a quack doctor is the easiest thing in the

world; requires but little sharpness. The most successful medical pretenders could not earn their salt in any business pursued by their clients.

All this proves that the whole laity are but a parcel of children in their relation to us, destitute of discernment, ability to discriminate, power of observation and deduction. A man or woman in bodily pain or fear, or seeing those they love so, is wholly without mental balance and seems to lack at times even common-sense. Very little sharpness is then needed to prey upon human weakness. The subsequent shame of having been preyed upon when the quack is exposed, but renders the latter's dupe his strongest defender. The laity always have resented and always will furiously resent being considered what the intelligent and educated physician knows they are, from that knowledge which he has and they have not.

Shall we simply avail ourselves for gain of the laity's ignorance of the subjects we are familiar with, their passions, prejudices, superstitions and unfathomable credulity? Is it not dishonest to do so, what in business is called sharpness? We may have to bow before our patient's knowledge or scientific standing, but real or unreal pain or fear will readily make him bend the knee to our true or supposed superior position. Shall we take advantage of his condition? Why not, says the doctor whose profession is a trade; why not, says the sharp business man, it is perfectly legal. But law is not honor or justice. It is *our duty*, a part of the work of *our life*, to protect the community, to resist quackery, by always and at all times unmasking it, firmly, fearlessly, earnestly.

Men and women are attracted to this or that quack by the special "pathy" he pretends, and in belief that the quack applies the special pathy to his or her case. A man goes to a gambling hell in the belief that he is to play at a game of chance, and will excuse himself on this. The societies who are fighting these dens show up their methods, and prove to their patrons that it is not a game of *chance*, but a game of *cheat*, — not the accidental turning of a card or rolling of a ball, but that these are turned or rolled by the gambler to fleece his victim. Now why not be perfectly straightforward and honest, and have moral courage enough to plainly tell the community the truth, namely, that there is no such thing as a "pathy," that there is no true homeopathy, that men merely call themselves that or other things simply for gain? If you, as can so readily be done, show your client that the quack to whom he is attracted by any special pretence does not even practice *that*, you will help save him and the community from fraud.

We know that this is perfectly true, and we are in a position to know whilst the laity are not. Do we not fail in our duty in letting them be deceived? Does not our silence and hence seeming acquiescence arise from motives which will not always bear the light? I am afraid that our so-called desire not to make martyrs of them does not always arise from simple prudence. Is it not rather a shrinking from offending our patrons and wounding their self-conceit and their misjudgment of things medical? We know all about the quack and pretender, licensed or unlicensed, and we simply assist his cheating the community, become *particeps criminis*, by in any way *seeming* even to recognize him professionally or socially.

One has heard in the past a great deal about physicians by their exposing and opposing quacks only

inducing the laity to protect and patronize them as injured beings. Time has wholly convinced me that the laity only regard our tolerance and forbearance as proofs of our ignorance and wrong position, and whenever, as is not infrequently the case, they learn of the true condition of affairs, simply despise us for want of courage and ability to hold our own. Professional intercourse with quacks of any kind is foolish, and is sure to react upon the one who attempts it, whatever his motives. Indeed such professional or social intercourse is worse than folly. It is of no use to heat about the bush. We know perfectly well that these men, no matter what their so-called standing in the community or number of dupes as patients, are cheating those confiding in them, not even following their pathy, as their clients believe, but simply doing what will draw from the pockets of the latter. How can you socially or professionally recognize such men and women without helping them defraud the laity, whilst you finally but receive the latter's contempt as your reward.

Next to honesty, moral courage pays best in this world in the long run. I am sore afraid that the community loses and the quack gains by the lack of it in our profession, where, if anywhere, it ought to be found, and where most certain final failure follows its absence. I mean true moral courage, and not an assumed bluntness or brass too often found in imitation of it. Shrinking from one's duty in exposing pretence to defend our patients and their surroundings from chicanery, is timidly called necessary expediency. The charlatan laughs at us for it, and the laity, when they sooner or later find it out, join in the laugh.

We do no good in demeaning our profession. Even if our motives were good in semi-recognition professionally or socially of quack pathies, the community would not give us the credit of such motives. When a quack's dupe has unearthed the rascality, his reaction is pretty violent; and if the physician, by action or inaction, has seemingly helped the rascality, he will come in for his share of the blame and be heartily despised.

I have heard it argued in the past that the various pathies in medicine, which follow one another in turn, have from the ignorance of the laity gained such a hold that it is better policy to compromise with them, and seemingly recognize them, although they are pursued simply and solely because they are an easy means of getting money from dupes. Moreover, that these dupes are often the highest and most talented in the land, hence those who cheat them must be respected by us. Why not respect the gambler and unco-steerer, because his dupes are often the highest and supposed best in the land? No, our study of medicine teaches us the truth, which the laity cannot understand without the same study. To deny or act contrary to this truth is a falsehood, whether you call it expediency, compromise, or a pharisaical desire to live at peace with all.

One of the worst features and most dangerous tendencies of this very community is the desire to compromise, which is generally the combining the wrong of both sides, each party giving up what it knows is right and true. I have often received friendly hints and chides for uncompromising opposition to medical quackery in the licensed and unlicensed. I can now look back with pleasure to not having yielded to these, but followed my own instincts and belief in my posi-

tion of hatred for and determined fighting against every pretender, and in never hesitating to express to his dupes the exact truth, whether pleasant or unpleasant for me or them. I have lived to see, my enthusiasm if you will, honesty and fidelity to the profession surely, recognized by and respect wrung from these very pretenders themselves, as proved by their sending their clients to me.

Certainly honesty is the best policy, however low that is as a reason for right action. If we make quacks respect us, the community certainly will also, and we shall thus raise our profession to where it belongs before the world.

I am sorry to see a desire and willingness to meet quacks and argue about quackery, as if this was absence of supposed professional jealousy, and showed a broader and more catholic spirit. Do the physicians who would do this know how the quacks laugh at them and despise them for it? A quack doctor knows he is such, and counts you a fool if you don't know and can't detect it, but he will be sharp enough to take advantage in any recognition of him as helping him dupe his victims. He laughs at and uses you whilst you help him cheat the community. Touching pitch defileth the fingers, and, if the pitch is hot, burns them also. Stop all social, as well as professional, intercourse with every pretender, and you will get his and the world's respect.

Our social position is a delicate one to touch on, as are all social questions in public, but our relations to the family and the individual are peculiar and often very close. Whilst in the community at large a person gravitates to his social level, it should not and cannot be so with us physicians. Our professional calling should render us the social equal of any. Where rank and caste prevailed, the physician started with but little tolerated social position. As the profession has risen in scientific attainment, it has gradually claimed and received social recognition for itself, through itself. It has to contend with all powerful rank and title and office. It speaks well for our calling that it has wrung even toleration from them. But this it has done only by showing superiority in scientific attainment, hard work in seeking and accumulating knowledge, which is power.

In our country the social lines are as strongly drawn as where rank and caste prevail, but we do not have these latter to contend with in taking or maintaining our social status. What position we occupy depends upon ourselves. In this a physician establishes his own status. The force of position and family, inherited from former times, has been since our Civil War pretty thoroughly broken down. Our communities are in a transition stage. What formerly existed can never prevail again among us. Social force and power always have been and will be influenced by wealth, which now seems to govern above its legitimate authority. Of course, social refinement and cultivation must greatly depend on accumulated wealth in the community, and if the latter is used to promote the former, then civilization is advancing among us.

Already, however, the accumulation of money has reached its limit of effect and power. One Cæsar is very much like another. Midas, whilst at first he is most lavish to obtain social recognition, soon becomes more eager to help his descendants to a cultivation wholly dependent on knowledge and its pursuit.

If now the cultivation and refinement which family gives, is to be brushed away by democracy, and if democracy is not to bow down to accumulated wealth, then where shall social power and recognition come from? What shall constitute it? To me it is very plain that it can only come from and really exist in those who become refined by learning, the pursuit of knowledge, and the search of truth for truth's sake. Cultivation makes refinement. An uncultivated community cannot be a refined one in our country. I think I see the signs of culture becoming a social force, of a society based on the power of knowledge and the amenities of life this brings with it.

In such society our profession should be, and duly recognized there. Can we as a body claim such social recognition? Where are we to-day in the science and literature of our country as a body? When social distinction depends on the successful pursuit and accumulation of knowledge, and the character and refinement this gives, where shall the physician be placed? Is it not plain that he must gravitate socially to the level his ignorance drags him? Is it not plain that the lack of educational refinement holds the profession from the social position it would naturally have? Has not the profession lost its force in the community from lack of the power of knowledge? Is not even now the individual physician's social position dependent on his individual educational refinement?

The community is forced to grant us a knowledge of things affecting the public health. Hygienic medicine is perhaps more respected than any other branch. Those pursuing it have gained their position by proving their knowledge. In time of panic we are always looked up to for advice, freely given by us, but rarely followed if it affects the individual pocket or the pockets of a class. Against human greed we are comparatively powerless. When to this greed is added lack of every moral restraint up to absolute criminality, then we can hope for but little good effect from our efforts. Should we not for that very reason more strongly put them forth.

(To be continued.)

Original Articles.

A CASE OF NEPHRORRAPHY FOR MOVABLE KIDNEY; COMPLETE RELIEF OF SYMPTOMS. REMARKS UPON THE SUBJECT OF MOVABLE KIDNEY.¹

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A GREAT deal of attention has been paid to this subject during the last ten years. Before 1878 much had been written, but little had been done to relieve the symptoms caused by movable kidney beyond the adjustment of various pads and appliances to keep the organ in its proper position.

Dr. Grenville Dowell² in 1879 published a case in which he passed a seton through a movable tumor of kidney and out of abdominal wall. There was some hæmaturia. The seton remained in place three

months, and gave some relief. At the end of that time the tape broke and came away. The seton caused persistent and offensive discharge. Later Dowell introduced the seton again without giving as great relief as before. The patient finally went crazy and was taken to an asylum. Dr. Smyth removed the kidney, which was found to have a scar two and a half inches long upon it from the cutting out of the seton. The patient recovered.

In 1881, Hahn³ published his method of fixing a movable kidney by lumbar incision. Of this operation the *London Medical Record* said (1882, p. 57):

"Considering that the extirpation of the kidney is an exceedingly serious operation, and that, moreover, by the removal of one kidney an increased function is thrown on the other possibly defective kidney, the surgeon will welcome the new method recommended by Hahn. He has operated twice already, completely relieving the patient in one case, and greatly alleviating the other.

"Patient is put on the left side. Long cut from the ribs to the pelvis on the outer border of the *erector spinae*. Catgut sutures, etc. He says that in both cases the kidney became movable again after a time, and he recommended that the fatty capsule be opened and separated from the kidney, and stitched to the wound, and the kidney fixed low down."

Since the publication of this article, the operation of fixation, called by Hahn "nephrorraphy," has been done a considerable number of times by various surgeons. Some are opposed to this operation because it is not, as yet, sufficiently tested, and prefer the more dangerous operation of nephrectomy, but it seems more conservative to follow the opinion expressed by Wagner in his review of an article by Linder in the *Centralblatt für Chirurgie* for 1888, that "while it will take years to estimate the value of this operation, yet on the other hand a series of very good and lasting results have been gained by the harmless nephrorraphy so that we can never agree to extirpation of a healthy movable kidney till nephrorraphy has been tried."

In 1879, Keppler⁴ called attention to the fact that movable kidney without any other complication (such as twisting on its axis, etc.) can have great effect on ability to work, can disturb the functions of the organism, and give cause to constantly developing disturbances of nutrition, so that on this account simply an operation is justifiable. He reported eleven cases, all of the right kidney, five men and six women, in whom the symptoms were digestive disturbances, chronic constipation, neuralgia, etc., and upon two of whom Martin performed nephrectomy, with complete recovery. Previous to this time this condition of the kidney was treated entirely by appliances to keep it in position. The first of these two cases of nephrectomy was in a woman forty-nine years of age, who had had the symptoms eight years. The kidney was removed by incision in the *linea alba*. She made a good recovery without fever. The second case was a patient thirty years of age. Recovery as before, with only slight rise of temperature. Dr. Carl Lauerstein⁵ reported a successful case (since dead) of removal of a healthy movable kidney by Martin.

Four later cases reported by Martin.⁶ The first

¹ Read before the Suffolk District Medical Society, Surgical Section, April 4, 1888.

² *London Med. Record*, 1879, p. 448, from the *New Orleans Med. and Surg. Journal* for August, 1879. Also, *Am. Jour. Med. Sciences*, Vol. xc, p. 84.

³ *Centralblatt für Chirurgie*, 1881, No. 29.

⁴ *Archiv. für Klin. Chir.*, xxiii, 320 to 360.

⁵ *Archiv. f. Klin. Chir.*, xxvi, 2, p. 515, 1881.

⁶ *Berlin. Klin. Wochenschr.*, xix, 1882, p. 10.

died from inanition, the second from sepsis, the third in six weeks from chronic peritonitis, and the fourth made a complete recovery.

The number of operations in this line has diminished of late years, thanks to Landau, who showed in his monograph that a movable kidney was not in itself dangerous to life, and that there was no case cited in literature of death due to movable kidney. Especially have Billroth and Czerny upheld the position that the indication of nephrectomy on movable kidney should be limited as much as possible, and that it will be the work of the future to fix the offending movable kidney by surgical means, and not to destroy an organ whose function is normal.⁷

Gross has collected seventeen cases of nephrorraphy, with death in one case, relapse in four, and partial success in three. Performed by Köster, Esmach, Launcestein, Schede, Kümmell, and others. In most cases the trouble was lessened or disappeared entirely. Brodeur gives the following figures of kidney operations: 327 operations, 212 women, 94 men, 15 children, and 6 not given. Of these, 235 were nephrectomies, 125 by lumbar incision, with 78 recoveries 62 4-10 %, 110 by abdominal incision, 55 recoveries, 50 %, 43 nephrotomies, 34 by lumbar incision, 23 recoveries, 67 6-10 %, 9 by abdominal incision, 7 recoveries, 77 %.⁷ (Gross, 1885, 93 cases, 71 recoveries.)

10 nephrorraphies, all lumbar, with one death. (Gross 17 cases, one death.)⁷

The treatment recommended for movable kidney by different surgeons ranges from operations of considerable severity where the mortality is high, as above, to the application of contrivances for holding the kidney in place. In selecting the operation suitable for a given case, we must first carefully consider the symptoms present, the possible danger to life if they are left unrelieved, and how far we are justified in subjecting the patient to the risk of a dangerous operation to relieve symptoms of pain and discomfort.

It is certainly very seldom that a movable kidney endangers life; some writers deny that this condition is ever a dangerous one. A very large number of cases of movable kidney have been recorded by various writers up to the present time. A great many different causes are given for this condition of the kidney. Prominent among these causes is the absorption of the perinephritic fat. Yet it is as common for men to lose fat as for women, while they suffer much less from the affection. Many claim that women who have borne children are especially liable to dislocation of the kidney, but Linder,⁸ on the contrary, has observed a number of his cases in nullipare, where there could be no question of any laxity of the abdominal wall. He considers the condition a congenital one.

Landau⁹ in his monograph on wandering kidney, gives as the most important and prominent cause the disappearance of fat from the fat-capsule, looseness of peritoneum, where the fat which has been present in large quantity is suddenly used up, as it is in severe, acute affections. An important rôle in women is played by laxity of abdominal wall, especially its frequent consequence, a pendulous belly. The intestines exert a dragging influence. He shows that affections of the genital organs cause movable kidney, as by causing hydro-nephrosis; also, it may be caused by pressure of the pregnant uterus on the ureter, by

tumors, etc. Other causes are trauma, constant and severe coughing, labor, lifting of heavy burdens, straining at stool. All these exert a loosening influence upon the capsule. He can find no cause for movable kidney in corsets or lacing. Cause of the mobility of right kidney rather than the left is due to unequal means of fastening the two kidneys. In 178 cases 151 were right, 13 left and 14 double.¹⁰

Ellinger¹¹ shows that in many women who have been treated gynecologically in vain, the cause of their trouble lay in a movable kidney, and cites four cases of his own where this was so. He did not consider this a sufficient cause to demand extirpation, in spite of many favorable experiences of Martin with nephrectomy, and held that a bandage is indicated. Landau cites 314 cases, 273 women and 41 men. A great many symptoms are described resulting from movable kidney. Landau speaks of laceration and compression of nerve-roots, bloodvessels, and functional disturbances; he considers symptoms of the strangulation of the kidney important, and finds the cause of local disturbances due to interference of local circulation in the movable kidney, caused by torsion of the kidney vessels as shown by experiments on animals.

Stillier, in a synopsis of a paper by Dr. Muller,¹² quotes "Many cases of dilatation of the stomach and of dyspepsia, were observed in connection with movable right kidney, which was evidently the cause of them, as no other could be found. The cases were observed mostly in young girls who laced tightly and performed severe work."

Bartels gives the following explanation: "The kidney is pushed forward and inward, pressing on the pars descendens duodeni, which cannot move owing to lack of mesentery, consequently easy emptying of the stomach is hindered, the muscular layer is strained and finally becomes lax. The stomach becomes dilated, and severe chronic gastritis is set up." The writer, from observations of two cases, thinks that the sphincter pylori must be dilated, and also that part of the duodenum between the stomach and the place where the kidney presses.

Linder¹³ speaks at length of the subjective symptoms of movable kidney, some of which are almost pathognomonic signs, (contrary to Landau). Vomiting, loss of appetite, *factor ex ore*, etc., and intestinal troubles, especially after constipation. *Factor ex ore*, the most diagnostic sign: "several cases diagnosed from this alone," yet no cause for odor given, unfortunately. The climax is reached when the writer asserts that the greatest part of stomach disturbances and a very great part of the habitual constipation of women of young and middle age, is due to mobility of the right kidney.¹⁴

Prognosis. In an uncomplicated case of movable kidney it is probably true that there is no danger to life. Linder denies, as does Landau, that any "direct, acute danger to life is imminent." Leaving out of consideration those cases of movable kidney where there is a hydro-nephrosis, or other conditions where the opinion is unanimous that either nephrectomy or nephrotomy is imperative, we are brought to the question of selecting in a given case that method of treatment which promises the greatest relief to the patient with

¹⁰ Review of Landau's article by Dehlna, in Schmidt's *Jahrbuch*, 1882, Vol. 186, Page 161.

¹¹ *Wien. Med. Wochenschr.*, xxxi, 1316, 1317.

¹² *Wien. Med. Wochenschr.*, 1879, xxix, 73-76, 108-110.

¹³ *Loc. cit.*

¹⁴ *Review in Centralblatt f. Chir.*, 1888.

⁷ Schmidt's *Jahrbuch*, 1887, p. 283.

⁸ *Loc. cit.*

⁹ *Die Wanderniere der Frauen*, Berlin, 1881.

the least risk to life. Many authorities assert that in the most, if not all cases, nothing is necessary beyond a suitable pad, to make the life of the patient one of tolerable comfort. Linder recommends first a bandage. Landau maintains that in fresh cases, horizontal position long maintained, will effect a cure. He says it is impossible to restore a kidney to its original position and sew it there. He finds the best thing to do is to immobilize the kidney, and that this is best accomplished by the modern long corset, which covers the whole abdomen and supports it. Ellinger, after many unfavorable attempts, had a bandage made which fitted his case.

Niehans¹⁵ favors the bandage, and proposes one used in a case of his own, with immediate and beneficial effect. Various other writers report cases where the application of a bandage has been followed by complete relief from symptoms.

Hahn¹⁶ in his original article, reviews cases of nephrectomy for various causes and speaks of its dangers. It is justifiable only when the life and happiness of the patient are threatened and the disease can be removed in no other way. He then proposed a new operation "Die Operative Fixation der Beweglichen Niere." He had two patients, one probably with stone in well kidney, and in the other both kidneys were movable. Extirpation was not to be thought of. Lumbar incision along the sacro-lumbar muscles from the twelfth rib to the crest of ilium, etc. The kidney still in its fatty capsule was then drawn forcibly back into the wound and sewed to it by six or eight catgut sutures. Then the whole wound was stuffed with carbolic gauze. The first bandage was changed the fifteenth day, the wounds were closed in about four weeks, and the kidneys lay immovable and firm in the sewed condition, as immediately after the operation. In the first case, the troubles disappeared after the operation. In the second case, the troubles were diminished, but not entirely removed. Later, the kidneys became somewhat movable owing to standing up and moving about. The adhesion did not seem to be great enough to bear permanently the weight of the kidney when standing. It seems advisable in order to gain greater security, to open the fat capsule on the convex edge of the kidney, remove it from the posterior surface, and sew this loosened part into the wound. In this way a firmer adhesion would be secured. An indication to extirpation of a movable kidney, Hahn sees only when it is diseased, which of itself demands removal. Hahn performs this operation, which he considers perfectly harmless, only when great disturbance caused by the movable kidney cannot be gotten rid of by the ordinary means.¹⁷ He considers that the extirpation of a healthy kidney is justifiable in the present state of the question, only when fixation is without success.

In the discussion of Hahn's paper before the German Congress, Landau maintained that the sewing of the dislocated kidney is as ineffective as it is dangerous, as in this way the gland is not fixed in its normal condition. The vessels and ureter suffer from the faulty arrangement, and if pregnancy should take place, the latter might be easily compressed, and hydro-nephrosis might result in consequence. In double, especially congenital movable kidneys, no attempt at

operation should be made. If the dislocation were due to trauma one should give, beside the application of a bandage, a fat-forming diet.

Küster and Esmarch have each fixed a movable kidney once after Hahn's method. In both cases, the disturbances of the patient were diminished, but did not disappear entirely. A third report gave the same result.

SYNOPSIS OF OTHER CASES.

Bassini.¹⁸ Woman twenty-seven years of age, movable kidney right side, cause unknown. Hahn's operation, four stitches, wound healed ninth day, discharged on twentieth day; cessation of disturbance.

Robert F. Weir.¹⁹ Hahn's operation, patient crushed between two wagons six years before; since then had suffered disturbances of extraordinary severity; two months after the operation the patient had evidently recovered, and the pains had decidedly decreased.

Ceccherelli.²⁰ Woman twenty-eight, left movable kidney; severe disturbances for years; to make the kidney more secure, passed the stitches round the twelfth rib. In spite of perfect asepsis the patient died in forty-five hours after the operation. This is the only fatal case.

De Paoli.²¹ Woman thirty years of age; right sided lumbar pains with increasing digestive disturbances; bed position unendurable in any way. Standing was endurable. Walking soon followed by pain and vomiting. Abdomen pendulous; dilatation of stomach; movable kidney on right side, easily replaced but causes pain. Nephrorrhaphy performed; twelfth rib cut through to gain room; kidney fixed with numerous stitches; discharged at the end of seven weeks cured completely of disturbances.

Agnew.²² Man, thirty-two years old. Seven years before while exerting himself greatly, sudden pain in right lumbar region; constant pain thereafter; right movable kidney. After many unsuccessful attempts to retain kidney in normal position by mechanical means operation decided on; lumbar cut. Kidney drawn into abdominal walls. Catgut sutures through capsule; drainage; antiseptic bandage; healing in six weeks; in one month return of movable kidney. Some months later kidney extirpated from lumbar region. Recovery in four weeks.

In the discussion of this case, Gross remarked that in 17 cases of sewing of the dislocated kidney in its original position one was fatal, three were only partially successful and four returned. In spite of this he would always recommend the less dangerous operation before deciding on extirpation. For the latter would recommend the lumbar cut with a mortality of 33% to the abdominal with mortality of 41%.

Svensson.²³ Constant pain; incapable of the lightest work; insisted on operation. Usual lumbar cut; fourteen silk stitches through substance of kidney. Stitches remained in and wound closed without disturbance. Complete disappearance of the trouble without return. Kidney has remained firm, fixed in its position.

In spite of less favorable reports elsewhere about the operation, the writer justly considers his case one

¹⁵ Centralblatt f. Chirurgie, 1888, 12.

¹⁶ Centralblatt Chir., No. 29, 1881.

¹⁷ Centralblatt f. Chirurgie, 9, 1882; Bericht über den XI. Deutschen, Chir. Congress.

¹⁸ Centralblatt für Chir., 1883, 4, p. 63.

¹⁹ N. Y. Medical Record, 1889, Nov. 24th.

²⁰ Centralblatt für Chir., 44, p. 745, 1884.

²¹ Centralblatt Chir., 51, p. 810, 1885.

²² Phila. Med. Times, June 13, 1885.

²³ Centralblatt f. Chir., 1885, No. 51, p. 911.

²⁴ Centralblatt für Chir., 1886, No. 47, 824.

of interest, and sees the cause of failure in the employment of catgut and avoidance of the kidney parenchyma in putting in the stitches.

Lloyd.²⁴ Fixed a movable kidney permanently by the lumbar cut, stripping the capsule back for one-fourth inch, and fastening the freshened part in the wound by very deep sutures.

Newman (Glasgow).²⁵ Capsule cut into and sewed into wound. Two stitches passing into the substance of the wound.

Warfvinge.²⁶ Right side; recovery; cut parallel to the vertebral column; kidney fastened to the muscles and fascia surrounding the operation-wound by a silk thread passing through the kidney.

Smith, J. G.²⁷ Woman, thirty-nine; tumor diagnosed as movable kidney or ovarian tumor. Abdominal incision, found movable kidney. Tried to stitch it subcutaneously, but surface of kidney tore; so scratched it several times with needle and left it *in situ*. The tumor has remained in place, but the patient does not seem much benefited.

Dunning, L. H.²⁸ Woman, forty-four years; lumbar incision; four stitches along each border of the incision, passing through renal capsule and perirenal adipose tissue. Result: kidney movable about one inch laterally; symptoms much relieved; would advise silk for at least half of the stitches.

Other cases are reported by various surgeons (see Bibliography). Slight modifications of Hahn's method have been recommended.

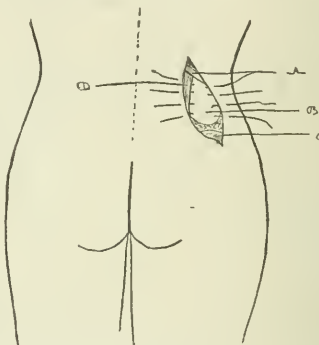
Lucas²⁹ recommends for movable kidney a simple incision to the kidney by a lumbar cut, a perfectly harmless operation. The following cicatricial process will pretty surely lead to fixity of the kidney. If not sufficient, then perform Hahn's nephrorrhaphy of the kidney.

The following case first came to me in the spring of 1887. The patient was very anxious to have an operation, and urged it so strongly that it was with difficulty that she was persuaded to try. First, some palliative measures for her relief. I made a careful study of the case, and had various pads made and applied, all of which she faithfully tried without the slightest benefit. Finally, I decided to perform Hahn's operation, after a consultation, at which the views already presented were urged for and against by the physicians and surgeons present, some favoring further employment of mechanics, probably underrating the woman's suffering, and others advocating an operation for fixation. No one thought nephrectomy justifiable as a first measure.

S. E. C., aged thirty-six, married. Entered the Massachusetts General Hospital, September 19, 1887. Always strong and healthy woman. No history of previous illness. About eighteen months ago, after working, began to have pain in right lumbar region, which she attributed to a strain. Very soon after she became conscious of something moving about in right side of abdomen, every movement of which was accompanied by severe pain. All sorts of apparatus and supports were tried without relief. The pain has been almost constant. Every time she turns over in bed or changes her position at all, she can feel this

thing move, and its movement causes intense pain. She says that she is entirely incapacitated for work, and that her suffering is so great that she will gladly undergo anything that offers prospect of relief. Besides the pain, she complains of some numbness and loss of power in right arm and leg. Otherwise, her health is excellent. There is no history of loss of flesh. Is the mother of several children.

Strong and robust-looking woman. No appearance of impaired health. On examination with patient on left side, there can be felt on deep pressure in right lumbar region a movable body, the size and shape of the kidney. Tumor not painful to touch, but freely movable and painful on movement. The tumor can be displaced very far to the left of the umbilicus and down into the pelvis. Urine normal.³¹



A, Last rib. B, Kidney. C, Crest of ilium. D, Quadratus lumborum.

Operation, September 22, 1887, under ether. Patient on left side. An incision about six inches long along the margin of the *quadratus lumborum* muscle. The edge of the muscle having been found, was drawn to one side and the peri-nephritic fat exposed. This was cut through and separated, exposing posterior surface of kidney. The organ moved up and down freely with inspiration and expiration, undergoing a displacement of about two inches, making it very difficult to apply the sutures. Sutures of silk were passed through the capsule of the kidney by means of round needle, without entering the kidney substance. Four of these stitches were taken and the edges of the wound drawn together, with surface of kidney approximated to their inner surface. Wound then closed tightly with superficial stitches. Iodoform gauze and salicylic cotton dressings (see cut). Rapid convalescence, with no rise of temperature. The stitches which were passed through the capsule were removed October 7th. During the convalescence there was some pain in the region of the kidney and in the wound. There was from the first relief of her symptoms, which has continued up to the present time (May 20, 1888). She was kept in bed till Messrs. Leach & Greene had made a special pad. With this she was allowed to get up, October 30th. She returned home, and has been perfectly well ever since.

June 1, 1887, she wrote to me: "I came home from St. Margaret's altogether discouraged. . . . I am miserable and good for nothing in the world,

²⁴ Practitioner, September, 1885. Also, Centralblatt f. Chir., No. 3, 1888.

²⁵ Brit. Med. Journal, April 28, 1883, p. 831.

²⁶ Schmidt's Jahrbuch, 295, 1885, p. 198.

²⁷ London Lancet, 1884, ii, 10.

²⁸ J. Am. M. Ass., Chicago, 1886, iv, 190-201.

²⁹ Brit. Med. Journal, September 29, 1883, p. 611.

³¹ Massachusetts Hospital Records.

and have so much to do that I have not strength to accomplish that I am anxious to risk any peril for the hope of getting well."

February 29, 1888, she wrote: "I am splendidly well."

In this case, mechanical treatment was tried patiently and thoroughly till the fact was clearly demonstrated that there was nothing to be gained by it. The operation of fixation has been far more successful than I dared hope. I believe that the kidney has been permanently fastened in place by cicatricial-tissue adhesions, and that by this time it has been firmly and permanently fixed in its new position.

The kidney was not fastened into its normal position, for it was impossible to fix it high enough, but it is about two inches lower down. I believe, with Landau, that it is extremely difficult, if not impossible, to bring the kidney, especially the right, into its normal position, but I do not see that it is any disadvantage to have it brought conveniently low down.

It seems to me that the opinions expressed by the authorities already quoted present most fairly the present aspect of the best treatment in these cases; namely, that in many cases, if not in most, no interference is demanded or justified, beyond the application of a pad. In some cases, even this is not necessary, as there are no symptoms. If the symptoms are unendurable, then nephrorrhaphy can be done with little danger to life, and with, as it seems to me, a very good chance of permanent recovery, or, at least, enough lasting benefit to justify the operation. Finally, if fixation has not followed, we can, as a last remedy for unbearable pain and distress, resort to removal of the offending viscus.

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OBSERVATIONS ON FORTY-FIVE CASES OF FLAT-FOOT WITH PARTICULAR REFERENCE TO ETIOLOGY AND TREATMENT.¹

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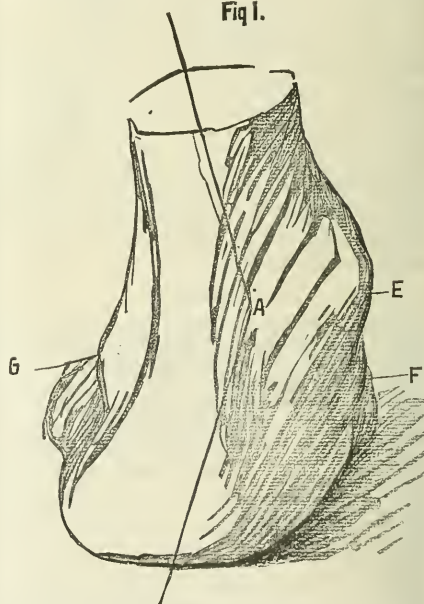
I AM inclined to think that the frequency of troubles caused by overstraining the arch of the foot is not appreciated, and that the condition is not generally recognized, because nearly every patient whom I have treated for this affection, many of whom presented the typical appearances of flat-foot, sometimes to an extreme degree, were taking, or had taken for long periods, internal remedies on the supposition that the symptoms were caused by rheumatism. Some observations on the etiology of the affection, with a more detailed account of its treatment than can be found in surgical or orthopedic works, may prove of interest to those who may be called upon to treat it.

The gross appearances and symptoms in acquired flat-foot have been sufficiently well described by various writers. In a typical case they are as follows: The arch of the foot is lowered; or completely broken down, so that the entire sole rests upon the floor; on the inside of the foot the slight normal outward curve from the heel to the head of the first metatarsal is replaced by a bulging inwards, most prominent below and in front of the internal malleolus. The foot seems broader than usual, and the internal malleolus is abnormally prominent; when the patient stands the entire foot seems displaced outwards on the leg, this being especially marked when looking at it from behind; the tissues on the inside of the arch and ankle seem thickened and congested; prominent veins and increased moisture of the foot are often noticed; in walking the feet are turned out more than usual, and a short awkward step is sometimes observed (see plates 1 and 2); the subjective symptoms are various, the most constant being pain especially after long standing or walking, most often about the inside of the ankle, sometimes shooting up the inside of the leg, or in the outside of the ankle, the ball of the foot, the heel, or middle of the sole; as patients express it, the foot

seems heavy, and to have lost its spring; a symptom which I have not seen described is often complained of, a stiffness in the foot; for example, after sitting for any length of time, or on rising in the morning, the feet seem stiff and unmanageable when attempting to walk, the sensation lasting several minutes.

On manipulation — pressure over the astragalo-scapoid articulation is painful — forcibly turning the fore-foot out or in, causes pain here, sometimes also just in front of the external and internal malleoli; forced flexion or extension of the medio-tarsal joint is often attended with pain. These symptoms may, and most often do, come on slowly, and are of long duration, aggravated by overwork, relieved by rest; but they may appear suddenly, as in cases where there has been a gradual breaking down of the arch, a slight unnoticed injury may result in great pain, accompanied by redness and swelling; really, a sprain occurring in a weakened foot.

Fig 1.



Drawn from a cast of the flat-foot, showing the outward displacement of the foot on the leg.
A, the weight-bearing centre of the astragalus, which should normally be in the line of traction of the tendo-Achillis; E, internal malleolus; F, head of the astragalus; G, external malleolus.

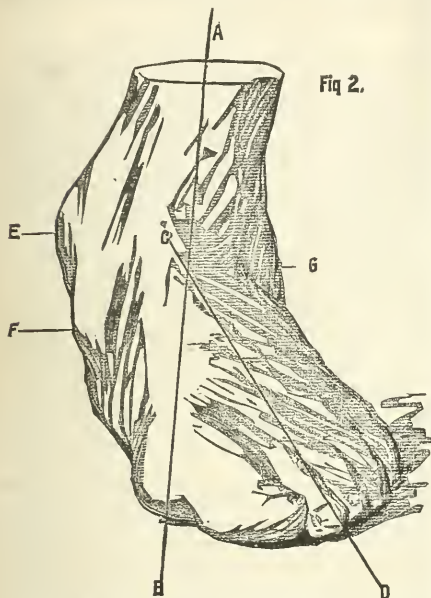
It must be remembered that in old flat feet the displaced bones constantly rubbing on each other, pressing on their over-stretched ligaments, may induce a low grade of inflammation, as shown at autopsies by eroded cartilages, ligaments and porositities of the bones. Such cases might easily be mistaken for chronic rheumatism, if the deformity were slight, especially if, as sometimes happens, but one foot were affected in a person subject to rheumatic inflammation in other joints. The symptoms, too, do not at all correspond with the degree of deformity. Many persons with complete flat-foot have no trouble, while others who

¹ Read at the meeting of the Surgical Section of the Suffolk District Medical Society, April 4, 1888.

are practically disabled by it show but a slight flattening of the arch.

Many flat feet can, by manipulation, be nearly or quite replaced in their normal position, others only partially.

In order to understand the etiology of the affection, and that the reasons for the treatment which will be recommended may be made clear, it will be necessary to describe some of the anatomical peculiarities of the foot.



Anterior view, showing the eversion of the fore-foot. The line A, B, C, D, drawn through the axis of the leg, should normally fall through A, C, D, E, internal malleolus; F, head of the astragalus; G, external malleolus.

The astragalus, when the foot rests upon the ground, is usually held firmly between the tibia and fibula, permitting almost no movement except as a hinge-joint, the lateral movements taking place in the joint between it and the os calcis, to which it is attached principally by the interosseous ligament. When the foot bears weight the tendency is to abduction, that is, a slight flattening out of the arch, a turning out of the toes, and a tilting of the os calcis over towards the inner side, its anterior extremity turning slightly inwards and downwards, while the point of the heel turns slightly outwards.

There is a slight rotation of the astragalus forwards, downwards, and inwards, so that its anterior extremity, or head, articulating with the scaphoid, becomes more prominent: also a broadening and slight lengthening of the foot. These movements, which normally take place to an appreciable extent, are exaggerated in a foot whose muscles are weakened and ligaments stretched from overwork; thus the anterior extremity of the os calcis falls inwards and downwards, the bone tilts over so that its

external tubercle is raised to a considerable angle with the floor. This change would affect the level of the astragalus in its relation to the leg bones, were it not for the fact that its increased rotation allows its outer margin to sink down into the interosseous fossa, pressing before it the interosseous ligament, a movement which depresses its external and raises its internal border. The head of the astragalus, in its exaggerated rotation, presses inwards on the internal lateral, and inwards and downwards on the calcaneo-scapoid ligaments, while its axis which should be in a line with the second toe, may point inside the great toe. The distance between the internal malleolus and the sustentaculum tali is increased, and the external malleolus comes in close proximity to the os calcis, pressing on the external ligaments. At the same time the flattening and abduction of the foot strain, to a certain extent, all its minor ligaments. After a time the displacement may become permanent. Then may follow changes in muscles, ligaments, cartilages and bones.²

In order to ascertain the amount of rotation of the astragalus, and the expansion of the heads of the metatarsals under weight, a series of comparative measurements, of normal and flat feet, in children and adult males and females, were made, with the following results:

A, Length of foot.
B, Distance between the external malleolus and the head of the astragalus, the foot resting easily on the floor at a right angle with the leg.
C, The same measurement when the foot sustains the entire weight of the body.
D, Distance between the head of the first and fifth metatarsals.
E, Same measurement under weight.
Measurement in Millimetres.

CHILDREN.												
Normal.						Flat.						
Age	A	B	C	D	E	Age	A	B	C	D	E	
1 8	184	54	56	71	75	1 7	7	184	55	59	62	70
2 10	190	54	59	72	76	2 12	208	57	63	67	76	
3 11	190	63	69	79	88	3 8	8	210	59	61	70	78
4 11	194	62	64	74	78	4 9	9	215	61	64	76	81
5 12	197	65	69	79	86	5 12	222	61	64	78	86	
6 9	200	61	61	72	76	6 13	222	72	75	75	82	
7 11	203	57	63	70	73							
8 13	210	61	66	75	82							
9 13	210	62	67	75	82							
10 13	228	62	69	83	86							
Avgc. 200.6 59.7 64.3 75 80.2						Avgc. 210.3 60.8 64.3 71.3 78.6						
WOMEN.												
1 36	203	57	61	83	89	1 60	229	70	72	89	99	
2 18	209	62	67	89	97	2 45	229	70	76	77	85	
3 38	209	61	64	78	89	3 25	235	67	71	91	97	
4 38	209	61	62	89	96	4 59	241	69	71	100	113	
5 38	209	61	62	81	91	5 24	241	64	69	89	94	
6 36	216	76	80	92	105	6 29	254	69	71	99	115	
7 20	222	64	69	85	94							
8 50	229	67	73	90	107							
9 30	248	69	70	92	95							
10 34	248	71	72	92	95							
Avgc. 220.2 64.4 68.3 88.3 95.7						Avgc. 238.1 68.1 71.5 90.8 100.5						
MEN.												
1 30	235	69	70	92	94	1 28	254	75	81	101	104	
2 30	241	69	75	88	94	2 25	261	82	85	105	107	
3 35	241	67	70	94	97	3 18	264	81	91	93	94	
4 32	241	61	70	91	94	4 59	266	83	87	103	107	
5 30	248	69	70	92	95	5 45	267	78	83	99	102	
6 28	254	69	71	88	94	6 20	268	83	84	94	102	
7 33	257	75	76	92	100	7 18	268	72	75	102	110	
8 21	260	78	83	97	105	8 17	268	78	83	95	107	
9 33	262	71	76	97	100	9 25	279	80	82	95	101	
10 30	262	71	75	95	100	10 40	292	73	76	98	109	
Avgc. 250.4 69.9 73.6 92.6 97.3						Avgc. 268.7 78.5 83 98.5 104.3						

² Vide Autopsies.

Sprigmon, Journal of Anat. and Phys., Oct., 1884.

Stokes, Annals of Surgery, Oct., 1885.

Humphrey, Lancet, March 20, 1886.

Huetter, Grundriss der Chirurgie, 2 Hefte, 1882.

Von Meyer, Uebersicht und Mechanismus der Entstehung des erworbenen Plattfußes, 1883.

RECAPITULATION.

<i>Children.</i>	
Length of foot in normal cases	200.6
" " " flat cases	210.3
Distance from external malleolus to head of astragalus, normal	69.7
" " " flat cases	60.8
Rotation of astragalus in normal cases	4.6
" " " flat cases	3.5
Expansion of head of metatarsals in normal cases	5.2
" " " flat cases	7.3
<i>Women.</i>	
Length of foot in normal cases	220.2
" " " flat cases	238.1
Distance from external malleolus to head of astragalus, normal	64.4
" " " flat cases	68.1
Rotation of astragalus in normal cases	3.9
" " " flat cases	3.6
Expansion of heads of metatarsals in normal cases	7.4
" " " flat cases	9.7
<i>Men.</i>	
Length of foot in normal cases	250.4
" " " flat cases	268.7
Distance from external malleolus to head of astragalus, normal	69.9
" " " flat cases	78.6
Rotation of astragalus in normal cases	3.7
" " " flat cases	4.5
Expansion of metatarsals in normal cases	4.7
" " " flat cases	5.8

These measurements would seem to show that the flat-foot is longer than the normal; that the distance between the external malleolus and the head of the astragalus is greater, showing a certain amount of permanent rotation and displacement of this bone; that the fore-foot in flat cases is broader, and the expansion of the metatarsals is greater than in normal cases.

The area of rotation of the astragalus in women and children was restricted in the flat cases, because of the certain amount of permanent rotation which already existed, while in men it was increased. This variation may be explained by the fact that there are two classes of flat-foot, the most exaggerated types being met with in men, as might be expected, from their more laborious occupations.

(1) In well-marked cases, characterized by extreme laxity of ligaments, with very great deformity, as shown in Figures 1 and 2. Yet the symptoms are usually slight, and often no discomfort, other than the very apparent deformity, is experienced. The foot in young subjects can by manipulation be almost entirely replaced to its normal shape. In this class, the area of rotation of the astragalus is increased. As an example, Case No. 3 of the flat feet in men may be cited. Here measurement b. is 81 mm., compared with a normal of 69.9, the rotation of the astragalus 10 mm., compared with a normal of 3.7. The fore-foot in this case was so everted as to be almost useless in walking, the waist of the foot under weight measuring 91 mm., and the heads of the metatarsals 94 mm., compared with the normal of 73.6 and 97.3. Lesser grades of this type are usually classed as weak ankles.

(2) The cloddy type, characterized by flatness of the sole, with much less deformity. The foot seems thick and unyielding. The shape can be but slightly changed by manipulation. The pain is often severe, with tenderness of the joint on pressure and congestion of the foot. In this class, the rotation of the astragalus is restricted. It may be that the greater severity of symptoms in this class is due to more unyielding ligaments, which, allowing a certain amount of displacement, then hold the bones closely against each other in their abnormal positions, so that the effect of pressure in inflammation and other changes may be more apparent.

The early recognition of the affection is of consid-

erable importance to the future comfort of the patient, and it may be stated that pain in the feet, aggravated by standing or walking, with pain on pressure over the astragalo-scapoid joint, or pain on motion at the medio-tarsal joint, are symptoms much more likely to be caused by an over-strained arch, even though no deformity exists, than by ill-fitting boots or subacute rheumatism, and that "sprained ankles" are often in reality sprained feet.

As to the etiology of acquired flat-foot, various theories have been advanced.

THE MUSCULAR THEORY.

- (1) Paralysis or atrophy of the tibialis anticus.³
- (2) Paralysis of the peroneus longus.⁴

It is interesting to note that Sayre, finding in his cases the changes in the tibialis anticus, did not discover the affection of the peroneus longus, while Duchenne not only found no weakening of the tibialis anticus but says: "I have demonstrated that every flat-foot of which the etiology or genesis is in muscular action, is produced by preponderance of the tonic force of the tibialis anticus, which, as will later be demonstrated, destroys the plantar arch" (p. 457).

Mr. Golding-Bird, in fifty cases of flat foot, found no atrophy or paralysis of the tibialis anticus.⁵

In the forty-five cases examined by me, no paralysis was found, or muscular changes that might not better be classed as results than causes; for example, in some cases where there is a considerable displacement of the astragalus to the inside, as in Figure 1, it is difficult or impossible for the patient to flex the foot in an adducted position, as is the ordinary action of the tibialis anticus; this might be thought due to atrophy of that muscle, but it may be more easily explained by this displacement of the astragalus, which necessitates a wide movement of the fore-foot about its head: if the displacement be so great as to render this impossible, the foot must be flexed and abducted as though it were moved by the long extensor of the toes. I have noticed, too, in some of these cases, when attempting manually to flex and abduct the foot, that there seemed to be an abnormal resistance in the calf muscle, which had been acting so long with its tendon displaced outwardly in its relation to the foot.

LAX LIGAMENTS.

By some, flat-foot has been ascribed to lax ligaments. As to this, it may be said that some persons have strong muscles, and others weak ones. So, too, there is a great difference in ligaments. One has only to examine a certain number of normal joints to convince himself of this. It seems reasonable that a person whose muscles are weak and whose joints are loose, will, under favoring conditions, develop flat-foot, while another with strong muscles and closer joints would not. It does not follow, however, that a primary relaxation of ligaments is the ordinary cause of this affection. It is impossible to say how much hereditary influences have to do with the causation of flat-foot. No. 1, of "flat feet in men," a case of extreme deformity, informed me that he was one of eight brothers, all of whom had feet as flat as his own. No. 3, already cited, the most extreme case of all, said he had inherited the affection from his father, yet he had three brothers with perfect feet. The oc-

³ Sayre. Orthopedic Surgery, p. 62.

⁴ Duchenne. Physiologie des Mouvements.

⁵ Guy's Hosp. Reports, Vol. xii, 1883.

cupation, in which he had been engaged for five years, bell-boy in a hotel, a most trying one for the feet, may have been in his case a more important factor than inheritance.

I am not now speaking of the negro type of foot, long, flat, with projecting heels, but of cases that would be considered typical illustrations of the deformity. In one family I found three generations of flat feet. The child, however, showed marked evidence of rachitis, an affection in which it is usually present.

HIGH HEELS.

Mayo-Collier⁶ contends that the wearing of high heels is the cause of flat feet, quoting Little: "a slight degree of atonic valgus is common in girls, especially in those of the upper and middle classes." "Why not in the less fortunate and badly-nourished females of the lower classes? Because the high heels are less prevalent with them." My experience leads me to consider "atonic" flat-foot as especially the affection of servant-girls, often badly nourished, and obliged to be almost constantly on their feet. This class do not wear especially high heels; they do wear ill-fitting boots, with narrow soles, which compress and deform the toes, and rest their feet with cloth boots and slippers, which give no support to the arch; and in this class the tired feeling and dull ache in the feet, so characteristic of an over-strained arch, is very common.

Again, raising the heel in one of these cases does not increase the deformity. On the contrary, if the bare foot be placed squarely on the floor, and the body be inclined forward so that more weight is brought on the "waist" of the foot, it will be increased.

CONGENITAL OSSEUS MALFORMATION.

It has been suggested, because flat-foot occurs in robust persons, and because changes in the bone have been found, too great to be accounted for by mechanical causes, that an original osseous malformation would best explain the origin of the affection.⁷ The affection does, it is true, occur in robust persons, but if one of these patients be questioned, it will be found that he dates his symptoms from some strain or from some peculiarity in his occupation. As an illustration, a healthy, well-developed young man was sent to me last week, presenting a very considerable flattening of the arch of one foot, accompanied by pain, swelling, and muscular spasm. I found that his occupation as a bookbinder compelled him to stand all day on the affected foot, while he worked a treadle with the other. Again, I should not admit that the deformities of the bones, as described in the published autopsies, were too great for explanation on mechanical grounds. They are no greater than those found in other bones under similar conditions.

Lastly, the number of autopsies on flat-foot is too small to support any peculiar and improbable theory as a general explanation of the affection. It may be that these different theories have resulted from a failure to recognize the varying types of the affection. One observer sees cases or makes a dissection of a foot showing great relaxation of ligaments, and concludes that all cases result from lax ligaments. Another meeting acute cases where, as in acute affection of other joints, muscular spasm and contraction are prominent features, considers muscular spasm, con-

traction, atrophy or paralysis as exciting causes. While another accounts high heels responsible for the symptoms which he notices.

THE OVERWORK THEORY.

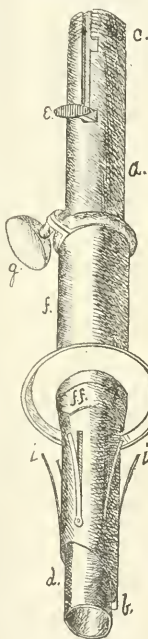
It seems to me that the most reasonable explanation of its cause is that of a disproportion between the weight the foot is called upon to bear and the ability of its muscles and ligaments to sustain it, a simple breaking down from overwork.

(To be continued.)

New Instruments.

AN INSTRUMENT FOR TAPPING OVARIAN CYSTS.

DEvised BY H. R. HEYDECKER, HARVARD MEDICAL SCHOOL.



The accompanying cut represents an instrument for tapping ovarian cysts, which was shown at the last meeting of the Suffolk District Medical Society.¹

It is a modification of Sir Spencer Wells's abdominal trocar, and was especially designed for the use of Dr. John Homans in his operations for the removal of ovarian tumors by laparotomy.

The instrument consists of a canula (a), at one end of which is a cutting edge (b); at the other end (c) a curved tube is attached, which communicates with a long rubber delivery pipe.

Inside the canula is a close-fitting tube (d), which is moved by the lock knob (e), and which acts as a guard to the cutting point (b). Outside the canula is another tube (f), which slides upon the canula and is clamped in position by the thumb-screw (g).

To this tube is attached a shoulder (h), which, sliding down upon the ends of the springs (i), holds the cyst-wall firmly.

The springs (i), when depressed, fit into grooves on the side of the canula, and are held in position by the end of the sliding tube (ff). When thus depressed, these springs are flush with the surface of the canula. The method of using the trocar is as follows:

The cyst being exposed by an incision through the abdominal walls and the peritoneum, the cutting end of the canula is plunged into the cyst-wall until the end of the sliding tube (ff) reaches the cyst and is stopped. The canula is then pushed on until the springs are set free inside the cyst.

The guard (d) is now slid forward, to prevent the cutting point injuring the abdominal viscera.

¹ The cut represents the instrument two-thirds the actual size.

⁶ Flat-Foot, by M. P. Mayo-Collier, *Lancet*, September 4, 1886.

⁷ Stokes, *Annals of Surgery*, Oct., 1885.

The shoulder (*h*) is then pressed down against the ends of the springs (*i*), thereby engaging the cyst-wall between the ends of the springs and the shoulder, and is clamped in that position by the thumb-screw (*g*). By this means all fluid is prevented from escaping between the cyst-wall and the sides of the canula.

The fluid in the meantime is running out of the cyst through the delivery tube, and the cyst-walls being firmly held by the springs, the emptying sac is gradually drawn out from the abdominal cavity through a small opening.

The advantages claimed for this instrument are:

(1) That through the almost automatic action of the springs, the cyst-wall is firmly held as soon as the trocar is introduced, and no time is lost in drawing the cyst-walls up on the sides of the tube with a pair of forceps (which is necessary in order to fasten them when using the old form of trocar).

By this means the danger of the cyst slipping back into the abdominal cavity and discharging its contents into the peritoneum is also avoided.

(2) That through the intervention of the shoulder (*h*), fluid is prevented from escaping between the cyst-wall and the canula, and flowing back into the opening in the abdomen.

(3) That it affords a better and more easily obtainable hold upon the cyst than can be secured by cyst-forceps.

The instrument was made by Codman and Shurtleff, and is now being used by Dr. John Homans.

Reports of Societies.

AMERICAN MEDICAL ASSOCIATION.¹
CINCINNATI, OHIO.

SURGICAL SECTION.

FOURTH DAY.—FRIDAY, MAY 11TH.

GRADUAL DILATATION OF OESOPHAGEAL STRICTURES.
by THOMAS P. DAVIS, Pittsburgh.

Oesophageal strictures are so serious in their nature that only within a few years has any method for procuring permanent relief been attempted; and now he desires to call attention to a more conservative treatment than that in use. Cicatricial stricture may be caused by direct injuries or by foreign bodies passing through the oesophagus; syphilis has also been assigned as a cause, but the most common etiological factor of destruction of the tissues is the swallowing of caustic substances. Many such cases have been reported since these articles have been introduced more generally into domestic use. He reported three cases of his own:

CASE I. A boy had swallowed some corrosive substance unknown to his nurse. When seen, four hours afterwards, he had been "vomiting and slaverling thick saliva, tinged with blood, and his mouth was fiery-red." Oil and demulcents were freely given and retained, and his mouth rapidly healed. After five weeks he was emaciated, was having attacks of vomiting, and rejecting the smallest quantities of food. Oesophageal stricture was diagnosed on this visit, and a No. 2 flexible catheter was introduced into the

stomach with much difficulty, owing to a dilatation above the stricture, making the opening difficult to find.

Immediately after the operation the child could swallow a little milk. These tubes were inserted frequently, the size being gradually increased, to avoid giving pain. After six weeks the improvement was so great that the parents were allowed to use the bougies, and in five months a No. 2 rectal bougie was used. This has been used at intervals since, till all marked symptoms of stricture have disappeared.

CASE II was seen a few moments after drinking from a can of concentrated lye. Her tongue, cheeks, and fauces were white, and there was bleeding from the mouth. Vinegar was given, followed by table oil, which, being rejected, milk was given. After a week, the largest-sized English catheter was introduced, but it was necessary to decrease the size, till, in the course of a month, only the smallest could be used. The treatment was afterward continued more successfully until a grape-seed was lodged in the stricture, which was very difficult to remove. Again, a too rapid dilatation caused the formation of an abscess, but, six months after the accident, a rectal bougie could be introduced. Now, after seven years, deglutition is not impaired, though the size of the oesophagus is not normal.

CASE III differed from the others in showing evidences of ulcers in the stomach. These healed in time, the child recovered in six months, and, after three years, is in good health.

He prefers the use of the common English catheters, straightened out, as they are more easily obtained and are more suitable for a gradual dilatation than anything else on the market.

The writer remarked (1) that he could concur in the opinion that stricture is produced by a tonic spasm, continuing for several days, the clogging of the passage by mucus or food explaining, to his mind, the difficulty in inserting the bougie.

(2) Dilatation of the oesophagus above the stricture is prevented by promptly introducing the bougie.

(3) The second case shows the contrast between the rapid and gradual modes of treatment.

DR. PANCOAST, of Philadelphia, observed that no method but gradual dilatation should ever be used. This principle holds in stricture of the urethra, as well as in that of other mucous ducts; and in stricture of the urethra dilatation should be exhausted before the performance of urethrotomy. In a case of his own, the patient swallowed a wineglassful of sulphuric acid, and suffered from an extensive and serious stricture. He feels sure that spasmodic stricture does exist, as he has observed it himself, in which case the food was retained in the oesophagus until the spasm ceased. The secret of the success of the rat-tail bougie exists in the fact that the larger portion, being held above the point, is more readily directed into the proper channel.

SACRO-ILIAC TUBERCULOSIS,

by WELLER VAN HOOK, Chicago.

Sacro-iliac disease, which is essentially a strumous or tuberculous affection, and whose pathology is identical with that of tuberculosis of other joint surfaces, is treated according to the same general principles that govern the treatment of the same disease elsewhere.

¹ Concluded from page 580.

Absolute rest should be enforced, and to obtain this the patient should lie on the back, and not on the side, for the latter posture causes a considerable strain on the joint surfaces of the sacro-iliac articulation, and thus to a certain extent defeats the purpose of the treatment. This, together with suitable supporting and nourishing measures, may effect a cure in recent cases; but when the inflammation has proceeded to suppuration and abscesses form, operative interference will be necessary.

An abscess may point and break externally, or if it is situated more deeply, and the anterior surface of the joint is involved, it may open into the pelvic cavity, and thence pass into the thigh or to the perineum.

If abscess is on the outside, an incision directly over it may give exit to the pus; it may be necessary to remove the diseased portion of bone with a gouge. But when the trouble is situated further forward, an incision about two inches long should be made over and just above the posterior inferior spinous process of the ilium, and the tendinous attachments pushed aside with a blunt instrument. The diseased bone can be completely removed through this wound with a chisel and a gouge.

It should have been mentioned that counter-irritation and extension should be practised in recent cases, as well as complete rest.

GENERAL SESSIONS.

FOURTH DAY, FRIDAY, MAY 11TH.

Meeting opened by DR. A. Y. P. GARNETT, President. The address on

STATE MEDICINE,

was delivered by DR. H. P. WALCOTT, of Boston, who urged the necessity of States, General Government, and Municipalities taking additional precautions for the prevention of disease, and demonstrated how by measures such as are adopted by the Massachusetts State Board of Health, the spread of contagious disease could be diminished or reduced to a minimum.

In the report of the standing committee on Meteorological Conditions, DR. N. S. DAVIS, Chairman, there were presented:—

(1) A summary of facts gathered, concerning all appreciable meteorological conditions, coincidentally observed and recorded in different parts of the country.

(2) The efforts made to determine how far these facts show any constant relation of one series of facts to another.

(3) A summary concerning the prevalence of a limited number of acute general diseases, more particularly typhoid fever.

(4) A critical examination instituted to determine what uniform coincidence, if any, can be traced between the more important meteorological conditions and the prevalence of disease.

The following questions were submitted:—

(1) Is it probable that the free and albuminoid ammonia, when existing in the atmosphere in excess, compared with the amount of ozone and hydrogen peroxide, can constitute the pabulum for the rapid development of either pathogenic germs or ptomaines, and thereby afford an explanation of apparently simultaneous attacks of some epidemic diseases in several persons in the same city or district, yet without any other traceable connection with each other?

(2) Do the well-established facts attending the development or propagation of typhoid fever and cholera justify the inference that the specific causes require active propagating pathogenic force, only exterior to the body and in connection with soil water?

(3) May such specific causes continue to propagate and retain their pathogenic force indefinitely, exterior to the body, or do they pass one stage of development in the living body and another exterior to it?

On motion, the committee was continued.

DR. QUIMBY read the report of the special committee on Criminality of Fœticide and Measures for its Prevention. The adoption of the report was opposed by a number of members and on motion, laid on the table. The report of the special committee on Duties commonly Exercised by Coroners, read by DR. MARCY, was adopted.

On motion, a resolution was adopted, urging upon Congress the necessity of immediate passage of Senate bill No. 2,493, to perfect the quarantine service of the United States, which bill has passed the Senate and is now pending in the House of Representatives, in order to make provisions for protection against the introduction of contagious diseases before the approaching summer.

A motion was made to take from the table an amendment to the By-Laws, which had been so placed at the last annual meeting, and adopt it. The amendment had been proposed at the last meeting by Dr. Seiler, and divided the Section of Ophthalmology, Otolaryngology and Laryngology into two sections, one on Ophthalmology and the other on Otolaryngology. The motion was carried.

DR. LOVE moved that the report made by the committee on Fœticide, etc., be taken from the table and referred back to the committee. After considerable discussion Dr. Love accepted an amendment to refer the report to the committee on State medicine, in which form the motion prevailed.

DR. QUIMBY presented a resolution recommending the appointment of a committee, to consist of one member from each State, whose duty it shall be to devise the best means to secure adequate legislation to provide for examination, charter colleges, and provide for higher medical education. On motion, the resolution was tabled.

The following resolution was adopted: "That the American Medical Association approves of the movement looking to the celebration in Washington, in 1892, of the four hundredth anniversary of the discovery of America by Columbus, and the establishment there of a museum of the arts, industries and antiquities of the three Americas; and the Association hereby requests Congress to pass the necessary legislation appropriate to this end." Carried.

The SECRETARY read the reports of secretaries of the various Sections and announced the foreign delegates.

After a vote of thanks to the Chairman and the profession of Cincinnati, the Association adjourned.

—A prisoner in an English jail recently committed suicide by the novel manner of cramming a piece of cloth down his throat with a wooden spoon. The medical evidence, however, showed that the spoon could not have been pressed so far down with the hand, and that the man lay face downward and pressed the bowl of the spoon against the floor.

THE NEW YORK ACADEMY OF MEDICINE.
SECTION ON NEUROLOGY.

STATED MEETING, May 11, 1888.

DR. W. H. THOMSON read a paper on

DIPHTHERITIC PARALYSIS.

In commencing he referred to what he termed the post-latent stage of the acute infectious diseases. Upon the antecedent latent stage, or period of incubation followed the stage of development, the termination of which was taken for granted by the text-books to coincide with the subsidence and disappearance of all the characteristic signs of the disease itself, and with the restoration of the disordered functions of the body to their normal state. He had long been of the opinion however, that in this class of affections there followed a latent stage, specific to each disease in its characters and of equally specific processes and duration, so that not only must a post-latent period be predicated of them as necessary to their real course, and always preceding final recovery, but the fact be also taken into consideration that in each the specific latent processes are often of as much practical importance as regards the matter of treatment as any of the outward manifestations of the stage of development itself. If this was true, when certain disorders arose during the so-called convalescence of the patient, instead of regarding them as sequelæ, and therefore of a more or less accidental character, we should look upon them as much parts of the original disease as the eruption of an exanthema. Thus, scarlatinous nephritis ought not to be called a sequel of scarlet fever, for we had no right to forget that the child still has scarlatina and the kidneys are yet to be heard from, though the patient may have returned to play for two weeks after his apparently mild and temporary illness.

The frequent severity of many of these so-called sequelæ, in comparison with the light symptoms of the stage of development, ought also to suggest, he said, that instead of having only traces or after-effects to deal with, we had the original complaint still in all its power, and that in these cases its most active workings were during this third period of the disease. Having spoken of what he regarded as the post-latent stage of scarlatina, typhoid fever, measles, and ague, he stated that what he wished to maintain was that all diseases which depend upon an infection of the system by a self-multiplying agent are divisible in their life-history into three stages; namely, (1) the pre-latent or incubation period; (2) the development or manifestation period, and (3) the post-latent period, which latter is not a sequel of the preceding two, but a necessary and integral stage of the whole process, with its own specific characters, and therefore, its own specific dangers, and probably dependent in some cases upon the addition of new special elements in the morbid process. Diphtheritic paralysis was, therefore, by no means exceptional in affording us an instance of an infective disease apparently, but only apparently, getting well, and then being followed, perhaps after a period of some weeks, by the development of very formidable symptoms. The intensity of these symptoms in many cases so much exceeds the preceding signs of diphtheria that he had several patients brought to him in whom no such antecedent was suspected. Hence it was clearly a post-latent stage development, for it rarely manifested itself till the second week

after the ordinary course of the disease; in most cases not coming on till the third week, and in many not till the fourth week, or were longer. At first sight diphtheritic paralysis appeared somewhat analogous to hysterical. Thus, it often happened that while it was invading new tracts of nervous distribution it was leaving those first attacked. This superficial resemblance with hysteria, however, ended here, for no disease had in reality less of the characters of functional and more of those of the organic paralysis than it manifested. On the other hand, in contrast with organic paralyses, it began generally with just the signs with which the worst organic forms ended; namely, with apparently bulbar symptoms. For a long time the early implication of the palate was universally ascribed to the local influence of the antecedent exudation in the throat; but this view was negatived not only by the fact that the paralysis bears no special relation to the extent or duration of the previous angina, but also by the fact that paralysis of the palate and dysphagia are the most common parietic symptoms in those patients in whom the original seat of the disease was not in the throat at all, but in some other parts of the body.

Having stated that his object was rather to discuss the nature of diphtheritic paralysis than to enumerate its various clinical manifestations, he went on to remark that the coincidence of motor and sensor paralysis in limited localities which were yet supplied from both sides of the brain and cord would indicate that the lesion was peripheric and not central. It was true that we often had only a motor or only a sensory local paralysis in diphtheria, but in the palate it was frequently the reverse, both arches being equally relaxed and equally insensitive. On the other hand, some of the patients of the next most common manifestation of diphtheritic paralysis, namely, that of the power of accommodation in the eye were rather puzzling to explain on the hypothesis of peripheric rather than centric origin. As in other examples of ophthalmoplegia interna the slight loss of accommodation with preservation of the light reflex was a sign of a central lesion, it seemed to be difficult to attribute diphtheritic cycloplegia to a local affection of the ciliary muscle, except that in other paralyses of the third nerve not diphtheritic it was rare to see one limited to the ciliary branch alone. It was curious, also, that the power of contracting the pupil in efforts at accommodation was sometimes preserved and sometimes absent after diphtheria.

In about half the cases of palatine palsy the limbs became in time involved, and the legs both before and more extensively than the arms. The leg movements were quite unlike those of spinal paraplegia, and instead of being stiff and spreading, were more like those of hysterical paralysis in dropping heavily to the floor. Dr. Thomson referred briefly to other seats of paralytic trouble, and then stated that the exemptions of diphtheritic paralysis were quite noticeable and peculiar. Besides the nerves of hearing and of sight we had a striking exemption of the vasomotor and trophic nerves. The skin of the paralyzed parts was neither glossy, œdematous, or mottled, nor the seat of ulcerations or erosions; though occasionally there was a more or less transient atrophy of some muscles. The electrical relations were sometimes unchanged. Oftener, however, when the motor disturbances had been prolonged, faradic excitability

was much diminished or lost, and the muscle phenomenon of the reaction of degeneration was present. It was in these cases that we came the nearest to signs of centric implication in slight weakness of the sphincters of the bladder and rectum, especially of the former.

The most characteristic, that is to say invariable, change of diphtheritic paralysis was absence of the knee-jerk. This phenomenon not only accompanied the paralysis, but it belonged to diphtheria by itself; for, according to Bernhardt, it occurred in about two-thirds of all cases of diphtheria which have no paralysis of any kind. The existence of a post-latent stage in this disease was thus demonstrated, even if we did not have paralysis; for, according to Bernhardt's observations, its most usual time of development in non-paralytic cases was in the second week, although it sometimes begins at the end of the first. Dr. R. L. McDonnell, of Montreal General Hospital, however, had published records of eighteen cases of diphtheria admitted to his wards, in ten of which the knee-jerk was absent at the time of admission, and while they were suffering from the first symptoms of the disease. From his observations on these cases he arrived at the following conclusions: (1) In a considerable number of cases the knee-jerk is lost from the beginning of the disease, and this affords a valuable means of diagnosis of the nature of the throat affection; (2) absent knee-jerk at the beginning has no influence on the prognosis.

While Dr. McDonnell's experience was probably exceptional, the fact remained that this symptom was of such constant occurrence in diphtheria, and was so significant in itself from its relation to other nervous diseases of the nature of the morbid process in diphtheritic paralysis, that it took the first rank in the consideration of the true pathology of the affection.

Before going further Dr. Thomson summed up his conclusions as to the pathology of diphtheritic paralysis from its clinical features alone, as follows:

(1) That it is due to a periphtric and not centric nervous disorder, because it is so difficult to conceive of the central nuclei being primarily affected in many cases of diphtheria without their closely contiguous or associated nerve-centres becoming also involved, as they are in all other nervous affections where the centres in question are affected.

(2) That it is not due to any inflammatory infection of the periphtric nerves. The great clinical feature of neuritis is pain, and absence of pain is the distinctive feature of diphtheritic paralysis.

(3) That from the start it is characterized by paralysis of reflex impressions. This, of itself, is conclusive against a primary inflammatory element, and it is further supported by the absence of signs of implication of the vaso-motor nerves, which are so sensitive to inflammatory irritation. This early abolition of reflex movements is not only shown in the patellar reflex, but elsewhere even more strikingly. Often not the slightest attempt at gagging will follow the most prolonged titillation of the palsied palate, and the epiglottis, when affected, may be fingered without the least protest.

As to the pathological anatomy of diphtheritic paralysis, we owe to Déjerine the first conclusive demonstration that this affection has for its anatomical basis a change similar in all its essential features

to the changes found in multiple neuritis from any cause. Dr. Thomson said that he did not regard that anatomical change in nerve-fibres to which the term parenchymatous neuritis is applied as a neuritis at all in the sense that it is caused by a true inflammatory process, but rather as a primary degeneration of the nerve-elements quite distinct from inflammation. Interstitial neuritis was the only true neuritis, as it is accompanied by a cell infiltration and the other characteristics of all inflammatory processes. In a recent publication Déjerine had described the typical microscopic appearances of descending Wallerian degeneration, without any signs of interstitial inflammation, in a case of diphtheritic paralysis. Muscular degenerations, as might be expected, accompanied, although in varying degrees, the nerve-lesions of diphtheria. Such alterations had been demonstrated most in the palate, but also in other regions, and especially in the heart. This organ, however, suffered from more than one condition in diphtheria, both in the early and in the post-latent stages of the disease.

Finally, the interesting question presented itself, What is the special agent present in the system which causes diphtheritic paralysis? In the first place, it could hardly be the original infective material which was the cause of diphtheria, because that belonged plainly to the class of agents which occasion communicable diseases; in other words, it was a living self-multiplying organism. Diphtheritic paralysis only came after there was nothing more to catch from the patient (generally weeks after the infective agent had done its work), and was no more catching than any other paralysis. On the other hand, our knowledge of the action of micro-organisms was sufficiently advanced now for us to know that some of them evidently cause disease by generating definite poisons or ptomaines, which are absorbable into the blood, and then act there just as other poisons act; some of them as even arsenic does, causing multiple neuritis of a disconnected and yet selective kind. This rendered it quite conceivable that a ptomaine might follow upon the changes which the diphtheritic process set up in the organism, and thus produce all of its characteristic symptoms. The special tendency of diphtheritic inflammation to cause necrotic and gangrenous lesions lent a further support to this surmise.

As the processes of Nature were never wholly exceptional, but often were reproduced in different yet analogous forms, it was possible to suppose that the working of the diphtheritic organism might in certain cases prepare the way for some subsequent process in the body by another organism, when the conditions for its growth had been fulfilled by the antecedent presence of the diphtheritic agent, and that it was during this subsequent process that the poison which works such mischief in the venous system was produced. This surmise was rendered more probable by the remarkable account of Boissarie, cited by Gowers, of an epidemic in a certain district of Paris, where there were observed a series of cases of severe diphtheria and at the same time a series of cases of paralysis of the palate, eyes, limbs, etc., exactly like that which occurs after diphtheria, and accompanied by albuminuria. Yet in these cases of primary palsy there was no history of preceding sore throat, and, strange to say, in several of them distinct diphtheria followed the paralysis, which diminished during the throat affection; indicating that the poison of the paralytic

disease was of a different origin from the virus of the diphtheria. Hence it seemed likely that under certain circumstances its producer could exist and form its specific ptomaine without having the diphtheritic agent to prepare the way for it. The late researches of Pitre's and Villiard, on peripheral neuritis occurring after typhoid fever, with instances of the same paralysis of the palate and of accommodation occurring after that disease as after diphtheria, further lent color to the surmise that we may have an independent origin from some successive organism of the paralyzing poison, which develops generally after diphtheria, but may also do so after typhoid, and perhaps after other forms, or occur independently, as in Boissarie's cases.

DISCUSSION.

DR. A. JACOB said that there were undoubted cases of central origin on record, and a few cases of ataxia even had been observed. He believed that Dr. Thomson was right in assuming that the paralysis was not to be taken as merely a sequelæ of diphtheria, but rather as really part and parcel of the disease. If there was any affection which ran an indefinite course, it certainly was diphtheria; this course sometimes extending over many months. One difference between this and the other contagious diseases was that, once having had it, the subject was all the more liable to subsequent attacks. In many instances it seemed to him that these repeated attacks simply showed the continuous presence in the system of the disease, which might be hidden away in the tonsils or the lymph-bodies, and likely at any time to break out afresh.

As a rule, the paralysis first appeared in the fauces, affecting deglutition, and then successively in the muscles of ocular accommodation and of the extremities. Finally, there might be respiratory paralysis, which often proved fatal. This order could never be relied upon, however, and in making a diagnosis in cases where there had been no throat symptoms, one of the main points to be depended on was the fact that in diphtheritic paralysis only a comparatively small number of muscles were usually affected at the same time. Another point was the fact that the sphincter was never, or almost never, involved.

He then went on to say that paralysis not infrequently came on during the acute stage of diphtheria. In heart-failure, which was so common an occurrence in this disease, there was no doubt a failure of the heart-nerves, either the sympathetic or the pneumogastric. This was an accident liable to occur in any case of diphtheria, and he had therefore always insisted on the free administration of alcoholic stimulus, and cardiac tonics from the very first. After symptoms of heart-trouble had once appeared, it was usually too late for such remedies to be of much service. Respiratory paralysis was about as fatal as heart-failure, hence the most energetic measures were called for to combat it, and strychnia and electricity should be pushed to the utmost possible extent in such cases.

DR. ANDREW H. SMITH said that it seemed to him very remarkable that we should so frequently have recovery from diphtheritic paralysis when the anatomical lesions of the condition were so marked. The paralysis had also always been somewhat of a stumbling block to him in trying to accept the hypothesis that diphtheria is originally a merely local disease. He had no doubt that there were cases of diphtheria in

which no membranes ever appeared, and the fact that instances were on record in which diphtheritic paralysis occurred without any previous throat symptoms certainly went to sustain the idea that diphtheria is essentially a general disease; while the membrane was only an indication of it, just as the erythema of scarlatina was the outward manifestation of that disease. In scarlatina and the other exanthemata the eruption did not constitute the disease.

Dr. Smith then referred to the case of a child whose mother had diphtheria, in which the diphtheritic membrane appeared, not in the throat, but in the groin, where the skin had become chafed. It was also remarkable, he went on to say, that in cases of diphtheritic paralysis not preceded by the appearance of membranes in the throat the paresis usually began in the fauces. This would seem to indicate a peculiar predilection of diphtheria for this region, aside from the simple deposit of membranes there.

DR. L. PUTZEL said that he did not understand exactly what Dr. Thomson meant by the post-latent stage of diphtheria. This disease was different from scarlatina because in scarlatinal nephritis the bacterium which was the exciting cause of the acute affection still remained in the system. It seemed to him more probable that the acute attack of diphtheria left the nervous system in a weakened condition, in which any slight cause might bring on paralysis. As regards the fact that paralysis usually made its first appearance in the fauces, the reason for this seemed to be because the throat was so much affected in the acute attack. As to those rare cases in which paralysis occurred without any previous local trouble, he was not aware that a sufficient number of such instances had been observed to base any conclusions upon.

DR. MALCOLM McLEAN described a very severe and prolonged attack of diphtheritic paralysis occurring in his own person a few years ago, in which, he said, more muscles and a greater extent of cutaneous surface were affected than was usual in cases which recover. It lasted for four and a half months, and involved the muscles of respiration as well as those of the throat, and of both the upper and lower extremities, but did not affect the sphincters. With the paralysis there was marked hyperæsthesia. On the fourth day of the acute attack of diphtheria which preceded the paralysis, symptoms of heart-failure appeared, and the heart continued weak throughout the course of the subsequent paralysis. On one occasion the pulse, the ordinary rate of which was 52, fell to 32, afterwards suddenly rising for a time to 160, and this was accompanied by a most violent attack of angina pectoris, which nearly proved fatal. The practical point, which Dr. McLean said he wished to impress, was the necessity in such cases of the most absolute rest. In his own case the treatment consisted for a long time of faradization and galvanism, and in order to receive the electricity he was taken in a carriage to the office of the physician who applied it. Although this was done with the greatest skill, however, he only grew worse instead of better, except as regards the original paralysis of the fauces, which had greatly diminished. At length so great was the pain and distress which he suffered that he determined to take absolute rest in bed; and as soon as he adopted this course he began to improve. He remained in bed for a month, and the result was so satisfactory that he became convinced that in these severe cases unless this

absolute rest was insisted on, no other treatment would be of any avail.

DR. S. SEABURY JONES mentioned a case of tabes dorsalis, which occurred in a druggist who had received a wound in the hand while assisting at a tracheotomy performed on a diphtheritic patient, the paralysis commencing in the injured hand. In such cases, according to Trousseau, the paralysis sometimes, however, attacked the throat first. He then referred to a case resembling bulbar paralysis, which occurred in a woman whose child had diphtheria, but who did not, so far as could be ascertained, have any membranes herself, although she complained of sore throat. It was wonderful with what clearness and minuteness Trousseau had described all the characteristics and varieties of diphtheritic paralysis, and there was no question in his own mind that the lesion might be either central or peripheral.

The chairman of the Section, DR. W. R. BIRDSALL, said that as regards the pathology of diphtheritic paralysis, he also believed that, while in many instances there was simply a neuritis, cases of undoubted central origin sometimes occurred. In the latter, however, the central lesion was apt to give rise also to peripheral degeneration. In adults diphtheritic paralysis was relatively more frequent than in children, and it very often occurred in cases in which the original attack of diphtheria was very slight. As to the matter of heart-failure, it was a question whether the trouble was of the same nature as the paralysis observed after the acute attack, or whether it was merely functional in character. A point against its paralytic origin was the early stage at which it occurred. As to the etiology of diphtheritic paralysis, it seemed to him entirely possible that it might be due to the original poison causing the disease, the delay in its appearance being, perhaps, attributable to the comparatively long time which it takes for such toxic agents to act upon the nervous system.

In concluding the discussion, DR. THOMSON said that he had purposely refrained from taking up the subject of heart-failure in the paper because it was one presenting so many complications. He doubted very much, however, whether it were due to the same cause as the late paralyses. In many cases he believed that myo-carditis was present, and it seemed to be altogether probable that this was the fact in Dr. McLean's case. He had not touched upon the matter of therapeutics in the paper, but he quite agreed with Dr. McLean that electricity was of no value. It was highly desirable to stimulate the peripheral extremities of the nerves, and this could be best accomplished by applying to the throat in palatine and pharyngeal paralysis a paste made of equal parts of honey and black pepper. In paralysis of the extremities or trunk, an infusion of red pepper (a drachm to the pint) was also a useful local application, the parts to be enveloped in a pack of this kind twice a day. As to Dr. Putzel's criticism in regard to the post-latent period of diphtheria, it seemed to him that the paralysis was an indication of processes going on subsequently to the acute stage, and that this post-latent stage was a general characteristic of all the acute fevers. The post-latent stage varied in its manifestations in the different diseases, and, as he had stated in the paper, it was highly probable that the phenomena noted in diphtheritic paralysis at least were due to the agency of a ptomaine.

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THE MASSACHUSETTS MEDICAL SOCIETY.

As we go to press the annual meeting of the Massachusetts Medical Society is still in progress, and appears to be a meeting of more than average interest. It is somewhat remarkable that two attacks should be made at the same moment upon the condition of perfect freedom in the practice of medicine which exists in Massachusetts. The annual address is outspoken in its words in regard to the tolerance in this community of men of pretensions to knowledge in medicine derived from other sources than education, a tolerance which exists to a certain extent among men who are far from trusting to humbug of any sort in any other matters. The JOURNAL is happy in being able to assist the daily papers in their efforts to give the address a publicity among an audience of non-medical readers, because it will assist undoubtedly some of those who may read it to a better understanding of the way in which the profession regards the uneducated practitioner.

The Society is fortunate in its choice for president of Dr. D. W. Cheever, the esteemed professor of surgery of the Harvard Medical School.

ALCOHOLIC PARALYSIS.

In the *American Journal of Medical Sciences* for June, 1888, are two articles on alcoholic paralysis, one by Dr. C. W. Suckling, of London, the other by Dr. Byron Bramwell, of Edinburgh. Both agree as to the pathology; the lesion of the nervous system associated with this paralysis being a multiple peripheral neuritis. Sensory disturbances such as myalgic pains, muscular tenderness and hyperaesthesia of the skin are marked symptoms in the majority of cases. Some cases are characterized by a wide-spread distribution of the paralysis, and the presence of well-marked nystagmus and paralytic weakness of the muscles of the eye-balls. The paralyzed parts are always flaccid

and atrophied; contracture may occur, but it is rare. The bladder and rectum are rarely implicated. The faradic irritability is usually diminished, and in severe cases it is entirely abolished, while the galvanic irritability is increased, and the contractions sluggish and prolonged, the reaction of degeneration being well-marked in bad cases. Vaso-motor changes are usually present, the extremities being red and sometimes oedematous, and occasionally presenting purpuric spots. The skin of the hands and feet is sometimes glossy, at others harsh and dry. The nails are frequently affected, being curved, rigid, opaque and brittle.

Mental symptoms are generally present; the memory is impaired, the patient is emotional, suffers from insomnia, dreams, restlessness, delirium and hebetude, together with digestive disturbances, such as morning sickness and retching. Such symptoms, says Suckling, occurring with ataxy or paralysis, render the diagnosis of the nature of these two symptoms tolerably certain.

The diagnosis is usually easy. The patient complains of pains, and loss of power in the legs, the feet are dropped and flaccid, and the toes cannot be pointed upwards. The grasp is feeble, but the upper extremities are often exempt from marked paralysis. Great pain is elicited if the calf-muscles are grasped, and there is tenderness along the nerve-trunks, and frequent cramps in the calf-muscles. The knee-jerk is absent; this might lead to a confounding of this disease with tabes, for loss of the knee-jerk, pains and ataxy are present in both diseases, but the pupil-symptoms of tabes are not present in peripheral neuritis.

The prognosis is usually favorable, if the nature of the disease be detected early, and the cause removed. As for treatment, rest in bed is necessary; if there is much pain, hot fomentations and anodyne liniments are useful. Opium must be given with care. Cocaine may be injected subcutaneously. Rubbing is of great value. Strychnia is regarded by Suckling as an invaluable remedy. But in all cases, the absolute withdrawal of alcohol must be insisted upon, or the case will end fatally.

Bramwell's article is of especial value as embodying personal researches in the pathological anatomy of this affection, as well as numerous cuts giving the microscopical appearances which sections of the degenerated nerves in a typical case presented. In many instances the nerve-tubes are seen to be shrunken and atrophied (their axis cylinders and white substance of Schwann having completely disappeared), and are either completely empty, or contain a granular and molecular debris. The degenerative changes affected principally the posterior tibial and plantar nerves; the posterior tibial artery was also atheromatous. Bramwell was disposed to think that the nerve-changes were due to a peri-neuritis, and the pressure of the inflammatory products on the nerve-trunk.

ON THE USE OF CONCENTRATED LACTIC ACID AS A CAUSTIC.

In the *Centralblatt für Chirurgie*, No. 12, 1885, Prof. Mosetig-Moorhof announced the discovery that of all caustics, lactic acid was the best for morbid growths, inasmuch as it had the property of selecting out diseased, and sparing healthy, tissue. Mosetig-Moorhof used this caustic in lupus, epitheliomata, fungous processes, papillomatous growths, etc., and recommended its employment in preference to cutting.

For superficial application to ulcerating or carious surfaces, the pure, concentrated acid was used, being applied to the diseased part on absorbent cotton, and left on from six to twenty-four hours. After removing and washing, the part was allowed to rest a day or so, and then the application was renewed.

Since the publication of Mosetig-Moorhof's results with this agent, Joseph¹ has reported a case of *leucoplakia buccalis* cured with eighty per cent. diluted lactic acid, and Jellinek has given it a thorough trial in tuberculosis of the larynx. For this purpose he employs a twenty to eighty per cent. solution. The healthy mucous membrane, he says, is but slightly affected, while infiltrated portions are thoroughly destroyed. The more succulent the infiltration, the more vigorous the action; oedematous parts shrink in three or four days, and troubles in deglutition are rapidly relieved. In ulcerous, granular and hypertrophic pharyngitis, he has had good results. Jellinek believes that in laryngeal phthisis, by daily applications, more can be accomplished with this than with any other remedy, and that in its earlier stages this disease can thus be cured.²

Brün afterwards made trial of lactic acid in fungus, that is, tubercular disease of soft parts, and reports nineteen cases in patients from one to fifty-two years of age.³ The average number of acid dressings was three, and the average time of cure, twenty-five days. There were no failures, and up to date, six weeks to five months later, no relapses. He affirms that lactic acid will attack healthy as well as unhealthy epidermis, but in the subdermal tissue it seeks out fungous nests and destroys them.

Since these experiments were made, this caustic agent has been much used by practitioners the world over, and despite the favorable results often obtained in epithelioma and lupus, it is probable that the judgment of Spitzer and Hermann, formulated after a careful trial in eight cases, may be regarded as the judgment of the profession:

(1) The pain produced by the cauterization with lactic acid is at least as great as that caused by any other caustic. (2) The patients prefer invariably any caustic to lactic acid. (3) The action of lactic acid resembles that of other caustics, but is less energetic. (4) Healthy tissues are not spared by this any more

¹ Deut. Med. Woch., No. 43, 1885.

² Therapeutic Gazette, 1886, p. 323.

³ Therapeutic Gazette, loc. cit.

than by any other caustic. (5) Lactic acid has to be employed for a much longer time than chloride of zinc and other energetic caustics.

MEDICAL NOTES.

The annual meeting of the Councillors of the Massachusetts Medical Society took place Tuesday evening June 12th, at 19 Boylston Place. and resulted in the election of these officers for the Society for the ensuing year: President, David W. Cheever, Boston; Vice-President, George Jewett, Fitchburg; Corresponding Secretary, C. W. Swan, Boston; Recording Secretary, F. W. Goss, Boston; Treasurer, F. W. Draper, Boston; Librarian, E. H. Brigham, Boston; Orator, H. P. Walcott, Cambridge; Anniversary Chairman, J. R. Chadwick, Boston.

At the annual meeting of the Massachusetts Medical-Legal Society, which took place June 12th, the following officers were elected. President, Dr. J. G. Pinkham, of Lynn; Vice President, Dr. A. F. Holt, Cambridge; Corresponding Secretary, Dr. B. H. Hartwell, Ayer; Treasurer, Dr. C. C. Tower, South Weymouth; Recording Secretary, Dr. W. H. Taylor, New Bedford; Standing Committee, F. W. Draper, M.D., Boston; S. D. Presbrey, M.D., Taunton; F. Winsor, M.D., Winchester.

—In accordance with a resolution adopted by the Faculty of Medicine of the University of Pennsylvania, the first number of *The University Medical Magazine* will be issued October 1, 1888, to be edited under the auspices of the Alumni and Faculty of Medicine of the University of Pennsylvania. It will contain original articles and clinical lectures by members of the Faculty, clinical professors, demonstrators, and instructors, and will represent their teaching and practice in the various hospitals with which they are associated.

—The *Medical Record* quotes from a publication by the Gotha Life Assurance Bank, some statistics of the mortality among its policy-holders during 1887. From these it appears that the mortality of the medical members was 11.53 per cent. above the average of that of all the members taken together. The classes of disease to which this higher rate of mortality was due, were diseases of the respiratory organs, phthisis, and infectious diseases — “typhus” having proved especially fatal to the younger members of the profession. There was only one case of post-mortem poisoning, out of 1,052 deaths, and that was of a district physician. Cerebral apoplexy was remarkably frequent, beginning as early as thirty-six years of age. There were fourteen cases of suicide, and four of accidental death. These are, however, below the general average.

NEW YORK.

The first International Congress of Anthropology to meet in this country held its sessions during the

past week at Columbia College, under the auspices of the New York Academy of Anthropology, with Dr. Edward C. Mann, President, and Dr. H. S. Drayton, Secretary. Among the visitors from abroad who took part in the proceedings was Prince Roland Bonaparte, who was the recipient of much attention. Dr. Henry Maudsley, of London, sent a paper, which was read by the Secretary, on “Criminal Anthropology, Criminal Biology and Sociology, Crime and Criminals,” in which he protests against the growing disposition in some quarters to look upon every criminal as of unsound mind, and to discover distinct evidences of criminal nature in the conformation of the head and face, and in the defective structure of the brain. “A cursory survey of criminals,” he said, “suffices to show that they fall at once into two very distinct classes, the one comprising what may be called the occasional or accidental criminals, and the other what may be termed the natural and essential criminals. The occasional criminal will not present in form, feature, or cerebral structure anything characteristic to distinguish him from persons who have not been convicted of crime. Some men fall deeper and deeper into crime, while others remain honest because of the absence of similar temptations under similar circumstances. . . . The essential criminal is one who is so by reason of defective mental organization. Most often the defect is of the nature of intellectual and moral weakness, which, being irremediable, lands its victims in the class of habitual criminals. A third very distinct group of offenders against criminal law comprises those who break it while laboring under positive disease. To this class belong such law-breakers as the general paralytic, the epileptic, the maniac, and those suffering from melancholia. There is no general criminal constitution, predisposing to and excusing crime, and there are no theories of criminal anthropology so well grounded and exact as to justify their introduction into revised criminal laws. The time has come when we ought to use our prisons as we do our hospitals, not for the care and treatment of the inmates only, but for the advancement of knowledge and the improvement of man's state. So doing, we may hope to make a useful contribution to the building up of an individual psychology, which, although of humble origin and modest pretensions, shall grow vigorously, and eventually displace the barren disquisitions and speculative theories that, usurping the name of psychology, have not been, nor ever can be, of the least practical use to mankind, either in the breeding of children, the guidance of education, or in the conduct of life.”

Among the other papers read were the following: “Mental Automatism,” by Prof. E. P. Thwing, of Brooklyn, in which he gave an exposition of hypnotism, and argued in favor of its practical uses; “The Transmission of Deformities through Three Generations,” by Dr. M. L. Holbrook, of New York; “The Ethnography of the Hawaiians,” by Dr. Titus Munson Coan, formerly of the Sandwich Islands; “The

Coming Man: a Dietetic Problem," by Dr. Frank Woodbury, of Philadelphia; "Psychological Heredity," by Dr. T. D. Crothers, of Hartford; and "Pathological Inebriate Heredity," by Dr. Norman Kerr, President of the Society for the Study of Inebriety in London, and Chairman of the Legislative Committee of the British Medical Association. In his paper, which was read by Dr. Lewis D. Mason, of Brooklyn, Dr. Kerr states that no inconsiderable proportion of criminal deeds, committed by individuals under the influence of stimulants or narcotics, is the outcome of physical disease, as shown by modern scientific study. If this prior diseased condition had been treated and rectified, many acts of inebriate folly, vice, and violence would never have been perpetrated. The craving for narcotics, "narcomania," he said, was a disease which might be either acquired or inherited, and heredity, he claimed, was the most potent of the causes predisposing to inebriety. The results of investigation had been such that, while he could not go so far as to agree with the claims that from sixty to eighty per cent. of all inebriates inherited their craving for intoxicants, he was convinced that fully one-half suffered from the hereditary taint. These might be divided into direct and indirect inheritors. In the latter there might be an innate tendency to excess, so that such handicapped inheritors of the inebriate diathesis were utterly unable to indulge in moderation. In such cases there might be no craving for liquor — there might even be a distaste for it — but there was, nevertheless, a resistless impulse toward it from birth, a proclivity so strong that the slightest indulgence precipitated the subject into a paroxysm of inebriate excess. In other cases there seemed to be an actual parental craving for intoxicants, inherited from conception, and the subject indulged with avidity. In both the direct and indirect forms he had known the traits of drunkenness to be exhibited as early as from the third to the sixth year. The pathology of the inherited drink impulse consisted in maternal nutrient perversions of the fetus during pregnancy.

Among the papers read on the last day of the Congress was one by the President, Dr. Edward C. Mann, on "The Physiological Action of Alcohol"; and one by Dr. Nelson Sizer, of New York, on "The African: His Face and Cranium Considered in Relation to Industry, Skill and Economy in his Normal State, and the Effect of Caucasian Influence on his Facial and Cranial Development."

— At a meeting of the Academy of Medicine, held June 7th, Dr. T. Gaillard Thomas read a memorial paper on the late Dr. Cornelius R. Agnew, and the Building Fund Committee presented its report. This was read by Dr. Alfred L. Loomis, who stated that in addition to the \$100,000 received from Mrs. Woeris-hoffer, and the estates of the late Drs. Hosack and Beadle, \$11,995 had been received in response to the circulars sent out by the committee asking for subscriptions to the fund.

— The governor has signed the bill substituting death by electricity for hanging in the case of all criminals condemned to death, which was passed by the recent Legislature; and New York will thus have the honor of being the first State to abolish hanging in cases where the death penalty is ordered by law. It will be remembered that this bill consists of a number of carefully prepared amendments to the code of criminal procedure which provide that the prisoner sentenced to death shall be immediately conveyed by the sheriff to one of the State prisons, and there kept in solitary confinement until the day of execution, in the meanwhile to be visited only by officers or by his physician, clergyman or counsel; that the court imposing sentence shall name merely the week within which the execution is to take place, the particular day in such week being left to the discretion of the principal officer of the prison, and that the execution shall be practically private, only officials, clergymen, physicians, and a limited number of citizens being allowed to be present. The revolting scenes which have characterized so many public executions in the past can, therefore, be no longer repeated; and the doing away of the publicity which has hitherto attended executions will, it is believed, constitute a very salutary reform.

— Dr. Peters has explained that while the action taken at its last meeting by the County Medical Society in reference to the condition of the Croton water supply was in some respects sudden, it was not intended to arouse any sensation or scare in the public mind. The Society, he said, simply desired to start necessary steps for securing the purity of the water in the future. The meeting was the last one before September, and the Society decided to apply to the Senate investigating committee, appointed this session of the Legislature, to inquire into the whole subject of Croton water and the building of the new aqueduct. The Board of Health, Dr. Peters thinks, should adopt the system of microscopical examination of suspected water, as being more thorough and satisfactory than the system of merely chemical analysis at present employed.

— The coroner's jury which was for more than two weeks engaged in investigating the killing of a lineman of the Brush Electric Illuminating Company, has rendered a verdict, founded on the testimony of many expert witnesses, which hold the company responsible for the man's death. It finds that his death was caused by an electric shock received from an improperly insulated electric-light wire, while he was in the discharge of duty as a lineman, and strongly condemns the parsimonious spirit of the electric-light companies in maintaining a constant menace to life and property by not keeping their wires in repair with proper methods of insulation. The jury also recommends that the coroner shall immediately call the attention of the district attorney to the illegal maintenance of wires above ground in the city of New York.

RESOLUTIONS ON THE DEATH OF DR. EDWARD S. DUNSTER.

Resolutions passed by the Wayne County Medical Society, Detroit, May 4, 1888.

Whereas, it has pleased Almighty God to remove from this earthly sphere our worthy companion and professional brother, Dr. Edward S. Dunster, of Ann Arbor, Mich., therefore, be it

Resolved, that we as a Society, tender to his grief-stricken family our heart-felt sympathies.

To the profession before whom he has appeared so eloquent in address, logical in his reasoning, honest in his opinions which he maintained with his utmost power, and above all, his loyalty to his profession he so dearly loved, and for whose best in-

terests he so long and sedulously labored, we can only say that the loss of one so eminent can ill be told in resolutions or words; in this the heart alone can speak.

Is obedience to the Almighty power that rules the destinies of men, that can build up or cast down, that can give or take away, we bow in humble submission about the bier of our departed friend, fellow-member and professional brother. Be it further

Resolved, That our Secretary transmit a copy of these resolutions to the press and to the family.

WM. BRODIE, M.D.
HAL C. WYMAN, M.D.
C. HENRI LEONARD, M.D. } Committee.

REPORTED MORTALITY FOR THE WEEK ENDING JUNE 2, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Diph. & Croup.	Scarlet Fever.
New York	1,526,081	701	289	21.00	11.76	2.66	8.12	4.48
Philadelphia	1,016,758	335	110	9.28	16.95	1.45	1.45	1.16
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	700,000	—	—	—	—	—	—	—
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,155	130	47	10.01	23.87	3.08	2.31	.77
Boston	407,024	183	66	16.50	15.95	1.10	8.80	1.10
New Orleans	248,000	124	65	26.73	6.48	6.48	11.34	—
Buffalo	230,000	—	—	—	—	—	—	—
District of Columbia	225,000	94	39	9.64	18.02	1.06	—	—
Pittsburgh	210,000	69	35	14.49	5.80	1.45	2.90	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	20	8	40.00	—	20.00	—	5.00
Charleston	60,145	34	17	23.52	11.76	20.58	—	—
Portland	40,000	7	2	—	28.56	—	—	—
Worcester	76,928	17	6	17.64	5.88	—	5.88	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	19	5	10.52	26.30	—	5.26	—
Fall River	61,203	27	10	22.20	29.60	—	11.10	—
Lynn	51,467	12	—	8.33	16.66	—	—	—
Lawrence	40,175	18	10	5.55	16.66	5.55	—	—
Springfield	39,552	8	3	37.50	25.00	—	—	—
New Bedford	36,238	4	—	25.00	25.00	25.00	—	—
Somerville	33,307	—	—	—	—	—	—	—
Holyoke	32,887	10	3	10.00	30.00	10.00	—	—
Salem	28,781	20	5	15.00	—	—	5.00	—
Chelsea	27,552	14	1	7.14	7.14	—	—	7.14
Haverhill	24,979	—	—	—	—	—	—	—
Taunton	24,736	6	1	—	33.33	—	—	—
Brookton	24,784	7	3	—	—	—	—	—
Gloucester	23,187	2	2	—	—	—	—	—
Newton	21,105	7	2	14.28	—	—	14.28	—
Malden	18,932	11	4	9.09	9.09	—	—	—
Fitchburg	17,534	5	3	20.00	20.00	20.00	—	—
Waltham	16,651	5	0	20.00	—	—	20.00	—
Newburyport	13,839	7	0	14.28	28.56	—	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 1,806; under five years of age 736; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 320, consumption 266, acute lung diseases 217, diphtheria and croup 206, diarrhœal diseases 65, scarlet fever 41, measles 30, typhoid fever 25, cerebro-spinal meningitis 13, whooping-cough 13, erysipelas 12, malarial fever 10, puerperal fever eight, small-pox seven. From measles, New York 19, Pittsburgh three, Boston, District of Columbia and Springfield two each, Baltimore and Newburyport one each. From typhoid fever, Philadelphia 11, New York six, Baltimore, Boston, District of Columbia, Pittsburgh, Worcester, Cambridge, Fall River and Lynn one each. From cerebro-spinal meningitis, New York, Nashville, Fall River and Salem two each, Philadelphia, Baltimore, Boston, District of Columbia and Malden one each. From whooping-cough, New Orleans six, New York five, Boston and Pittsburgh one each. From erysipelas, New York four, Boston three, Philadelphia two, New Orleans, Nashville and Worcester one each. From malarial fever, District of Columbia four, New York and Baltimore two each, Philadelphia and Charleston one each. From puerperal fever, New Orleans four, Milwaukee two, Boston and Springfield one each. From small-pox, New York and Philadelphia three each, Boston one.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING JUNE 9, 1888.

MAGRUDER, A. F., surgeon. Detached from the "Yantic" and granted sick leave.

BATES, N. L., medical inspector. Ordered to the "Richmond."

KIDDER, B. F., medical inspector. Detached from the "Richmond" and wait orders.

MACKIE, B. F., surgeon. Detached from Naval Examining Board, preparatory to sea service.

HEYL, T. C., surgeon. Ordered to the Receiving-ship "St. Louis."

STREETS, T. H., surgeon. From "St. Louis" and to Medical Examining Board as recorder.

DEEBOSE, W. R., passed assistant surgeon. From Naval Hospital, Norfolk, and to the "Jamestown."

WELLS, HOWARD, passed assistant surgeon. From the "Jamestown" and to Naval Hospital, Chelsea.

The meteorological record for the week ending June 2, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barom-eter.	Thermometer.				Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Amount in Inches.
Saturday, June 2, 1888.																		
Sunday, ... 27	29.97	49.0	57.0	50.0	37.0	87.0	93.0	91.0	N. E.	E.	E.	9	8	7	O.	O.	O.	0 .0
Monday, ... 28	29.98	51.0	59.0	49.0	33.0	94.0	97.0	95.0	E.	S. E.	E.	10	6	7	O.	R.	O.	6 .21
Tuesday, ... 29	29.86	57.0	68.0	51.0	34.0	89.0	84.0	89.0	S.	E. S.	S.	8	8	5	O.	C.	C.	2 .40
Wednesday, ... 30	29.90	57.0	77.0	55.0	34.0	88.0	60.0	74.0	N. W.	E. W.	S.	9	15	12	P.	O.	O.	9 .05
Thursday, ... 31	29.82	59.0	70.0	60.0	35.0	74.0	87.0	85.0	N. W.	E. S.	S.	10	2	5	P.	O.	O.	2 .05
Friday, ... 1	29.70	62.0	74.0	54.0	37.0	47.0	50.0	65.0	S. E.	W. W.	S.	2	20	12	G.	O.	C.	1 .05
Saturday, ... 2	29.85	61.0	70.0	49.0	57.0	36.0	51.0	48.0	W.	S. E.	S.	9	9	12	C.	O.	C.	0 .0
Mean, the Week.	29.869	56.6	66.0	53.0				78.1										15 .87

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE WEEK ENDING JUNE 9, 1888.

BAILLACHE, P. H., surgeon. Detailed as Chairman, Board of Examiners, to meet in Washington, June 25, 1888. June 8, 1888.

FESSENDEN, C. S. D., surgeon. Detailed as member, Board of Examiners, to meet in Washington, June 25, 1888. June 8, 1888.

PERVANCE, GEORGE, surgeon. Detailed as recorder, Board of Examiners, to meet in Washington, June 25, 1888. June 8, 1888.

SOCIETY NOTICES.

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.—Preliminary Programme of the Fifth Annual Meeting of the American Climatological Association, Washington, D. C., September 18, 19, and 20, 1888. The following papers and discussions have been arranged for, and others may be added to the list:

The President's Address, Dr. A. L. Loomis, New York. The Relation of High Altitude to Gout Disease, Dr. S. A. Fisk, Colorado. Is Climate an Etiological Factor in Graves' Disease, Dr. R. G. Curtin, Philadelphia. An Environment Experiment Reported, Dr. E. L. Trudeau, Saranac Lake. Definite Results Obtained by the Climatic Treatment of Disease, Dr. A. Y. P. Garnett, Washington. Invalids Suited for Treatment at Colorado Springs, Dr. S. E. Solly, Colorado. Influence of Semi-Tropical Latitudes on Types of Disease, Dr. Jno. Gutierrez, Charleston. Discussion of the Relative Importance of Different Climatic Elements in Treatment of Phthisis: *Referee*, Dr. E. T. Bruen, Philadelphia; *Co-Referee*, Dr. V. Y. Bowditch, Boston. Observations on the Use of Terebene, Dr. M. D. Cammann, New York. Climate and Bright's Disease, Dr. J. C. Wilson, Philadelphia. Discussion of The Mineral Waters of the United States: Therapeutic Value as Suggested by their Chemical Composition, Dr. A. C. Peale, Washington; Their Therapeutic Value in Gastro-Hepatic Diseases, Dr. William Pepper, Philadelphia; Their Therapeutic Value in Urinary and Arthritic Diseases, Dr. A. H. Smith, New York; Their Therapeutic Value in Malarial Diseases, Dr. J. C. Van Bibber, Baltimore. Report on Mineral Springs, Dr. C. E. Rice, Chairman, New York. Interparental Pathological Products, their Cause, Significance, and Special Relationship to Pulmonary Phthisis, Dr. J. R. Leaming, New York. Conditions which tend to Render the Atmosphere of a Locality Aseptic, J. T. Whittaker, Cincinnati. Discussion of the Influence of Altitude on Cardiac and Pulmonary Diseases: *Referee*, Dr. F. Donaldson, Sr., Baltimore; *Co-Referee*, Dr. E. L. Shury, Detroit. The Atmosphere of the Characteristics of Texas, Dr. Morse C. Fayet, U. S. A., San Antonio. Therapeutic Differences of Mountain and Sea Air, Dr. W. H. Geddings, Aiken. Indications and Contra-Indications for Altitude in Treatment of Phthisis, Dr. F. I. Knight, Boston. Discussion of the Nasal and Neurotic Factors in Etiology of Asthma: *Referee*, Dr. F. E. L. Bosworth, New York; *Co-Referee*, Dr. E. L. Shury, Detroit. The Atmosphere of the Dr. I. H. Platt, Lakewood. Therapy of Ocean Climate, Dr. A. L. Gilou, U. S. N. Climatic Characteristics of Roan Mountain, Eastern Tennessee, C. J. Kenworthy, Florida. Notes of Summer in Switzerland, Dr. D. B. St. John Roosa, New York. An Epidemic of Cerebro-Spinal Meningitis in Central New York, Dr. W. T. Ford, Utica. Further Contribution to the Study of Consumption among the Indians, Dr. W. Matthews, U. S. A.

A. L. LOOMIS, M.D., LL.D., President.
J. B. WALKER, M.D., Secretary.

AMERICAN LARYNGOLOGICAL ASSOCIATION.—The Preliminary Programme of the Tenth Annual Congress which will be held in Washington, D. C., September 18, 19, and 20, 1888, is as follows:

Ten Years of Laryngology, Rufus P. Lincoln, M.D., New York. Congenital Bony Occlusion of the Posterior Nares, Chas. H. Knight, M.D., New York. The Effects of varying rates of Stimulation on the Action of the Recurrent Laryngeal Nerves, Franklin H. Hooper, M.D., Boston. Subglottic Laryngeal Enchondroma, E. Fletcher Ingals, M.D., Chicago. A Photographic Study of the Laryngeal Image during the Formation of the Registers, and Production of Variations in the Pitch of the Singing Voice, Thomas R. French, M.D., Brooklyn. Lupus of the Nose, Rhinuryx and Larynx, Samuel Johnston, M.D., Baltimore. Imaginary Lingual Ulceration, George M. Leferts, M.D., New York. A Possible Substitute for Tracheotomy and Intubation in certain cases, Edgar Holden, M.D., New York. Antiseptic Nasal Surgery, Clarence C. Rice, M.D., New York. A Case of Sarcoma of the Tonsil, Alexander W. McCoy, M.D., Philadelphia. A Case of Subglottic Chronic Stenosis of the Larynx cured by Dilatation, Frank Donaldson, M.D., Baltimore. Internal Esophagotomy, John O. Roe, M.D., Rochester. The Treatment of Atrophic Rhinitis by the Galvanic Current, J. H. Hartman, M.D., Baltimore. The Anatomy of the Nasal Chambers, Harrison Allen, M.D., Philadelphia. Notes on a Case of Nasal Caries, complicated with Meningitis; successfully treated by means of the Surgical Drill, Wm. C. Jarvis, M.D., New York. On Fixation of one or both Vocal Bands in the Pharyngeal Position. (So-called Abductor Paralysis), F. Donaldson, Jr., M.D., Baltimore. Residence at Certain High Altitudes as a Means of Cure for Laryngeal Phthisis, Clinton Wagner, M.D., New York. Further Investigations as to the Existence of a Cortical Motor Centre for the Human Larynx, Dr. Bryson Delavan, M.D., New York.

Besides the above titles which have been received to date, papers have been promised by Drs. Morris J. Asi, J. Solis Cohn, John N. Mackenzie, and Beverly Robinson; and by Dr. A. Gungenheim, of Paris. A number have yet to be heard from.

D. BRYSON DELAVAN, Secretary.

1 East 33d Street, N. Y.

BOOKS AND PAMPHLETS RECEIVED.

Vesico-Vaginal Fistula. By Reuben A. Vance, M.D. Cleveland, O. Reprint. 1888.

The Neural and Psycho-Neural Factor in Gynæcæ Disease. By C. H. Hughes, M.D., St. Louis, late Superintendent Missouri State Lunatic Asylum; Honorary Member British Medical-Psychological Association, etc. St. Louis, Reprint. 1888.

Atrofia e Litopassia. Per il Dr. Gustavo Usiglio, già Operatore nella Clinica del Prof. Billroth a Vienna, I. Chirurgo assistente nell'Ospedale Civico di Trieste. II Edizione. Trieste. 1888.

Annual Report of the Provost of the University of Pennsylvania, including Reports of Departments and Abstract of the Treasurer's Report, for the Year ending October 1, 1887. 1888.

Station-List of Officers of the Medical Department and Hospital Stewards of the Hospital Corps, United States Army, April 1, 1888, or at date of last report received at this office. Washington.

The Intra-Uterine Stem in the Treatment of Flexions. By A. Reeves Jackson, A.M., M.D., Professor of Gynaecology in the College of Physicians and Surgeons, Chicago; Fellow of the American Gynaecological Society, etc. Reprint. 1887.

Address.

RE-ESTABLISHMENT OF THE MEDICAL PROFESSION.¹

BY B. JOY JEFFRIES, A.M., M.D., OF BOSTON.

Our profession cannot contend with what is called business in the accumulation of wealth. No man ever made a fortune as a physician. I mean no one ever paid his expenses and laid by at interest enough to live on, through the practice of medicine. I do not, of course, refer to those who have entered into business with their gains, by speculation or speculative investments. Such may have gained or lost as other so-called business men do. This we have in common with the other professions, though we are not so well positioned as they as we advance in life. Even with continued health and strength, and the largest possible amount of practice, a physician in this country can never acquire by his toil the incomes readily made in other occupations now recognized as professions. Moreover, many of these place a man in direct opportunity to become profitably interested in business enterprises, more or less associated with his special work.

It is therefore useless for us to contend with trade or business either in earning a living or in the accumulation of money. Our profession is most essentially not a trade. Those in it who attempt to make it so but lower themselves to the level of trade, or simply money-making. Our calling belongs to that department of man's work recognized as scientific or knowledge seeking. We are simply men of science, that is, men of knowledge and its pursuit, the attainment of which is to benefit other people primarily. Now the world over, men who give themselves up to the pursuit of knowledge have been considered as worthy of only so much of this world's goods as will simply keep them bodily in a condition to work with their brains and hands in science seeking.

When these other professional men apply science, knowledge, to the useful arts, that is, render money-making possible, then their recompense may be very large. But the physician's science or knowledge is applicable only to relief of pain, the saving of life, or the increased healthfulness and bodily comfort of mankind. This the world does not similarly recompense. The world at large values knowledge only as a means of making money. I say the world at large; fortunately for mankind there is a body of truth seekers for truth's sake. To this class our profession should belong. And we deserve recognition in it because we do not keep what we learn, but disseminate our knowledge as quickly as possible for the benefit of humanity. True, this humanity or the world at large simply regard us as tools for so doing. But the diligent study and the honest practice of medicine gives a man a power, and a self-respect, and a consuming interest, a love of his profession which lifts him above the assaults of the world. The physician has a contentment which aggravates as well as surprises those he comes in contact with. In this contentment we understand and hold by each other as kindred spirits.

No class in the community know better than phy-

sicians the baneful effect of what in general terms is called "filthy literature." Here *our* knowledge is of value, and our opinions will be received by the community. Have we not dreaded giving them from disgust at cant, pseudo-morality and false sentiment?

But there are associated together for the suppression of vice, good, honest, mentally strong, shrewd and prudent men and women, who have in their work to contend with the best paying criminal rascality and foulness existing among us. Money will flow like water to prevent legislative control. Are we as physicians, knowing and seeing all, doing our share in helping those properly at work for the suppression of vice? There can be no false stigma attached to any professional efforts of the kind.

Certainly one thing we should do; namely, by united action and condemnation, prevent medical book notices from being distributed, containing wood cuts, often perhaps totally unnecessary in the books themselves, and which in the pamphlet advertisements never induced the rightful sale of a single copy.

The respect of the old due to the young — I do not think anywhere in life this applies more strongly than in our profession. The young have first what time and the wear and tear of life slowly but surely eat away, namely, enthusiasm. Without this but little can be accomplished, and that little only as a burden. The young have that power of adapting themselves to new or changing circumstances which old men have not, and progress in our profession means just this. Capacity for work, both physical and mental, exists in the young that the old no longer possess, or but very exceptionally, and only to prove the rule.

A man has had thorough preliminary instruction in youth, and subsequent professional education of the best. He has talent and ability, and knows how to use these. He is urged for some place of trust and influence for which he is well qualified. "Don't you think he is rather young?" is heard from some over-prudent objector. No, I want to reply, but your saying so proves that you are already too old to retain your place. Respect for the young is prudence as well as justice.

How many years ago would it have been rank heresy to have urged any one under sixty years of age for the presidency of the then *Harvard College*, but the *university* has been built up by such an one, and not least the department we are interested in. Our Society should reverse the maxim, young men for action, old men for councillors.

What! would you throw away the value and weight of experience? Certainly not, if the latter had any knowledge to start with, and the power and ability to constantly accumulate further, and to impart it. Merely having lived or practiced so long does not necessitate the increase of knowledge or a greater power of its application. Quite the reverse, — it may have simply frittered away originality by dull routine. Inexperience is often of real value, because it dares to do and try what experience has shown some one else *he* cannot do. Years of accumulated sameness is only worthy of the respect which age alone gives. Mere time does not make valuable experience; the latter comes from constant and progressive thought and study, and their intelligent application to professional life

¹ The annual address to the Massachusetts Medical Society, June 13, 1888. Concluded from page 693.

and work. Experience may or may not come with age; the latter does not of itself make it. This is one of the greatest fallacies of the present age in all departments of life.

Old age is to be respected for itself, but when it would guide our actions by its experience we demand to know what that has been, and of how great value. Age as well as youth must prove its ability to have observed and drawn truthful conclusions; that is, to have advanced by intelligent study. Time does not make solid ignorance knowledge. But how eagerly the world seeks the experience of those who have proved themselves capable of having profited by it. The fancied accumulation of knowledge from the mere lapse of time is a dangerous mistake.

I often recall the following instance. In the Director's room of a railroad corporation I had shown the officials the practical results of defective color-sense by instances from among their employés. They could not or would not understand or admit it. One otherwise pleasant old gentleman sank back in his arm-chair, and with almost a snarl of doubt and derision exclaimed, "Why, Dr. Jeffries, I have been railroadng more than forty years, now if any such thing as color-blindness existed, I must know all about it." And how far is the community from this *now*?

Education is the teaching the hands to work at advantage and the brain to think rightly. Certainly this applies to medical education. Proper medical education cannot be given the ignorant young man, and only young men should be made doctors. If the hands and brain have not been trained how to work, they cannot be properly employed in the higher field of human activity occupied by the physician. The advance in modern education comes not from additional amount of facts poured into the school boy or student, but from applying improved systems by which brain work tells better.

It is possible to teach the power of observation, deduction, the application of principles, and sharpen the brain, the wits, to seize the time for action. The medical schools admitting young men without such preparation, even if they attempt to teach well and thoroughly, never can turn out the best physicians.

The young man in this country who wants to go into medical trade thinks he has only to learn a little and get his diploma as he would fit up a grocery shop. The community thinks so too. The so-called medical colleges scattered over the country are ready to help him for the fees he can scrape together to pay them. This tradesman opens his shop for custom, and the world looks upon and patronizes it like any other shop. But in medicine as in all the true professions, work but commences with the responsibility of occupation, and never ceases while that lasts. Better for a man if it lasts through his life.

Now these medical colleges, backed by the community, want the profession to foster such trade doctors, and have us accept them as colleagues. These men themselves claim our support and recognition, and would pull us down to their level to help their trade. The time has amply come for this to stop. The physician must rest on his individuality, on his learning and his power of using his knowledge.

If you carefully observe the men teaching and

learning in this and the two adjacent buildings,² and then compare them with the men teaching and learning in the building farther on, in which we are or should be all interested, there will be found a difference of a peculiar and subtle character, the difference between the medical and the technical man. Perhaps only our profession can understand this. I have found very shrewd men in the other professions, even the allied ones, much puzzled by it.

Here in technology, arts, sciences aside from us, the students learn facts, physical laws, principles, and their adaptation to physical conditions, and relies on set and fixed laws and rules for action. His work in life is a continuation of this. Here two and two make four, and can always be depended on as making four, mathematically deducible and proved as we say.

Now in the other building the medical student learns also facts, physical laws and natural principles. But in practice he has to apply them to unnatural conditions, disease. And he learns that the conditions of disease render mathematical application of seemingly fixed principles impossible. Two and two may not make four, and he must be able to grasp this fact. The study of medicine is for this, and four years is little time enough to learn the needed facts, their application, and so to speak misapplication. This it is which besides all else separates us from other professions, and but puzzles them. They see us arriving at results from data that their knowledge and experience prove mathematically can not come. This elusive something is the spirit of medicine; he who has it most will most successfully be able to detect and cope with disease, be the most successful physician. I do not mean as to the number of his clients. That is no proof of medical talent. It is, in fact, in this country, more generally a proof of its absence. The pretender and the quack have the largest number of applicants for a time, till the next quack comes.

Since the slavery rebellion our nation has settled down to its civilization. Has our profession advanced with increasing education? Not the whole of it, for the reasons I have given. But there are many more men than ever before giving their strength and lives to the accumulation of knowledge in our calling, and its diffusion. Never before have there been so many men so highly educated in medicine as now. I cite as proof, the papers and discussions at our Society meetings, the articles published in our journals, the respect our best men are gaining from the thorough medical scholars and teachers of England and the Continent. I cite further the greatly increasing number of physicians in the various branches of medicine who are becoming good and valuable teachers among us. Never before have we had such competent and thoroughly taught practitioners under thirty years of age. Never before have we had so much true scientific work going on in our profession. The graduates of even our best schools are not content to stop their work, but seek in Europe the best teachers to compare their acquirements, and bring back to us the highest medical culture of the old centres of learning.

Should these men be classed with the ill-bred and half-educated graduates of the remaining nine-tenths of the medical schools of this country? Because they have the same title, must they be put on the same plane as the business and trade doctors our community

² Buildings of the Institute of Technology and Natural History Society.

ties are overrun with? Yet this is precisely the way they are at present treated and regarded by the laity, who make no distinction between one physician and another. And this by all classes of the laity, high and low, rich and poor, learned and unlearned.

The scientific man is often now startled by finding "a doctor" familiar with his own department. It is quite a revelation to him. Why, nearly all the work in the various sciences outside ours, now followed as professions, was formerly done by men graduates in medicine!

Among us and in our Society, this advance in medical education has been brought about by the thorough and complete change in the plan of teaching and instruction of our University School, the raising the standard of requirement, and the absolute refusal to grant a diploma of Harvard to any graduate who falls below such standard. Moreover, this elevation of the profession has been helped by the Massachusetts Medical Society also raising its standard of requirement. This is by no means so easy a thing to accomplish. The School is strong enough to be independent and insist on a proved preparatory education before entering on its curriculum. Our Society can at present only insist, by increased severity of examination, on greater medical attainments.

But it can do much to support our School and its teachers in their position by letting it be understood, and acting on the declaration, that to enter our ranks, the applicant must equal the Harvard graduate. The laity have no conception of the character of the teaching of our School. Have all the profession, all the members of this Society, a knowledge of its work and standing?

The most learned and scientific men in other departments have, I believe, but little if any knowledge of what this branch of the University and the very few other schools of similar standing in the United States are doing for the world. I regret that there are those, to whom to give this my judgment and words force and truth, I must say, as did the first president of the Suffolk District Medical Society,² when in his annual address eight-and-thirty years ago he praised the "Boston Medical School," "I do not utter this under the pressure of the official toga which I have never worn; but I record it as the tribute of a grateful pupil."

Having said this, I am free to ask, is our School and others like it doing *all* needed to fit men to practise medicine, to use their hands and brains professionally? The success and the growing number of polyclinics and post-graduate courses, right among our best schools, seem to me to positively prove that the student and the graduate find there is something more to be learned, and something worth giving time and money for. What better argument for the need of an additional year's study, however this may have to be arranged in reference to the undergraduate department of our universities and colleges?

If there are men who can as teachers attract earnest students outside of the regular courses, I do not see why they cannot be employed as teachers in the schools of four years' curriculum. This extra outside teaching I think has hindered the adoption of a four years' course as compulsory. It has fostered, unfortunately, the worst form of trade doctors among us; namely, the "two to six weeks'" fully-fledged specialist with any "scope."

I disregard the objection to four years on the score of cost. The men who built our present medical school did not stop for this sort of objection, and time has proved them right. I record here my conviction, and I wish I could record the conviction of this Society, in the support of the teachers and workers trying to elevate the standard of the profession, and thus, for only thus can it be done, replacing our calling in the respect of the laity, at the same time completely separating us in their judgment from the bands of quacks, trade doctors *et id genus omne*.

There is not in medicine the same danger of the teacher becoming the pedagogue as in general education. But I have suffered and seen others suffer so much from the latter that I cannot help giving a warning word. Medical teachers hold the same sort of relation as do other educators. They must not be too sensitive to the push and prod of the students and assistants in the struggle for existence. This should but keep them up to their work, as do the whole corps of young assistants the professors in Europe, whose places some of the former must finally fill. A man must wear his spurs after he has won them. Remember the respect of the old due to the young.

It is perhaps naturally expected of me here to say something in favor of those much used and much abused physicians called specialists. Whatever may be said against them, it must be admitted in candor that to stop the work they are doing would check the scientific advancement of the profession as a whole. Specialism means work, seeking science, knowledge, truth. It cannot be said that they keep from the profession or the world the results or benefits of their labors.

The same is now unfortunately true of the specialties as of the general profession. All I have said as to the laity's inability to distinguish between the true and the false applies with ten-fold force as to specialists. Physicians recognize this even in their own inability to decide between pretence and talent, knowledge and ignorance, experienced training and assumed.

I greatly respect other specialties, and cannot see how we can get along without them. I have to thank the men of talent and standing practising them, and have always found them as willing to help me as I them. They can defend themselves better than I can. Of my own I will say but a word. A foreign body in the cornea cannot be *prayed* out or *pried* out. The first our patient's wife has probably urged, the second been tried by a fellow workman, or the nearest doctor. But a drop of cocaine, a lens, a rightly shaped and sharp needle in a steady hand, directed by an experienced eye, quickly relieves our patient of his foe and fee. This is specialism, and as such is likely to remain among us.

It was said in praise of a physician who died some years ago that he was never seen in any place his profession did not call him. It was a proof of devotedness to his calling. In the then relations of the doctor to the community perhaps it was wise and necessary. All that has certainly passed away never to return. We are now forced to be *en rapport* with the world, its people and affairs, and, I believe, with a gain thereby to our usefulness in the practice of our profession. The more a man knows outside of and in

² The author's father, Dr. John Jeffries.

addition to his medical work, the better physician will be he. Such knowledge will never hurt his professional judgment, and will very often give him thereby a better opportunity to enforce what he knows to be necessary.

When a patient finds that we are by no means ignorant of his special work or business, can express an intelligent opinion thereon and have some interest in it, then that patient is nowadays much more likely to respect our professional advice and follow it. We have to guide and govern men and women, and we cannot without respect from the governed.

The community somehow still have an idea that physicians as a class are not capable of anything else than their own work, without business capacity, not practical. This certainly is not now the case. Well educated men in the profession are most practical, most prudent financially from necessity and experience, always recognizing and deploring waste and extravagance. In the expenditure of money for public and private charities they are now recognized as conservative and shrewd. Physicians, and most busy ones, had greatly to do with the collecting money for and its expenditure in the building of the great educational institutions on this street, including the one in which we are now assembled.

Not only is a physician nowadays allowed, if I may so say, to have some knowledge of the world of affairs, but he is beginning to be granted some familiarity with literature or with scientific pursuits, even when the latter are not directly connected with medicine. The profession at large and a part of the laity now begin to recognize the value of scientific thought and scientific study in our calling. It does not now hurt a man to be known as scientific, that is, seeking knowledge by mental labor. There was a time when this was a positive detriment, and militated against a man's opportunity to gain a livelihood.

When you ask an ignorant man to sign his name or read a sentence, he rarely with shame, more often with a certain brutal indignation, announces that he is no "scollard." This is but a relic of the time when a feudal lord would have spurned the ability to write as his scrivener did. I see the same in the uneducated doctor when he declares, with a touch of resisting pride, that he "doesn't pretend to be scientific," as if all he did know was but the first step of science, in the path of which he has trod or has lost his way. It is a dangerous thing for the profession to attempt to decry or belittle any scientific work its members are engaged in.

In the great world of scientific work our profession is needed and has its place. Its labor is special and separate, but calls strongly for thinkers, observers, truth seekers. This is the study of medicine, whilst the practice calls for the greatest endurance, patience, forbearance, toleration, and courage physical perhaps as well as moral. A thoroughly educated physician is a man of no mean parts, and will be able to hold his own with others in the world's affairs. His training makes him a good "all round man" and a gentleman.

We should not resent but welcome the coming into the profession of young men with wealth and means that render them independent of work. Even if they practice they have the right. It was once said with some truth that the possession of thirty thousand dollars would kill any man's advance and work in our

calling. That is not true now. But the young men I speak of are most valuable in softening the spirit of gain and strife. There is work in abundance for them, and to advantage of us who must delve for our living. Their position enables them to do for us what we most need but cannot accomplish. They have hours for work without anxiety.

To study medicine and take a degree in a first class medical school after a collegiate course is a training most valuable. The knowledge gained is aside and besides all other, placing the graduated physician at very great advantage over his literary, artistic, and other professional friends. Moreover, the study of medicine is earnest, serious, mentally stimulating, and gives a man breadth of character. It teaches him the value of work. One of the class of young men I am speaking of whom I had advised to follow our profession, said to me with great satisfaction and self-respect: "To graduate here at our school sickens one for loafing and idleness."

The student learns that life and happiness mean work, work for others or self, but work, without which life at last is found not having been worth the living. The graduate learns also that there is no place in medicine for the Bohemian or the dude, that all attempts to act or imitate the one or the other are wholly out of place, as any of the peculiarities which were the marks of a physician in gone-by days. Even the white cravat worn at other times than when socially demanded, is now pretty well recognized as a medical hypocrisy, Chinese mourning for departed patients. The true physician does and should dress as any other quiet gentleman.

Fortunately for us in this present day, and for the communities in which we live, the absence of means does not preclude the possibility of preparatory and medical education, and that of the highest grade. The State and the individual citizen has now given every man a chance who has brains to use and is willing to use them. It is the State's and individual's charity. Harvard University is an endowed educational charity of which every graduate is a recipient.

But absence of means must be an incentive to action, to labor, to study. For myself I know that any good which I have done for the community or for myself, has been done from the pressure of complete dependency on my own action. I believe every man finds this the case in life, hard as it may seem to him. Necessity is the mother of invention and the father of success.

In the *Kampf um Dasein* let us join hearts and hands and brains for the re-establishment of our beloved profession.

Original Articles.

OBSERVATIONS ON FORTY-FIVE CASES OF FLAT-FOOT WITH PARTICULAR REFERENCE TO ETIOLOGY AND TREATMENT.¹

BY ROYAL WHITMAN, M.D.,
Surgeon to the Orthopedic Department of the Boston Dispensary.

In lateral curvature of the spine, as in flat-foot, the same theories of muscular spasm, contraction and atrophy have been advocated, also original deformities and primary changes in bones. As in lateral curvature, flat-foot is most common in adolescence,

¹ Continued from page 601.

when changes in bones and soft parts are most rapidly taking place. The most reasonable explanation of the usual cause of lateral curvature, that is, overweight on a spine held out of the middle line⁸ applies to the foot where overweight by exaggerating the normal movements already described, causes it to give way on its weakest side: its first effect being on the os calcis, causing its anterior extremity to turn inwards and downwards, at the same time depressing its internal border, thus presenting an inclined plane on which the astragalus rotates more decidedly inwards and slips downwards and inwards until in time, we have the appearance already mentioned, of outward displacement of the foot upon the leg.⁹

The natural weakness of the inner side of the foot may, in a certain class of cases, be increased, as follows: If von Meyer's tripod be drawn on the sole of a normal foot, that is, a triangle connecting the outer extremities of the first and fifth metatarsals with the middle of the heel, it will comprise within it the greater part of the weight-bearing surface of the foot, the weight-bearing centre of the astragalus falling within it, that is, outside the line connecting the first metatarsal with the heel. In certain cases, however, it does lie to the inner side, such cases being classed by Symington as having a mechanical tendency to valgus,¹⁰ for in a normal foot the inner overhanging half of the astragalus is supported by the lateral projection of the os calcis, the sustentaculum tali, and if, as in these cases, it is so placed that its weight-bearing centre rests on this projection, it will readily be seen what an increased source of weakness this becomes, the weight of the body constantly tending to depress this support and evert the foot.

I have spoken of the overweight theory as the most reasonable general explanation of the affection. It will, of course, be understood that predisposing causes exist, either general, as rachitis, or special, as disease or injury of the ankle.

Flat-foot may be the direct result of violence, as in falling from a height, may be induced by a sprain, which may cause a permanent weakening of the ligaments, though a sprain is more likely to occur in a foot already weakened than to be of itself a cause of permanent trouble. Flat-foot as a result of cerebral or spinal paralysis need not be considered as an special affection.

As to the weight-bearing surface of the fore-foot, its points that sustain the most weight have been variously stated, as, for example, the first metatarsal, the first and fifth metatarsals. Beely¹¹ concludes, from observation on plaster casts, that when the feet are in use the head of the second and third metatarsals bear the most weight; when standing on one foot the fifth assists.

I have found accurate estimation by plaster casts difficult, because the various muscles of the foot are so constantly acting, changing the weight-bearing surfaces to maintain the equilibrium; for example, if the body be inclined forwards the toes are instinctively pressed down, if backward they are raised. These changes are, of course, exaggerated, if the body be supported on one foot while the plaster is hardening.

In standing, the greater part of the weight is borne by the heels, the metatarsals acting rather to steady the foot than to bear weight. What weight they do bear seems to be proportionately distributed to them all. If, however, the weight is borne on one leg, the body being inclined forwards so that more weight is brought on the front of the foot, it will be found that the three middle metatarsals rest quite steadily on the floor, while the first and fifth are constantly moving under the influence of their especial muscles to maintain equilibrium, the first bearing the greater part of the weight when the body is inclined inwards, the fifth when it is inclined outwards. The second and third are the weakest of the metatarsals, and are acted on by less muscular force than the others, so that the theory that they habitually sustain the most weight in standing seems improbable.

It will be remembered that the anterior part of the arch is formed almost exclusively by the three inner metatarsals, the two outer articulating with the navicular bone practically resting on the floor when weight is borne.

This outer portion of the foot, firmly held to the os calcis by strong ligaments, forms with it one lever acted on by the tendons of the calf muscle. The three inner metatarsals being less under its influence, because it must act on them through yielding joints, while the first metatarsal depends for its flexion almost entirely on other muscles, principally the peroneus longus.

In walking, the weight of the body is first borne by the heel, then by the outer border of the foot; then follows a flattening, when all the metatarsals bear their share of weight; then the contraction of the peroneus longus and the tibialis posticus bring the strong first metatarsal down with force for a final impulse to the step, the foot being now slightly adducted. At the same time, the transverse pedis tends to bring the spread-out heads of the metatarsals together, while the flexors of the toes and the short muscles attached in this region contract to assist in the final impulse.

The free action of the toes and room for the spreading of the heads of the metatarsals is of great importance, and when one examines the shoes that are worn, especially by women, and their effect upon the feet, the distorted and useless toes, with consequent corns and bunions, it seems extraordinary that the foot can perform its functions with so little discomfort. The normal angle of divergence of the foot from the line of the walk is about sixteen degrees;¹² this turning out is principally dependent on the outward twist of the tibia, the weight line being thus brought over the second toe. In the valgus condition of abduction, this angle of divergence is increased by the inward displacement of the bones of the arch, so that the line of weight may fall inside the great toe, a constantly increasing strain thus falling on the waist of the foot. In this connection, it may be said that a person with bow-legs, whose weight falls principally on the outside of the foot, whose angle of divergence is small, or whose toes turn in from the inverse spiral twisting of the tibia which so often accompanies it, is practically assured against flat-foot, while the opposite condition of in-knee predisposes to it.

Whatever the cause of flat-foot may be, the re-

⁸ Bradford, Mass. Medical Society Reports, 1886.

⁹ Vide The Mechanism of Flat-Foot, by Prof Humphrey, Lancet, March 20, 1886.

¹⁰ The Anatomy of Acquired Flat-Foot, J. Symington, Journal of Anat. and Phys., Oct., 1884.

¹¹ Archiv. für Klin. Chir., 1882, Bd. xxvii, p. 181.

¹² Vierordt. Gehen des Menschen.

sult consists in a partial dislocation of the bones of the foot, with the usual accompaniments of a dislocation to a greater or less degree, overstretched and partially ruptured ligaments, misplaced tendons, changes in the cartilages and bones. The treatment, therefore, should be an endeavor to replace, partially, at least, the displaced bones, to retain them in this position, that the ligaments may regain their normal tonicity, and to increase the muscular power.

Gymnastic exercise faithfully and persistently followed will accomplish much, and a well-fitted appliance will usually relieve the symptoms, but a combination of these two agents will be productive of the best result.

The object of an appliance is to prevent the scaphoid, astragalus, and os calcis from sinking down, and the latter from rolling over. Anything that will prop up the arch will usually relieve the pain, and various means have been devised to this end. For example, pads of horsehair, India rubber or felt placed under the arch have been used. The objections to these are that it is difficult to keep them in place, and that they change their shape constantly, so that they only partially accomplish their purpose and are uncomfortable and often painful. A band of rubber, to which a pad is attached, sewed to the uppers inside the shoe, along the outer border of the sole, running beneath the sunken arch up the inside of the leg to a calf band,¹³ or a band of webbing similarly arranged, attached by an elastic cord to the corset or waist-band,¹⁴

The element of uncertainty in regulating the tension would here, also, be an objection. It seems to me that elastic pressure is not the thing required, for too great tension would be uncomfortable, while it would be difficult to so adjust it as to prevent the bones from sinking below their normal level.

Mr. Mayo-Collier, being convinced that high heels cause the deformity, advocates a shoe with a sole one inch in thickness at the toes, and a line at the heel; he does not state that he has employed it. I should doubt its efficacy, even in a mild case, and it must be so unsightly that few patients could be induced to use it.

Dr. Morton, of Philadelphia, advocates the use of a plantar spring with an inner flange, which, expanding under weight, will allow of the natural movements of the foot during walking or standing — an advantage which is claimed for the elastic bands which have been described. I think the necessity for such expansion of the support under weight has been exaggerated for the following reasons:

If an imprint of a normal foot which rests without weight upon the floor be compared with one of a foot supporting the entire weight of the body, it will be found in the latter that the free space showing the arch is considerably constricted on all sides. A considerable portion of this reduction is due to a pressing away of the soft parts from the bones, which rest with an increased weight on the base. If the arch be looked at from the side, it will appear diminished from this encroachment of the soft parts, especially by the belly of the abductor pollicis, which, when extended, shows its mass on the inside of the foot; but the actual fall of the head of the astragalus and the scaphoid is slight. If, however, a foot with a weakened

arch be submitted to the same test, there is an actual falling of the bones, which may rest on the floor.

The state of things in a normal foot seems to be this: that when the foot rests easily on the floor without muscular tension, the bones fall to about their normal level under weight; that is, the ligaments are slightly extended.

Now, in standing, the ligaments are put on a tension, but their normal elasticity is slight, and at the same time the muscles come to their relief to prevent strain. When, however, the heel is raised or the foot lifted, there is a very considerable flexion at the mediotarsal joint, which is permitted because the dorsal ligaments are loose and weak. Thus, the natural movements of the foot would seem to consist in a very considerable flexion, but in very slight extension from the position which it assumes when resting easily on the floor.

In a flat-foot, however, we do, under weight, have the flattening and abduction which elastic bands and springs allow. These are not natural; they are abnormal movements, which should be prevented in order that the ligaments and muscles may regain their former tonicity. This restraint is especially desirable because, ordinarily, we cannot replace the bones of the sunken arch in exactly their former normal position, and often can do so only partially, even by the use of force.

Of the unyielding supports, there are two advocated: first, the steel support, corresponding to the sole of the shoe, to which it is firmly attached; second, the long steel plate, reaching from the extremity of the heel to beyond the balls of the toes, with a flange to prevent the internal displacement of the foot. This latter appliance though much more efficacious than the former, is open to the objections of being rather heavy, and interfering to a certain extent with the normal flexion of the foot when walking, making it move as a whole, causing an awkward clumping gait. The apparatus which I should suggest seems to me to possess certain advantages. It is light, comfortable, provides pressure where it is required, and does not interfere with the movements of the foot. It can be changed from one shoe to another, and its presence cannot be detected. A plaster cast of the foot is taken, not as is ordinarily done, by pressing the sole in plaster, as this tends to increase the deformity, but the foot is first replaced in its normal position as far as possible by manipulation: the patient being seated, the cast is taken in lateral halves, the foot in each case lying upon its outer border on another chair, so that the weight of the leg tends to invert it while the plaster is hardening. If the foot is at a right angle, care must be taken to bring the ball of the great toe down to a level with the others, as the tibialis anticus drawing from its point of attachment at the internal cuneiform and base of the first metatarsal, tends to draw it up and lessen the concavity of the arch which we are endeavoring to deepen. The cast having been completed, the lines of the plate are drawn as follows: the point A is made beneath the ball of the great toe, just short of its bearing centre, a point B, just short of the bearing centre of the heel bone, beneath its inner tuberosity, C, just above the head of the astragalus, a little in front and below the internal malleolus. These three points are now connected by a gradually ascending line from A, rising above the inner border of the foot, a little in front of the internal cuneiform bone, curving upward above the scaphoid, meeting at C, the line drawn upward from B.

¹³ W. J. Walsham. *Lancet*, January 26, 1884.

¹⁴ F. King Green. *Lancet*, December 26, 1885.

A curved line is drawn, three-quarters of an inch in length, whose centre corresponds to a point, D, on the outer aspect of the foot, just above and behind the tuberosity of the fifth metatarsal. The extremities of this line are now connected with A and B, and the shape of the plate is completed. (See Figures 3 and 4.) It should be made of thin-tempered steel accurately moulded on the cast. This plate presents the following peculiarities: It has the two bearing points, A and B; from them run the lever, D, leaving the balls of the toes free. This lever is caused by the slight flexion of the foot during the taking of the cast, for although in standing the entire outer border of the foot rests upon the floor, as may be seen in the imprint of a wet foot on paper, when it lies on its side, the medio-tarsal joint being flexed, this outer border is slightly raised, an interval of from one-third to one-half an inch intervening between it and a line drawn from the heel to the head of the first metatarsal. The plate being fitted to the cast in this position, it results that the foot in standing and walking will

inwards, as does the astragalus, and, being held up by the plate, it does not greatly change its position. It is sometimes so prominent in the cast that a depression is found in the plate to accommodate it.

The statement that a firm support under the arch is painful, because it will press on inflamed and sensitive tissues, or that it will press the internal plantar nerve against the astragalus is disproved by practice. If the extremities of the bones are sensitive and inflamed it is because they are out of place. If they can be even partially replaced the inflammation speedily disappears. In this connection I may mention one case, that of a robust young man who had been obliged to give up various positions on account of his feet, becoming finally almost entirely disabled. Two weeks after plates were fitted to him he obtained a position as porter in a hotel, where he has ever since carried trunks up and down stairs without pain or discomfort. It will, of course, be understood that if an overstrained arch be seen before permanent change has taken place it might, by rest, and a removal of the cause which produced it, be entirely relieved without the aid of an apparatus, but, unfortunately, in the class most subject to this affection daily labor is a necessity.

In an acute case, accompanied by pain, redness and swelling, the foot should be placed for a few days in a plaster bandage in an adducted and inverted position; afterwards rubbing and bandaging will bring it into condition for the plate. In old cases a forcible breaking up of adhesions and reposition under ether is sometimes necessary, I have not as yet seen a case where an operation seemed advisable, because I have found that the plate relieves the symptoms, and one would hardly be justified in operating solely on account of the deformity. The condition of the joints in old cases is not favorable to cure by operation, and if such laxity of ligaments existed as in an autopsy reported by Symington, where a finger could be placed between the astragalus and tibia, an ankylosis of the astragalus and scaphoid would scarcely relieve the deformity or symptoms.

It is evident that the hope of permanent cure must depend upon an increase of muscular power, the age of the patient, and the amount of permanent change in the foot being taken into consideration. The muscles which support the arch are principally those which run beneath the inner malleolus, the most important being the tibialis-posticus. The flexor longus pollicis from the position of its tendon, which runs in a groove on the posterior internal corner of the astragalus, and beneath the sustentaculum tali is of especial service in resisting the movements of the foot under weight. The calf muscle, which adducts as well as extends the foot, the tibialis anticus, which braces the arch, and the peroneus longus, which deepens it, should also be mentioned. As to gymnastics, the exercises recommended by Mr. Ellis can scarcely be improved upon.¹⁵ They are as follows:

"The patient when sitting, or better when lying down, should be directed to forcibly invert the foot, and flex the toes as much and as often as can be done; should learn as soon as possible to spring on tip-toe, sustaining the position a while, and then gradually sinking on to the heel; and in standing should bear part of the weight on the toes. The best exercise is to raise a weight by a cord running over a pulley, as one must grip the floor with the toes when pulling the



FIG. 3.

Drawn from a cast of a corrected flat-foot, showing the plate in position.

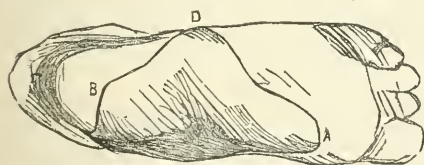


FIG. 4.

press this external arm solidly against the sole of the shoe; consequently, the tendency will be to press the internal flange more firmly against the weak portion of the foot, and upward and outward beneath it and the sustentaculum-tali at the moment when the tendency of the foot is to slide away from it. This pressure during the step has a tendency to throw the weight more on the outside of the foot, and to turn the toes in, resisting the exaggerated abduction. This tendency the patient should voluntarily assist, trying to reduce the angle of divergence, thus relieving the inside of the foot of a portion of the strain by bringing the line of weight back to its normal position. Well-fitting, laced boots of the Waukenphast pattern, with broad soles and low heels, should be worn. In some cases the weak ankle may be favored by raising the inner side of the heel and sole with a strip of leather. It should not, however, be carried beyond a point just behind the ball of the great toe. It might be supposed that the pressure of the plate against the prominent scaphoid would cause pain, but this does not seem to be the case. The scaphoid does not rotate

¹⁵ T. S. Ellis. Lancet, Sept. 26, 1885.

weight down; or he may turn a wheel whose handle is too high for the body. The patient should walk with a springy gait. The toes should reach the ground a moment before the heel. This can only be done properly in boots without heels."

I should add that prolonged soaking in hot water, followed by massage with manual flexion and inversion of the foot is often of service.

THE SUBSIDENCE OF DOUBTFUL TUMORS UNDER THE USE OF ALTERNATIVE MEDICINE.¹

BY DAVID W. CHEEVER, M.D.,
Professor of Surgery at the Harvard Medical School.

Cases of tumor are frequent where an operation is not indicated, either on account of poor health, of age, or of the extent of the disease.

The eleven cases which I shall briefly detail were all in patients of middle age, or older.

CASE I. An elderly lady of spare habit. Came from the western part of the State. She had had a small hard nodule near the nipple for some months. She came to me to have it removed; but when she arrived I found her almost demented from the use of large doses of bromide of potash. Her memory and mind were confused, and she was quite feeble physically. The medicine was discontinued, and she soon began to improve. Meanwhile the tumor had diminished and nearly disappeared, and no subsequent operation was required.

CASE II. Mrs. —, aged forty-two, florid and strong, was much disturbed mentally on discovering a lump in the breast. It was oval, movable, nearly painless, and about as large as an English walnut. It became tender, and apparently enlarged at her menstrual periods. The diagnosis of probable adenoma was made, and an operation was discouraged. The iodides of potash, of iron, and bromide of potash were taken for four months, and the lump slowly disappeared. The following year a lump quite similar to the other appeared, and she was encouraged to pursue the same treatment, and a disappearance slowly took place. Several years have elapsed, and she remains well. When she first sought my advice she was expecting an immediate operation.

CASE III. Mrs. —, aged sixty. Was operated on by excising the mamma for a small scirrhous tumor. After two years and a half of exemption, recurrence of an indurated lump in the cicatrix took place. She was put on the use of arsenic and iron for six months. At the end of that time she writes me that the disease makes no progress, and she continues the treatment.

CASE IV. A middle-aged man from the Provinces has a large mass of lobulated, and apparently glandular tumors in the neck, running down beneath the clavicle. There is no enlargement of the spleen or alteration of the blood. Operation would seem to be unjustifiable, as it would be impossible to remove all the disease. Treatment by the iodides and bromide was pursued for six months, with success. The glands subsided, and he remained well a year. Now they are recurring, and he comes again to resume treatment.

CASE V. Active, nervous business man, aged fifty years. A chain of glands, hard, but small, under the nipple, along the axillary border, and in the neck, also a few glands in the neck on the other side. No enlargement of spleen, no anæmia. Patient very anxious and restless. Thinks he is a doomed man. Operation not to be thought of. Bromides, iodides and iron largely. At the end of one month no increase; at end of two months decided decrease of glands. Still under treatment.

CASE VI. Stout hearty man of forty-five years, always well, a chlorine bleacher by profession. Six months before had swelling of cheek begin, with stiffness of lower jaw, pushing out of ear, some deafness, much ear and neck ache, tenderness jaw bone, and some of gums; teeth extracted without relief. Tried a great variety of treatment for months without effect. Now whole of mouth and gums healthy. Parotid largely swollen, jaw set, great pain; shining spots and small tubercular-looking abscesses, and many lumps over surface of parotid region; ear everted, neck somewhat cedematous, no deep sinuses, no bone to be felt; seropurulent discharge, but of small amount. Came from another State to seek surgery, and is all ready to have his jaw cut out. Operation discouraged. Treatment, bichloride of mercury and iron, constant application of ung. hyd. nitratis to parotid, occasionally iodide of potash, iodide of iron, and bromide of potash. Mercurial treatment long continued and carefully watched. Patient comes to me from Rhode Island regularly once a week for a year. Entire cure of all the symptoms.

CASE VII. An active and energetic middle-aged lawyer, with a bronchocoele as large as a lemon, covered with vessels, causing asthma and hoarseness, and interfering with active walking and speaking. Treatment, the iodides very largely for six months, with iron and some bromide. Subsidence of tumor, relief of voice and of breathing; able to go into court, etc. Relief, but not cure.

CASE VIII. At the age of seventy-two a lady who had noticed an enlargement of the lower abdomen, strained herself over a trunk in packing, took a fatiguing journey, and came to me with incipient and localized peritonitis.

Rest, fomentations and opium relieved the acute symptoms. An examination then made revealed a moderate-sized cyst in the lower part of the abdomen, which was thought to be ovarian. She remained in bed some months by my advice, as she was quite feeble, and was treated with iron, the iodides, and bromide, and careful feeding and nursing. The tumor diminished very positively, and she then got up and wore a swathe. Was easy and comfortable, and went home to Nantucket, and continued treatment. At this date, six years later, she considers herself well; and at the age of seventy-eight is quite active, and believes that her tumor is gone. I have not had an occasion to verify this by examination.

CASE IX. A man about forty years. An induration on the dorsum of the penis, in the corpus cavernosum, flat, fixed, not tender. No glandular enlargements. Complaints of painful erections. No gonorrhœa, stricture, or syphilis. Induration of very gradual and insensible formation, and of several years' duration. Six months of treatment by bichloride mercury and iron. Induration almost gone.

CASE X. An old gentleman, a college professor,

¹ Read at the meeting of the Surgical Section of the Suffolk District Medical Society, April 4, 1888.

married, of blameless life, began to notice at sixty-eight to seventy years of age, an induration on the dorsum of the penis in the corpus cavernosum, flat, fixed, painless. Only complaint is of persistent and painful erections, in the night. No enlarged glands. Only partial relief by treatment, which was by colchicum and iodide of potash.

I sent the patient to see Dr. Van Buren, who considered the disease to be gout.

CASE XI. A parallel case in every respect; same diagnosis and same result. It is fair to say that cases ten and eleven did not satisfy me by persisting a long time with the treatment.

By the courtesy of Dr. S. W. Torrey, of Beverly, I am permitted to add the following case:

CASE XII. "The patient had an abdominal growth in right hypochondrium, which appeared shortly after a croupous pneumonia of right lung, and which was attended by loss of strength, emaciation, very quick pulse, and a moderate amount of pain, especially on pressure, and on the patient's lying on the right side. The tumor increased in size after I first noticed it quite rapidly, and was a source of much discomfort. I think it must have been as large as a moderate-sized cocoon when I sent patient to you. I had proved by free purging that it was not fecal impaction, it evidently was not a cyst or an abscess, and I was inclined to think it was a malignant growth. You wrote me that you thought it "either sarcoma or carcinoma," and gave an unfavorable prognosis, and I feared you were right; but I put the patient upon iodide of potassium, beginning with doses of ten grains three times a day, and rapidly increasing it until she took 3iss at a dose. When she became very uncomfortable from the effects of such large doses I changed to correspondingly large doses of Fowler's solution, but marked diminution of the size of the growth took place under the use of the iodide only, so I finally kept her entirely upon that, until the tumor disappeared altogether, which happy event took place in about three months. The growth was not to be found again for, I think, about three years, when it appeared in the same location, and was about as large as a billiard ball when my attention was called to it. This time the general condition of patient was much better, and the tumor disappeared more rapidly under the use solely of large doses of iodide. At this time I found a small hard round growth just under and adherent to the skin of the right side of the neck, which looked like the nodules found in cases of multiple sarcoma, about as large as a good-sized pea. This growth became somewhat smaller while the abdominal growth was disappearing.

"Since then there has been no reappearance of the abdominal growth, as I was assured to-day by the patient herself, and the general health is excellent. The growth on the neck is twice as large as it was three years ago, but is the source of no discomfort. If ever I am allowed to remove it I shall feel greatly interested to learn its histological characteristics as possibly furnishing information as to the nature of the abdominal growth."

There were neither the history nor the other appearances of syphilis in any of these cases. In most of them an operation would have been unjudicious. The remedies were given in the following doses:

Bichloride of mercury, $\frac{1}{2}$ to $\frac{3}{4}$ of a gr., daily; tinct. ferri muriatis, gtts. xxx, daily; iodide of iron, iii to vi grs., daily; iodide of potash, grs. xv to xxx,

daily; bromide of potash, grs. xx, daily; liq. potassæ arsenitis, gtts. ix to xv, daily, omitting one week in each month.

In the course of my practice I have *once* seen a case where no arsenic could be tolerated, and *twice* where the iodides could not be borne. I have had no success with chian turpentine. I am now trying chloride of lime (an old remedy) for glandular enlargements.

Clinical Memorandum.

A CASE OF CANCER OF THE PROSTATE GLAND.¹

BY H. H. A. BEACH, M.D.,
Surgeon to the Massachusetts General Hospital.

THE rarity of this disease and the absence of symptoms usually associated with it make the case from which the specimen was taken an unusually interesting one. Especially so in connection with the question of prognosis in cases of senile hypertrophy. In its early history there is nothing inconsistent with the usual course of chronic prostatic enlargement, and at no time from the first has the patient presented symptoms that are not commonly exceeded by simple prostatic enlargement; while, on the other hand, extreme pain, hemorrhage, and serious obstruction to the flow of urine have been absent. The diagnosis of malignancy was based on the rapid growth of so large a tumor and its location, independent of the absence of the more serious and usual symptoms.

The subject was sixty years old, and had always enjoyed good health. About two years ago he began to pass water more frequently than usual, and to have some pain at the end of micturition. Both symptoms have increased, until now the patient passes urine every hour. For the past six weeks he has taken no solid food, as it caused almost constant retching. He was emaciated and anæmic.

Upon examination there is seen just above the pubes a rounded, firm tumor the size of an orange projecting above the level of the abdomen, and suggesting a full bladder. By the rectum a large non-lobulated swelling occupies the usual situation of the prostate gland, bulges forward into the rectum, and extends laterally from the tuberosity of one ischion across the pelvis to the one of the opposite side. By palpation the growth seems to be continuous with the tumor over the pubes.

Urine, color pale; specific gravity, 1007; alkaline reaction; slight trace of albumen. The sulphates were increased slightly; other urinary salts diminished. No sugar or bile pigments. The sediment contained much free oil, and epithelium like that from the mouth or bladder; little blood.

During the patient's stay in the hospital he was given such diet as the stomach would tolerate, and his bladder allowed to rest undisturbed by operative interference of any kind.

Dr. R. H. Fitz, who performed the autopsy has kindly consented to describe the post-mortem appearances.

REMARKS BY DR. FITZ.

The specimen is certainly one of the largest prostates that one has the opportunity to see. The mass

¹ Case related and specimen shown at the meeting of the Surgical Section of the Suffolk District Medical Society, April 4.

which is here, and which represents the bladder and prostate, when it was removed was rather larger than the two fists.

The enlargement is situated more especially in the anterior wall of the bladder, as well as at the fundus. The extension of the disease has been mainly in the sub-mucous, muscular and sub-peritoneal coat, as well as in the para-eystic tissue between the symphysis and bladder, so that the anterior wall of the bladder, after it was taken away from the pubes, was, in its fresh condition, more than an inch in thickness. The cavity of the bladder, which is represented here in the posterior portion of the specimen, would hold about two ounces at the time the specimen was removed. The growth extends in the form of nodules, immediately above the posterior portion of the prostate, but the extension of the disease had been rather in the posterior than in the anterior portion of the gland. It has involved the seminal vesicles. These lie flattened in the mass of cancerous tissue. The disease, has extended out into Douglas's fossa, and covers the peritoneal coat of the bladder, over a considerable space, with a series of nodules. The right ureter was dilated to the size of the fore-finger; the left was also dilated, but to a less degree. Both pelves were dilated considerably, and the kidneys were contracted, with a certain increase of interstitial tissue. The disease is a cylindrical-cell cancer.

It extended, as in the case of rectal cancer reported by Dr. Warren, along the lymph glands, but was also continued into the chest. There was a patch upon the peritoneal surface of the stomach; there were several patches on the pleural surfaces; the disease of the latter evidently having extended rather through the diaphragm than by embolism of the lungs, since it was seated upon the parietal layer. There were also evidences, to a greater extent than in Dr. Warren's case, of transfer through the portal vessels, there being several nodules in the liver, some of them as large as English walnuts. It certainly seems extraordinary, in the light of the obstruction that was occasioned, that there should have been no evidence of any considerable diminution in the quantity of urine, and no evidence of an uræmic condition.

Reports of Societies.

THE ONE HUNDRED AND SEVENTH ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY, JUNE 12TH AND 13TH, 1888.

So far, at least, as weather went, there were never, in the history of the Society, two more enjoyable days than those on which occurred the one hundred and seventh anniversary of the State Society. The attendance was larger than usual, possibly on account of interest in the change in the methods of conducting the dinner, but it was also larger than common when it had no other object in view than to make an audience for the essayist of the preliminary day, and was a welcome increase in that direction. The business and literary exercises were held as usual, in the large hall of the Institute of Technology building, while the dinner was served in the Hotel Vendome on Commonwealth Avenue.

The usual invitation had been extended to the mem-

bers of the Society to avail themselves of the clinics and operations of the Boston hospitals, and the wards and amphitheatres presented the sight which is seen but once a year. At the

CITY HOSPITAL

the following operations were performed: Double cataract (small-flap operation), by Dr. H. W. WILLIAMS; intubation for diphtheria, excision of hip in boy of seven years for hip-disease, operation for extensive hare-lip, and operation for iliac abscess, by Dr. GEORGE W. GAY; hygroma of neck in a young child, by Dr. W. P. BOLLES; amputation of thigh at junction of middle and lower thirds for chronic disease of knee, by Dr. H. L. BURRELL. At the

MASSACHUSETTS GENERAL HOSPITAL

a large number of cases were shown and operations performed. Dr. H. A. BEACH operated upon a tumor of the upper jaw of three years' duration, which formed a swelling the size of a lemon, evidently the expanded wall of the antrum. There was no protrusion in the mouth or pharynx and no nasal obstruction. Firm pressure over the tumor gave the sensation of egg-shell crackling. From an exploratory puncture and from a free opening into the cyst between the lip and gum a thin, chocolate-colored fluid escaped, containing glistening crystals of cholesterol. The tumor wall collapsed, and the cyst cavity was packed with iodoform gauze. Dr. Beach then showed a patient with an unusually good result following fracture of the patella, due to the method of using coaptation splint, which he has used in all cases of fractured patella for the past eight years with most satisfactory results. He also showed a case of gun-shot wound of abdomen, where there had been emphysema at the entrance wound, anesthesia of surface of thigh from injury to the anterior crural nerve, and probable penetration of the peritoneal cavity, which had recovered without a symptom under purely expectant treatment. He also showed a case of recovery after removal of very extensive cancerous disease of lower lip, the wound having been dressed with a solution of iodoform in collodion. Dr. Beach also commended quills for drainage, as they avoid the collapse of rubber and the holes they leave close more quickly.

Dr. JOHN HOMANS removed a cancer of the breast from a woman of sixty-five by the usual elliptical incision, leaving the axilla untouched, and also a cancer of the breast from a woman of thirty-nine, the sixth of her family to develop mammary cancer. Dr. Homans also operated for the cure of a left-sided hydrocele and a right-sided hæmatocele in a man of forty, by laying open the sac and stitching the walls of the sac to the edges of the wound, which were in turn approximated with catgut. He also removed a fatty tumor of the buttock of seven years' duration. Before all of these operations the parts to be operated on were thoroughly scrubbed with a bath mitten put upon the hand and dipped in a solution of mercuric bichloride. This insures a thorough cleansing of the parts that an ordinary brush fails to give.

Dr. CHARLES B. PORTER operated for the relief of a hip dislocated in wrestling seven months ago. The patient kept the thigh flexed on the pelvis almost to a right angle, the knee bent, and got about with crutches. Under ether Dr. Porter broke down the old adhesions, and after some difficulty succeeded in reducing the dis-

location. Dr. Porter also operated, by amputation at the point of election, with anterior and posterior flaps, for relief of repeated ulceration and pain in stumps of toes removed thirteen years ago for gangrene.

DR. JOHN C. WARREN showed results of operation in cases as follows: Excision of upper jaw for sarcoma, the scar being hardly perceptible and the patient's voice entirely restored by an ingenious dental apparatus replacing the teeth and filling the molar cavity. Inguinal colotomy for rectal cancer, done three months before, with great gain in flesh and strength and no apparent extension of the rectal neoplasm. Radical cure of umbilical hernia, the size of a cocoanut, and of many years' duration, with recurring symptoms of incarceration, followed by complete relief and no apparent sign of return. Radical cure of double inguinal hernia of large size, in child eleven years old.

DR. BEACH showed cases as follows: Cancer of the palate destroyed by the thermo-cautery under cocaine; chronic appendicitis with large abscess, recovered after incision; removal of testicle for sloughing sarcoma succeeding injury; case of popliteal aneurism rapidly decreasing in size and solidifying under Teufel's treatment; case of compound depressed fracture of skull without symptoms, where trephining had not been done, the wound being left open and packed with iodoform gauze; two cases of caries of tarsus where the diseased bone had been removed by the burr drill as the dentist treats a carious tooth, thus avoiding injury to tendons and vessels; case of fracture of internal condyle of femur into the joint (with backward dislocation of tibia, smashing of patella, and marked swelling of thigh), treated by a modified Desault's apparatus, with resulting disappearance of swelling and some motion; case of compound forward dislocation of ankle reduced and treated antiseptically.

DR. M. H. RICHARDSON amputated a finger without pain under cocaine anaesthesia, ten minims of a four per cent. solution being injected and a ligature applied. He showed a case of sarcoma of shoulder-joint, and of ununited fracture of the humerus, where the wound had healed by first intention and bony union was apparent.

A patient was seen from whom Dr. F. B. HARRINGTON had removed a few weeks before a large portion of the frontal bone for compound comminuted fracture. The man was delirious immediately after the injury but all mental symptoms have disappeared. A marked depression exists in the frontal region, where there is decided pulsation.

Photographs were exhibited of cases before and after operation, which are preserved with the hospital records. At the

CHILDREN'S HOSPITAL,

the following operations were done: osteotomy for rachitic curve of tibia and fibula; manual osteoclasis for curvature of forearm; and an operation for caries of temporal bone. Several orthopedic cases were shown, and a case of laparotomy for tubercular peritonitis.

FIRST SESSION.

Soon after two o'clock on Tuesday afternoon, the President of the Society, DR. THOMAS H. GAGE, of Worcester, called to order a larger number of Fellows than are wont to assemble for the exercises of the first

day, and the audience multiplied during the afternoon. Dr. Gage began the exercises at once by calling for the first paper on the programme,

PRIVATE MENTAL SANITARIA AND THE INEBRIETIES, by AUSTIN W. THOMPSON, M.D., of Northampton.

Dr. Thompson stated that his proposition was that the inebrieties, so-called, could be well and properly treated in private lunatic hospitals. It was now the custom to say that inebriates should not be taken to State or public insane hospitals, but that they should be kept in separate institutions designed for the purpose. No doubt it would be well to have one or more special receptacles for certain classes of inebriates, on account of their bad effect upon other insane; while, on the other hand, certain classes of inebriates need, themselves, to be protected from contact with the insane. Inebriate asylums are not new. Dr. S. B. Woodward, of Worcester, long ago claimed that inebriety was a disease, and that it should be treated in special hospitals; and there are now some signs of this coming to pass. The ideal place for inebriates would be the private, rather than the public asylum, when ideally superintended. There is needed the golden mean between the somewhat sterile distance of the public superintendent from his patients, and the sometimes weakening contact of the private superintendent with his patients. Honesty is the best policy in dealing with inebriates, as with other insane. It is best to tell the inebriate plainly that he is insane and is under restraint.

DR. EDWARD COWLES, Superintendent of the McLean Insane Asylum at Somerville, said that the treatment of inebriety was a burning question of today. Experience continues to affirm the objections to its treatment in public asylums, there being conditions in the relations of inebriates to other insane that make it undesirable. The rule at the McLean Asylum is to refuse them, though they are occasionally taken. They are unable, when recovered from the early effects of the disease, to accommodate themselves to the *genius loci*. While it was his opinion that the State and public hospitals are not the places for inebriates, he was doubtful whether private asylums were suitable either. The proportion of inebriates who can command such treatment is small, and few have mental force enough to subject themselves long enough to treatment. For the generality of inebriates, the best place is a special hospital under the care of the State, with commitment for definite periods. While the tendency of the time is toward private retreats, it is true that in some ways public hospitals are better.

DR. WALTER CHANNING, of Brookline, agreed with the previous speakers that the treatment of inebriates in public hospitals was a failure ever since the passage of the recent law. The latter is a slight gain to the friends, but not to the patient. The effort, last year, to get a special institution established by the State failed, but it is the best plan. The value of the private hospitals is only in degree. The increased demand for private insane asylums is due to the increase of the insane. There are needed for the treatment of inebriates a definite plan and system, which cannot be obtained in private hospitals. Some patients can be well treated only in the large institutions.

DR. C. P. BANCROFT, of Concord, N. H., Superintendent of the New Hampshire Asylum for the In-

sane, agreed with the previous speakers that public asylums were unfitted for inebriates. Those taken at Concord were invariably difficult to classify, and demoralizing. Special legislation and institutions were needed for them. Inebriates were naturally lazy, and the enforced idleness of large asylums was bad for them.

The next paper was entitled

THERAPEUTIC NIHILISM,

by MAURICE D. CLARKE, M.D., of Haverhill.

Dr. Clarke began by saying that it was charged by some that the tendency of modern medical thought in this region, at least, was toward a do-nothingism in the treatment of disease, for which they had coined the phrase therapeutic nihilism. It was doubtless true that the vast majority of people, laity and physicians alike, believed in energetic medication. Haphazard therapeutics was favored also by the zeal which characterized physicians, and which led them to endeavor to use all the newly found drugs for the treatment of all known diseases. The tremendous increase in the number of physicians annually turned out by the medical schools, too many of whom offered easy passage to a degree, also tended in the same direction, since it was inevitable that men of small general education and without scholarly instincts should handle drugs and treat diseases like mechanics and tradesmen. In the encouragement of this state of things, it was well known that the Harvard Medical School had no share, though it might possibly lack in teaching the practical side of medicine. The treatment of disease being very largely a matter of temperament, it was natural that men should differ in their attitude toward therapeutics. Those who are not enthusiasts in active medication would deny the charge of nihilism if it meant an idle fatalism, but would admit that they held at once to a reasonable faith and an honest scepticism, and to an endeavor to "prove all things, and hold fast that which is good."

Dr. FRANCIS H. WILLIAMS, of Boston, Assistant Professor of Therapeutics in the Harvard Medical School, said that the phrase, experimental therapeutics, which had been used by the essayist, was susceptible of different interpretations. To its proper study more attention should be given, as it was in the large laboratories of Germany. One new drug suggests the usefulness of others, and careful experiment determines their value. Drugs recommended by the experiments of large pharmaceutical institutions are worthy of trial by the profession. We should not expect too much of drugs, or expect that one drug will prove of value in too many diseases. Prescriptions should be made much simpler in order to obtain the distinct effect of one drug.

Dr. E. P. HICKS, of Newburyport, thought it was the tendency of the younger physicians to have unbounded confidence in drugs, while, as they grew older, they were more inclined to follow the advice one of his elders gave him in a case he had unsuccessfully dosed, and "give nature a chance." He thought there was not so much polypharmacy as formerly. He was in sympathy with most of the views of the paper, but would substitute for nihilism the phrase "intelligent expectancy." There will always be symptoms demanding treatment. As regards the future of therapeutics, much might be expected from the germ theory of disease when we know more about it.

Then followed a paper upon

UTERINE DISPLACEMENTS AND THEIR INFLUENCE ON THE GENERAL NERVOUS SYSTEM,

by FRANCIS H. DAVENPORT, M.D., of Boston.

Dr. Davenport was inclined to believe that the tendency of the times was towards a surgical treatment of displacements. There was undoubtedly a normal position of the uterus, though not a fixed one like that of the spleen and kidneys. A respectable minority of physicians say that displacements do not cause symptoms. In a given case there co-exist uterine displacement and neurasthenia, and the question is which is antecedent, and whether constitutional or local treatment is demanded. There are bigoted adherents of both views. The general practitioner is likely to err in one and the specialist in the other. Neither extreme is correct. It is quite likely, however, that nervous symptoms are more likely to follow affections of the female genitals than other disorders. Neurasthenia occurs more often between puberty and the menopause. Of the displacements, the backward are the more serious. Anterior displacement, pure and simple, is rare. Retroversion is more common, and may exist, if less than ninety degrees, without many symptoms. Retroflexion is the most serious. Prolapse and procidentia are very common and serious. The milder forms are not given so much attention, and often go undetected on account of examination in the dorsal position. Prolapse, adhesions, and flexions are three important conditions in displacements. Adhesions impair mobility and cause pain. Flexions interfere with the uterine circulation and displace the tubes and ovaries. Many displacements are hard to cure. Those without adhesions or complications may often be reduced in one sitting under ether. Others will need the slower treatment of packing. Obstinate retroflexions may need operation.

Dr. G. H. LYMAN, of Boston, had been struck by the change of opinion in the last ten years as to the general importance of uterine lesions. Forty years ago the uterine specialist had no thought of general treatment. Then the reverse opinion got ground, and now we are swinging back to a mean. There occurred now and then cases of long standing disease cured at once by uterine treatment. He cited a case of chorea of three and-a-half years standing cured at once by replacement of a retroverted uterus. The dependence of nervous disease upon uterine lesions was too often lost sight of. Many cases of displacement get no benefit from local treatment, and many none from general.

The next paper was entitled

THE MODERN PRACTICE OF SURGERY,

by OTIS K. NEWELL, M.D., of Boston.

Dr. Newell began by saying that it had been thought in other days that surgery had reached its height, and it was natural to have the same feeling to-day. The age was one of wonderful progress, of enormous facilities for investigation, and rapid means of intercommunication, and it required much study and time to keep up with the advance of knowledge. Progress in medicine was due to the special worker, and not to the jack-at-all-trades. General medicine and surgery should be separated, and none should be surgeon without special experience. It may be said that so-called country practice demands the general practi-

tioner, but he should treat surgical emergencies only, and leave surgery in general to others. It is better to separate them, as a successful combination of physician and surgeon is not possible. How would we do if we did as we would wish to be done by? Would we want a man without special experience to care for us if we were suffering from strangulated hernia or perforated intestine? As to antisepticism, the grand work of Lister is now so well established that no more note ought to be made of its use in an operation than of the use of an anæsthetic. It is indisputably proven that he who operates without asepticism should be held responsible for the results of his neglect. Its use has made possible a vast number of operations, and has also had the disadvantage of creating a tendency to operate. The speaker then passed on to consider the relation of legitimate medical practice to quackery. By a strange perversion of things this State is proverbially known as a "hot-bed of quackery." In medicine, unlike any other science, the quack is only readily detected by him who is well versed in the art itself, and it, therefore, devolves upon the physician more than any one else to aid in his exposure and extermination. Boston is full of well-known quacks legalized by the State. If the united effort of this society cannot soon succeed in establishing the most effective laws for the quick suppression of such vice, there is one way in which it can be done, and that is by the education of the public in general medical, hygienic, and sanitary affairs. In other communities this is already being done with great effect, and here, in spite of the insulting lack of legal support, the medical profession is doing much in the same direction. In the course of time we might hold our meeting during several days in the Mechanics' Association building, and, in addition to the regular business, which promises now sectional work, have a large educational exhibit corresponding to such as the London "Healtheries" and the Vienna cooking exhibition, to which the public could be admitted, and there be taught to realize just what the regular study of medicine is, and the relation which homeopathy, electrophathy, psychotherapy, and every other medical parasite bears to the great body of modern medicine. Such an exhibit where hygienic systems, methods of food preparation, cooking apparatus, sanitary appliances, and all the various surgical and medical apparatus, with all the rest that bears upon the subject might be found, could be seen with great interest and profit.

The Society then listened to a paper, entitled

A STUDY OF PHTHISIS AND PNEUMONIA IN MASSACHUSETTS; STATISTICAL AND CLIMATOLOGICAL,

by W. EVERETT SMITH, M.D., of Boston.

This paper dealt with a mass of statistics, and was illustrated by charts, and embodied certain conclusions. Consumption is less prevalent in the hilly districts of Massachusetts than on the sea-coast. The average death-rate from phthisis was less in the whole State. Comparing towns, phthisis is regularly, but, comparing counties, irregularly distributed.

Adjoining towns vary widely as regards the death-rate from both pneumonia and consumption. Near the coast and in the eastern counties the rate of mortality from pneumonia is less, while towards the western part of the State it is greater, in some parts even greater than that of phthisis. The fatality from pneumonia appears to be increasing, and that of phthisis

lessening. The distribution of pneumonia is in direct opposition to that of phthisis. The impression that the fatal period in phthisis is from twenty to thirty appears to be erroneous. Females are slightly more liable than men to die from phthisis, and slightly less liable to die from pneumonia. As regards climate, the absolute amount of humidity does not appear to be as important as the relation of the amount of humidity to the saturation point. The greatest mortality from pneumonia and phthisis both occurs in the months of the greatest variability. Massachusetts has a remarkable diversity of contour and soil. There are localities in it as favorable to the cure of phthisis as the so-called health resorts. The prevailing wind is not the east, but west and north-west, according to the signal office. The northern and southern shores of Cape Cod differ markedly in climate on account of tidal currents. No conclusions can be drawn as to the relation of phthisis to soil moisture, because, according to Professor Shaler, no exact statement can be made as to the soil structure of the State.

The last paper of the day was entitled

THE TREATMENT OF HYPERTROPHY OF THE PROSTATE WITH ESPECIAL REFERENCE TO OPERATIVE MEASURES,

by FRANCIS S. WATSON, M.D., of Boston.

Dr. Watson said that when palliative measures of the ordinary sort failed to give relief, it was time to operate, and the operation might be palliative (drainage by the perinaum or above by pubes) or radical, which included, according to the location, and whether it was mere cutting or removal of tissue, urethral perineal, or supra-pubic prostatotomy or prostatectomy. The question of where to operate depended on the perineal distance (the distance from the incision in the perinaum to the farther part of the obstruction), whether the hypertrophy was medium or lateral, and the size of the bladder. The most dangerous thing is to merely puncture and drain, because urine escapes down the sides of the tube. In two-thirds of the cases the perineal operation is possible and safest, but no one method is to be preferred to the exclusion of all. The results are not brilliant, but have a fair measure of success and justify the attempt.

Dr. Watson's paper was illustrated by stereopticon pictures of thirty cases of all varieties of hypertrophied prostate. They were made from specimens by the photogravure process and were remarkably clear and natural.

EXHIBIT.

In the adjacent building belonging to the Institute was held under the supervision of the committee of arrangements a very large and varied exhibit of pharmaceutical wares, medical books and instruments, electrical appliances, foods, drinks, operating chairs, etc. Dr. William L. Richardson loaned to the committee a collection of aged and well-worn obstetrical instruments of varied shapes and patterns. The Harvard Medical School also allowed part of its instrumental collection to be taken from its shelves, included in which was an operating case which belonged to Gen. Warren of the Revolution. Dr. Thomas Dwight exhibited a large model of the arm done in plaster, at his suggestion and under his direction, by Dr. John C. Munro, cut in slices to represent frozen sections, made and painted from nature, and also some large models of bones, all finely conceived and executed.

CENSORS' CONFERENCE.

The annual conference of Censors was held Tuesday afternoon at the medical library, there being five conscientious censors who shut themselves out of the general meeting, for the purpose,—three from Essex North, one from Norfolk, and one from Suffolk. Dr. R. C. Huse, of Georgetown, was chosen Chairman and Dr. H. F. Adams, of Newburyport, Secretary. Those present talked over methods of examination of candidates.

(To be continued.)

SUFFOLK DISTRICT MEDICAL SOCIETY.
SURGICAL SECTION.

G. H. MONKS, M.D., SECRETARY.

MEETING, Wednesday, April 4th, the Chairman, Dr. J. C. WARREN, presiding.

Dr. H. W. CUSHING showed a specimen of a

FOOT CRUSHED BY A LOCOMOTIVE,

which well illustrated the severity of these injuries.

In reference to a specimen which Dr. R. H. Fitz subsequently demonstrated, Dr. J. C. WARREN, who had operated upon the case, said: The patient came to the hospital a few weeks ago, with cancer of the rectum, forming a rather close stricture, about two-thirds of a finger's length above the anus. The operation that was performed for relief was inguinal colotomy. I have done this operation twice this winter in preference to lumbar colotomy; first, on account of its greater facility, and secondly, with the idea of bringing forward the posterior wall of the bowel as far as possible to simulate the spur which is found after sphacelus of the gut in strangulated hernia, and in that way forming a valve which will prevent the passage of faeces below the point of the artificial anus.

This was successful in the first case in which I performed the operation. The patient is now alive and well, and has gained flesh since the operation. He is quite a young man, twenty-five years of age, and when he presented himself at the Hospital a few weeks ago, seemed much better than when he left.

The case from which this specimen was taken was a woman advanced in years. She lived but a few weeks after the operation, and died from exhaustion as much as from any other cause. As far as the artificial anus goes, the spur was not successful in acting as a valve; as considerable faecal matter was found below the point of the anus, as well as above. The plan was to unite the skin and peritoneal edges of the wound with the posterior wall of the gut instead of the anterior wall of the gut. That leaves the anterior wall, and the gut generally, well out of the wound, and exposes a considerable surface, but that appears to be no disadvantage, for, as the wound cicatrizes, the surface is gradually covered, and we have no inconvenient hernia resulting.

Dr. R. H. FITZ: The two specimens which I have here are the rectum and that portion of the colon which shows the artificial anus. The interest in the rectum lies in the fact that the ulcer is a broad flat ulcer, and in the present condition of the specimen shows very little deformity. There is evidence of scarcely any stenosis in connection with these ulcers, which extend down to within nearly an inch of the

anus. But, though there is so little alteration in the mucous membrane, the disease extends into the tissues around the rectum, and involves the peritoneum. There was also extension of the disease into the vagina, where there was a large cancerous ulcer of the posterior wall just below the cervix. Extension of the disease upward took place mainly through the lumbar lymph glands, which were very much enlarged and indurated along the course of the spine. There was also an extension into the liver to a certain extent.

A peculiarity of the specimen is the fact that the distended portion of intestine is below the artificial anus, between that and the anus. The portion which lies above the artificial anus is not particularly enlarged, but in both tracts, above and below the artificial opening, there was a large number of scybala, quite large and hard, showing that incomplete emptying of the intestine occurred through both the openings. So far as the appearance of the wound is concerned, it is apparently in a satisfactory condition. The skin and mucous membrane are not entirely united; there is a granulating surface between the two; at the same time the adherence is a very strong one. I would like to ask what the symptoms were that called for the operation.

Dr. WARREN: The stricture was a very narrow one, and it was evident that obstruction would very soon take place. The patient came into the Hospital to have something done for her relief, and it seemed to me that that was the only operation to relieve her.

Dr. FITZ: The appearance of the specimen would suggest that the stricture was rather due to causes outside the rectum than to any constriction, properly speaking, of the canal. It was rather a compression from disease outside than a contraction of the wall.

Dr. MAURICE RICHARDSON: In my experience the inguinal is very much better than the lumbar operation, and I do not think I shall ever make the lumbar opening again. The inguinal operation is much less difficult, the bowel more easily and surely found, and the artificial anus much more easily cared for by the patient. At the autopsy in Dr. Warren's case I was interested in observing that below the artificial opening the rectum and sigmoid flexure were greatly distended with faeces, and that apparently there was no longer any stricture caused by the disease. There was certainly not complete obstruction of the rectum although at the time of the operation such a condition had existed. I had a similar experience during the last summer, after Littré's operation. In this case there was complete obstruction of the rectum from malignant disease, for which I made an opening through the inguinal region on the left side. When the bowel was opened the patient was in *extremis*, suffering most intense pain, with abdomen very much distended, and the usual symptoms of complete obstruction. Relief followed immediately. Later the impediment in the rectum disappeared and she had quite free passages from the natural opening. Meanwhile the artificial anus became almost entirely closed, there being but a very minute opening left. In the course of the winter the rectum became again obstructed and I was obliged to reopen the groin, which I did with a scalpel through the cicatricial tissue by which the opening had become closed. She was again immediately and entirely relieved.

Now, there is no doubt, I think, in Dr. Warren's

case, which I had an opportunity of examining, that there was a very extensive stricture, which I think obstructed decidedly the passage of feces, and which made the operation necessary. In my case the same thing was true, only the symptoms were more severe. In both cases the stricture apparently disappeared only to return again. I don't think that one who has done inguinal colotomy will ever do the lumbar operation again.

DR. CHEEVER: Was this done through the peritoneum, or behind?

DR. WARREN: In the groin, through the peritoneum. A very simple operation. The bowel is easily recognized by its longitudinal fibres and by the little tabs of fatty tissue which are hanging from it. It was also recognized in this case by the large masses of hardened feces which were there. There is danger in lumbar colotomy of mistaking the duodenum and jejunum for the descending colon. Of course, the opening was not cut until two or three days after the primary operation. I was present at the time the bowel was examined — Dr. Fitz was not there, I believe — and I noticed one peculiarity about the contents. There was considerable fecal matter just below the artificial anus, which had passed over from time to time probably, and had not been able to find an outlet through the rectum. Above, as far as the transverse colon at its middle point, there were no feces and the bowel had contracted to the size of the small intestine. Very small indeed, it seemed to be. At the middle of the transverse colon was a large hardened ball of feces, and the ascending colon was enormously distended, but not the small intestine. That had been characteristic of the woman's condition from the time of her entrance, masses of hardened feces coming down at intervals, and lodging, apparently, here and there, and gradually moving onward.

DR. FITZ: I would like to put in one word about a result of Mr. Treves' investigations. He finds the name of the person connected with the operation of inguinal colotomy should be spelled Littre, with two "t's" and with no accent. Most of us have been brought up with the idea that it is Littré.

DR. H. H. A. BEACH related a case of

CANCER OF THE PROSTATE GLAND;¹

and Dr. FITZ, who had made the autopsy, demonstrated the specimen.

DR. WATSON: It may be interesting to mention two cases that I recently came across in the literature of the subject; for the moment I forget where they are quoted. In each there was a very large tumor of the prostate, one the size of a fetus' head. An attempt to excise it was made with the successful result of removing the tumor, and also the patient. *Neither* of these patients had urinary symptoms in consequence of the growth, and it is the rule that in all hypertrophies of the prostate the lateral lobes may be hypertrophied to a very great extent without creating any very marked urinary symptoms, whereas a very small enlargement of the so-called middle lobe will produce very decided symptoms.

DR. FITZ: It might be said, in relation to hypertrophy of the lateral lobes of the prostate, that almost invariably there is a very marked degree of hypertrophy of the muscular wall of the bladder. In this case in spite of the size of the tumor, the

bladder was able to empty itself, there being no especial obstruction to call for hypertrophy.

DR. WATSON: I would like to ask Dr. Fitz if it has not been his common experience that people with a very small middle lobe enlargement are apt to have as great thickening and trabeculation of the bladder, as where a much greater lateral hypertrophy has occurred.

DR. FITZ: Certainly — decidedly.

DR. MAURICE H. RICHARDSON reported

A CASE OF NEPHROGRAPHY.²

DR. D. W. CHEEVER said: I would like to ask whether the sewing up of the kidney interfered with its function at all.

DR. RICHARDSON: Not at all. There was no change in the urine. The stitches were through the capsule, and care was taken not to harm the kidney.

DR. BEACH: I would like to ask Dr. Richardson whether he sewed the edge or the flat surface to the wound.

DR. RICHARDSON: The flat surface. It was a very difficult operation indeed. The kidney was very movable, and it was almost impossible to get the needles through without tearing the kidney.

DR. BEACH: In reference to the kidney with the hæmorrhage, I remember seeing a case a number of years ago, and just as I was making arrangements for the operation the patient had a hæmorrhage and died. She was in a very weak anæmic state at the time. At the autopsy the kidney was found to be malignant, and completely enclosed by the capsule. It would have been a first-rate case for removal.

DR. RICHARDSON: I would like very much to hear the opinion of the gentlemen upon this second case.

DR. WATSON: I would like to ask why Dr. Richardson included all the tissues with his sutures. Would it not be quite as well to sew the kidney and muscular tissues together, and then close the wound with a separate suture?

DR. RICHARDSON: I think it would be so. I would do that the next time. I didn't follow the usual rule for the operation, which is to stitch the kidney and then stuff with iodoform gauze and let it heal up by granulation. Some men say that all that is necessary is to cut down to the kidney, and not sew at all, but let it become adherent. I forgot to say that in this case it seemed to me that the kidney was covered with peritoneum; that we went into the peritoneal cavity.

DR. CHEEVER: If you went into the peritoneal cavity, you might as well have gone in front, I suppose.

DR. RICHARDSON: It is impossible to fix the kidney in its proper position by the anterior incision.

I should say that there is no question that the proper incision for sewing is behind; for removal, the anterior operation is better.

DR. CHEEVER: Did I understand that the gentleman in New Orleans put a tape through the kidney?

DR. RICHARDSON: Dr. Greenville Dowell put a needle and seton through the movable kidney. The seton was retained three months, and gave some relief, but it caused a persistent discharge. He introduced the seton a second time, without giving as much

¹ See page 621 of the Journal.

² See page 593 of the Journal.

relief as before. The patient afterwards became crazy, and went to an asylum. At the autopsy the kidney was found to have a scar in it two and a half inches long. This report is from a copy, in an English journal, of a report of the case in the *New Orleans Medical and Surgical Journal*, for August, 1879.

DR. D. W. CHEEVER read a paper on

THE SUBSIDENCE OF DOUBTFUL TUMORS UNDER THE USE OF ALTERNATIVE MEDICINES.³

DR. E. O. OTIS said: I would say, in regard to the chloride of lime, that I constantly and persistently used it for three or four months, two winters ago for large glands of the neck, and I could see no results.

DR. RICHARDSON: Dr. Beach will remember a case that he transferred last summer to me, of a woman with a tumor of the right breast, which he had been treating. I think with iodide of potassium, under which treatment the tumor disappeared entirely. She came back in a few weeks with a tumor of the left breast. We tried the same medicine, but the tumor continued to grow. Finally, I excised it, and the microscope showed it to be malignant.

DR. BEACH: She had the appearance of chronic inflammation in both breasts, if I remember aright. It disappeared in both, and this growth then appeared on one side and was removed.

DR. RICHARDSON: I think that was an extreme case, because there seemed every reason to believe that the processes of the two breasts were alike. One disappeared under treatment, and the other did not, and it was found under the microscope to be cancer.

DR. THOMPSON: The following case occurred to me a dozen years ago: The patient was a German woman, some forty-five years of age. There were four tumors, which distended the abdomen very much, and there was a good deal of disturbance in the digestive function and a very sallow complexion. The case was one that promised very little prospect of relief under treatment. I pursued a course very similar to that which has been suggested by Dr. Cheever. I resorted to alternatives. Bromide of potassium was one of the remedies that I used considerably, and also some preparation of calomel and tonics.

The tumors, after the course of a month, began to diminish in size, and in a year they had disappeared. The patient had always had poor health, had never had any children, and there was a good deal of disturbance from that time onward, and as long as she lived, which was about a dozen years. The tumors never returned, and she never complained of any serious trouble with the abdomen subsequently, although there was a morbid state of the secretions of the liver, and the digestive function was very imperfect and irregular while she lived.

DR. BEACH: I would like to ask Dr. Cheever if he attributes the actions of the iodides and bromides to the fact that some of the cases were syphilitic, and others were of chronic inflammation.

DR. CHEEVER: I did not think that they were syphilitic; I have no reason to think so. I suppose that the results would go to prove that all of these troubles were those of the glandular system, either glandular purely, or else the result of some chronic inflammatory process, which was absorbed. I should not be rash enough to expect a cure from drugs in positive new-called growths. I wish only to bring to

notice the fact that there are a good many doubtful cases which are benefited by prolonged and persistent treatment with a certain class of drugs. It will be noticed that none of these cases took medicine for less than six months or a year: it is only a limited class of patients who will do that, and whose confidence you can retain.

Certainly, in these cases, I think perseverance in treatment was well rewarded. The iodides, as has long been known, have a marked action upon the glandular system. About the bromides, as much has not been said. My attention was called to the bromides by my first case. The lady had taken immense doses of bromide to drown her grief, supposing that she had cancer of the breast. On leaving off the medicine, she improved, and finally the lump went away — whatever it was. I suppose it was an adenoma.

The most remarkable case, I think, is the one of the man who had the parotid swelling; probably it was a diffuse parotiditis with multiple abscess. There never had been any bone affection. It yielded very slowly. It was a long while before he could open his teeth at all. He had to feed himself with great care, and suffered great pain. In his case I ascribed the relief to long-continued use of mercury. That seemed to cause the final absorption, and he eventually got perfectly well, and every trace of the disease disappeared; he could open his jaws, and went about his business.

DR. WARREN: These cases are certainly valuable, as showing the possibilities of internal medication upon the growth of tumors, and it seems to me important that all such cases should be recorded, in order that we may encourage one another to attempt treatment where an operation is impracticable, and also, perhaps, to let the profession, as well as the public, see that tumors can be cured by regular internal medication as well as by some nostrum, the benefits of which are vaunted loudly. I think that there is a feeling among physicians generally that there are only a limited number of growths or new formations amenable to medical treatment; yet undoubtedly there are a large number of cases that are so.

I remember a very extreme case in the person of a man who was under the care of a neighbor of mine, who was ill with some internal growth. The case was seen by a surgeon, with my friend in consultation. An examination of the rectum was made, and a large tumor was felt in the pelvis, which was pronounced sarcoma. Under treatment by the iodide of potassium, however, the patient got well and the growth disappeared entirely. There are a considerable number of doubtful swellings about the breast, the nature of which it is difficult to determine as to whether they are, for instance, inflammatory or malignant. I think undoubtedly a certain number of these might be benefited by the treatment which Dr. Cheever has mentioned, although I have not, myself, attempted any internal treatment for these cases, but have generally contented myself with watching their progress.

DR. CHEEVER: I would like to say one thing more, Mr. Chairman, that I have confined myself entirely, in these cases, to patients of an age when severe disease generally comes, and that I have not spoken of any of the young subjects, because we are familiar with the fact that rapid hyperplasia of all sorts occur in young subjects, and go away without treatment. Glandular swellings do the same. Every one sees oc-

³ See page 620 of the Journal.

asionally a young girl at the age when growth and change are going on rapidly, with tumors of the breast; and if they can safely be diagnosed as simple enlargements of the glands, they can be left alone because they go away. I have seen it many times, and I dare say others have also. If the fears of the patient can be allayed and the patient let alone, the so-called tumors will disappear in a short time.

But such is not often the case with swellings which start after forty or forty-five years of age, and at that period in the male, as well as in the female, they are very apt, as we say, to mean business. I think that these hypertrophies of the glands, as in one of the cases that I mentioned, where the patient had a large chain, are extremely suspicious. It is possible in this case they may turn out to be malignant, but at the present time the swellings are subsiding, which is a cheerful indication.

The moral, I think, of the paper is this: that when we think it is not proper to operate, we should never leave a case without treatment. The mind and body both must be treated, and if we fail to give treatment they will not only be very unhappy, but will go off to some irregular practitioner, and either get an unexpected relief, to the damage of the medical profession; or else be very much injured by injudicious and harsh medication. I would like to ask whether any of the gentlemen have seen any of the indurations of which I have spoken on the dorsum of the penis in old people. I think, from what I have read of the matter, that they are quite rare, and they are extremely annoying. They are alarming to the patient; they suggest at once some form of cancer, coming on at that late period of life. But you would hardly look for a new growth in an organ which is at that period of life wasting. I would like to ask whether any one has seen any of these cases. Dr. Van Buren wrote me that he had seen three or four.

Dr. FITZ: I would like to state that, apart from there being some acute condition, there is the possibility of there being a thrombosis of the corpus cavernosum. That is a condition that I have seen at times, and it is quite supposable that such a thrombosis should eventually become replaced by fibrous tissue, and the prominent induration remain. Such a condition is to be found in its various stages, not infrequently, in the placenta, where, in the recent and older thrombi, are found the patches of dense fibrous tissue, the associated stages in direct relation with each other. Certainly, the age of the individual would favor the occurrence of such conditions, as would the anatomical structure of the part.

Dr. BEACH: This last case recalls one that I had some years ago. It was an acute swelling of the glans penis. The man came to me complaining of it as being painful, and it certainly had all the appearance of a case of clap, and I expected to see a profuse discharge. The swelling had come on suddenly, three days before, accompanied by a chill. The glans appeared to be somewhat cedematous, almost transparent, but there was not the slightest possible discharge from the urethra. I put him on five grains of quinine, three times a day, and inside of a week the swelling had disappeared. It occurred to me at the time whether this was not on a par with the transitory swelling of the lips that we sometimes see.

Dr. CHEEVER: These swellings of the lips are certainly most curious and annoying things. They alarm

the patient immensely, and you have difficulty, sometimes, in persuading the patient to hold on three or four days, when the cure comes of itself.

Dr. ROYAL WHITMAN read a paper entitled

OBSERVATIONS ON FORTY-FIVE CASES OF FLAT-FOOT, WITH PARTICULAR REFERENCE TO ETIOLOGY AND TREATMENT.⁴

Dr. CHEEVER: I would like to ask how the bare-footed people get along? Do they tend to have good feet?

Dr. WHITMAN: I should say that they do.

Dr. CHEEVER: In regard to flat-foot being so common in servant-girls, I suppose that one reason for it is that they go about the house during the day in soft non-supporting shoes; but I would like to ask Dr. Whitman whether the fact that they have almost no heels at all has any bad effect. When they go around, if they are not light steppers, you hear them pounding on the heel.

Dr. WHITMAN: I don't know about that. I have made an examination of feet, by raising the heel and measuring the rotation of the astragalus, and find that less rotation takes place than when the foot is resting on the floor.

High heels do not cause flat-foot; they may cause deformities of the toes by pressing them with increased force into the toe of the shoe, which is almost always too narrow for the foot.

Dr. CHEEVER: It would be good advice, I suppose, to tell a child not to toe out.

Dr. WHITMAN: Yes, especially if there was any tendency to weak ankles or flat-foot.

Dr. CHEEVER: All the records of the native tribes in North America say that they walked directly ahead.

Dr. WHITMAN: The reason is, I suppose, that in walking over soft ground one needs the additional grip of the toes, thus the Indian wearing moccasins, turned the feet in so that all the toes might be utilized for this purpose.

Dr. CHEEVER: I had always supposed that the projection you speak of was the scaphoid bone. I suppose you mean the joint of the scaphoid and astragalus.

Dr. WHITMAN: Yes, though ordinarily the head of the astragalus is more prominent than the scaphoid.

Dr. BEACH: I would like to ask Dr. Whitman what his experience is in building up the shank of the shoe.

Dr. WHITMAN: It is often a great help. There is a tendency to a giving away of the ankle on the inside. You will notice this in people on the street. Their feet turn out, and their shoes turn over on the inside. They say that they have weak ankles. It will be found that raising the inside of the shoe will have a tendency to aid this weak inner ankle, by throwing the weight more on the outside of the foot, and in a mild case may be all the mechanical assistance that is necessary. In the more severe cases it is not sufficient, for it does not prevent the displacement of the bones of the foot, which it seems to me is necessary if we are to expect a cure.

Dr. GREEN: I would like to ask Dr. Whitman if he finds this steel arch, for such extreme cases strong enough. You have the line of weight thrown inside the foot. Does that restore the line of weight to the middle of the foot in these severe cases?

⁴ See page 698 of the Journal.

DR. WHITMAN: No. In an old case with extreme deformity, if one can relieve the pain, that is all that can be expected. In a less severe case, where a reposition of the foot is possible, the plate accurately fitted to the foot will prevent any considerable return of the deformity. In walking, its upward and inward pressure on the inside of the foot throws the weight more to the outside and at the same time has a tendency to swing the everted toes in. This tendency the patient should assist voluntarily, walking with the feet straight ahead. Meanwhile, if suitable exercise for straightening the muscles be faithfully continued, after a time the plates may be dispensed with. The long support ordinarily used comes out beyond the balls of the toes, and the disadvantage of this, I think, that the person must walk with a clamping step as it prevents the natural flexion of the foot.

DR. GREEN: The difficulty that I have usually found where the flat-foot was extreme, is that the weight of the body is thrown entirely inside, and have been able to meet the difficulty best by bringing up an ankle support attached to the boot, and then strapping around the ankle.

DR. WHITMAN: Usually the patients dislike anything of that kind.

DR. GREEN: They dislike it, of course. If the same result can be accomplished with this plate of yours, it is a great gain.

DR. MONKS: A patient came to me some weeks ago with extreme flat-foot. He had been wearing for months an apparatus, such as Dr. Green has just spoken of. There was a steel upright on the outside, strapped to the leg just above the ankle, and a broad leather strap passed from its lower extremity beneath the sole of the foot to the inside and was then carried over the instep and fastened firmly to the steel support. The patient was thoroughly dissatisfied with the apparatus. It was clumsy and uncomfortable, and altered his gait appreciably. Moreover, the leather strap became soon so stretched that it gave no support whatever to the inner arch of the foot.

I had already seen some of Dr. Whitman's cases, and realized the immense advantage gained by his small, thin steel sole.

At his suggestion I took a cast of the patient's foot, and he kindly had a sole made for me. The patient was greatly pleased, and has worn the sole with comfort and satisfaction ever since.

DR. BEACH: I would like to ask if this is Dr. Whitman's own invention?

DR. WHITMAN: I don't know that I would call it an invention. I suppose that any steel support is a modification of a previous steel support.

DR. WARREN: I think the essential modification is the shortening of the sole, and the lifting upward of the inner side, which is not an element in the other support.

DR. MONKS: A steel sole has been long used in the treatment of flat-foot, but these soles have always been made, so far as I know, very long and very thick. The thickness has the objection of extra weight, and the length is bad in that it does not allow full action of the metatarsophalangeal joint of the great toe, thus necessitating a clumping, awkward gait. The old plate was also difficult to keep in a proper position, and it was frequently necessary to screw it to the sole of the boot.

Now, Dr. Whitman's steel sole is so thin that its weight is not perceptible to the patient, and so short that the foot rests upon its own heel behind and the head of the metatarsal bone in front, while the raised outer side of the sole prevents the foot from sliding off. I look on this sole as a very distinct improvement over the old one.

DR. CHEEVER: Is it worn next the stocking?

DR. WHITMAN: Yes.

DR. WARREN: I think we have need of some such thing as this. It seems, according to Dr. Whitman's experience, to be as effective as the most powerful apparatus hitherto used for the purpose.

NEW YORK STATE MEDICAL ASSOCIATION. FIFTH DISTRICT BRANCH.

FOURTH annual meeting, held in Brooklyn, May 22, 1888.

AFTERNOON SESSION.

DISCUSSION ON SURGICAL AID IN THE TREATMENT OF PULMONARY DISEASE.

The discussion was opened by a paper by Dr. N. L. North, of Brooklyn. He said that as comparatively few clinical data could be produced upon which to base an argument, the discussion must, of necessity, be somewhat speculative. It was as yet a matter in contemplation, though perhaps an event to come, for the surgeon to have the temerity to amputate the tuberculous larynx, or to make a door in the chest-cavity and rid a lung of its tuberculous or diseased portion, and then, having by careful antiseptic or aseptic dressing, obtained union of the remaining parts, transfer the patient to the physician for medical upbuilding and convalescence. Since the promulgation of the germ-theory of disease, and the discovery by Koch of the bacillus tuberculosis, medical thought and action had been preternaturally quickened, and remedy after remedy had been suggested and brought forward to destroy the micro-organism and efface its supposed or real results. The fact remained, however, that notwithstanding the better knowledge of the pathological conditions and the hygienic needs in diseases of the lungs, the treatment pursued was altogether unsettled and unsatisfactory, and without marked results; so that a recent writer, Dr. S. J. Radslipe, of Washington, summed up an exhaustive review on antiseptic inhalations in pulmonary diseases with the following propositions:

(1) We have not yet discovered the ways or means to destroy micro-organisms in the lungs in phthisical diseases.

(2) Our studies have probably not been in accordance with the teachings of physical or vital laws in order to fulfil this indication.

(3) Our failures in inhalation therapeutics may be due to misapprehension of the relationship of micro-organisms to disease.

(4) It would be strange that in the end we should discover that micro-organisms are not causes of disease, but only the result of putrefaction, whether we find them on the plains or in the lungs of the refined in luxurious habitations.

(5) The object of our treatment should be rather to preserve structures in health than to seek to destroy organisms which are not amenable to treatment.

Pulmonary phthisis, Dr. North went on to say, attacked its multitudes now, as in ages past, and multitudes succumbed to it in spite of medicine, hygiene, change of climate, and a largely increasing list of new remedies; and even the acute affections of the organs of the chest proved fatal in nearly, if not quite, as large a percentage now as formerly. Pneumonia, particularly, was popularly supposed, to be the cause of even more deaths at present than in former times. At this juncture, with the thought arising of what surgery—modern antiseptic surgery—has accomplished in other parts of the body, in alleviating and curing diseases and injuries heretofore believed to be fatal, and only fatal, in their tendencies and results, it would seem reasonable to turn our attention to the subject of surgical aid in chest diseases. If we should so far advance in the treatment of lung complaints that the physician should have the efficient co-operation of the surgeon, further and greater good than had as yet been attained would, it was fair to suppose, be the outcome.

To some it might appear as a retrogression to consider at this time the feasibility or appropriateness of the old minor operation of phlebotomy as connected with the treatment of pneumonia: and those present whose professional life dated thirty-five or forty years would doubtless recall the remarkable relief blood-letting often afforded when promptly resorted to in the first, or congestive stage. In this condition of engorgement, when the lung was literally blocked up, and the right side of the heart filled to overflowing with blood, was it not more rational, he asked, to abstract the blood by venesection, if need be, or even by direct aspiration, from the right side of the heart, and thus afford relief to the obstructed organs, than to attempt to force the organs to accomplish an impossibility by the stimulating plan so common in what was now called the supporting treatment. The fear of producing prostration by prompt radical treatment, as well in this disease as in some others, sometimes promotes, through improper attempts at stimulation, the very engorgement and consequent prostration it was desired to avoid.

But in pneumonia, again, the patient having passed the dangerous point of engorgement, and the changes of the second and third stages usually tending to resolution and health having failed to occur, so that a condition of suppuration and breaking down of the lung, or perhaps gangrene, has supervened, it would seem eminently proper that surgery should be called in to assist in the treatment, and an attempt, at least, be made to arrest the almost certain progress of the disease to a fatal termination. To make an opening through the chest walls at the most appropriate point, with the view of draining the pus cavities, or boldly removing, if need be, the diseased or gangrenous portion of the lung itself, would, with proper precautions, antiseptic and otherwise, appear feasible, and afford promise of good results.

Chronic abscess of the lung had already been relieved by surgical procedure. The question remaining for decision relative to chronic abscess was how best to supply this relief, whether by resection of one or more ribs, and a large, free opening, or by valvular outlet. It had occurred to him that with a device containing a ball-valve the passage of fluid might be made comparatively free, while the passage of air inwards could be practically prevented.

The central thought in this discussion, however, would seem to bear upon the relief or aid surgery might afford in the treatment of tuberculous diseases of the respiratory organs. Laryngeal phthisis certainly offered to the surgeon opportunities for testing the resources of his art with good hopes of favorable results, since operative procedures for the arrest, and in some cases apparently permanent cure of epitheliomatous, carcinomatous, and other malignant diseases of the larynx had already been reported. The probabilities would encourage a resort to either partial or entire laryngectomy, and especially in view of the fact that laryngeal tuberculosis often proceeded to almost a fatal termination with few indications of the lungs themselves having been invaded by the disease.

It was a matter of serious import to even suggest surgical wounds of the chest, especially such as must involve the pleura and lungs; and yet recoveries from accidental wounds of the chest, involving both pleura and lungs are not uncommon. Very possibly the old fears of wounding the pleura and of collapse of the lung from penetrating wounds of the thorax were less to be considered because such wounds were less dangerous than was formerly supposed. This danger, as was the case in wounds of the peritoneum might perhaps be rendered much less also by the adoption of antiseptic precautions. Collapse of the lung from chest wounds he thought was not seriously to be feared except the chest cavity should be allowed to fill up with blood, serum or pus, which might crowd the lung into collapse. It was certainly within the scope of this discussion to consider the propriety of freely opening into the chest cavity at the point of usual selection for drainage of the pleural sac, between the axillary folds or elsewhere, as might seem best adapted to the circumstances of any particular case. Probably a free opening, such as could only be made by resecting a portion of two or three ribs, and turning back the flaps, including the *pleura costalis*, would be no more harmful than a timid incision, which for the purposes desired could do but little, if any, good. The desire was to procure such a space in the thoracic wall as to enable the operator to examine thoroughly the tuberculous lung with view of opening and draining the pus cavities, or (if possible, and the condition of the case warranted it), to clamp or ligate and remove the diseased portion with the knife, electricity, or the actual cautery. If it should be thought that, in case the lung was so far involved as that it now contained tuberculous nodules and cavities, it was probable that the whole lung was nearly or quite useless, and the operation could afford little or no benefit except for purposes of drainage, even so, a trial only could decide how much improvement such complete drainage might afford.

One more operative suggestion, Dr. North said, had occupied his mind largely of late; one which was in line with the recent practice of removing tuberculous glands and joints, suspicious bones, etc. The suggestion was a bold, free removal of the apex of the diseased lung—early—before the disease had spread to other portions of the same lung or to the other lung. The details of an operation to reach and remove a lung apex, would be slightly different in the two lungs, owing to the difference in the origin and course of the right and left subclavian artery. In this connection, Dr. North stated his conviction that the usual statement of the older writers, as well as

some of the more recent ones, that "the left lung is more obnoxious to tuberculous disease than the right," was not a fact. The operation suggested for the removal of the apex of a lung, he went on to say, would be almost identical in all its main features with that for tying the subclavian artery in its middle portion, except that after the result was reached, it, with its accompanying vein and nerves, would be lifted back with a blunt hook, when the pleura, with the enclosed lung apex just beneath and behind, should be carefully grasped, loosened, and lifted up or withdrawn from the upper thoracic cavity, if possible. After the application of suitable clamps to prevent hæmorrhage or the egress or ingress of air would follow the deliberate ablation, with the knife or scissors, of the diseased or tuberculous portion of the lung. Then the lung and pleural wound should be closed with the continuous catgut suture, and the whole allowed to drop back into the chest-cavity; after which, with the utmost care as to drainage, etc., the external excision would be closed. The whole procedure, of course, would have to be undertaken and carried forward from the commencement to the close under the most approved and careful antiseptic precautions. Very possibly in some cases the clavicle would have to be sawn in two (in which case, it would be necessary to wire it on its return), and turned back; while in others, the first rib might have to be excised in order to get room to reach and manipulate the lung apex. Again, perhaps in some cases a posterior operation, involving the excision of a portion of the first and second ribs posteriorly and the pushing aside and downward of the scapula, might prove the most feasible method. In either case the object of the radical procedure referred to would be the cure of the disease or the prevention of general tuberculosis by an early removal of the original nidus of the tubercle bacilli.

He then propounded the following questions for discussion:

First. Can surgery be made available in the treatment of pneumonia or other acute affections of the lungs, and if so, how?

Second. Can surgery assist in the treatment of abscess of the lung; and what is the safest and most effectual mode of reaching, evacuating and draining the abscess?

Third. What surgical process, if any, can help in the treatment of laryngeal phthisis?

Fourth. Can surgery be made effectual in draining tubercular cavities, and if so, how?

Fifth. Is it possible by surgical process to reach and destroy by antiseptics, germicides, or otherwise, the bacillus tuberculosis, or whatever is the cause of phthisis pulmonalis?

DR. JOSEPH D. BRYANT, of New York, read the next paper in the discussion. He said that the fact should be recognized that many of the so-called new ideas of the profession bore, in reality, the evidences of remote age, and that the present established surgical treatment of certain pulmonary diseases was considered and recommended by Hippocrates. However, it frequently happened that recommendations from an acceptably authentic source and their adoption by those who looked to the same source for inspiration and enlightenment were not always to be found associated with each other; and long intervals of time often elapsed after an inspired suggestion before it was followed by a practical response from

those who came after. The seed which was sown by Hippocrates, although it had been practically dormant for so many centuries, bade fair now, in our time, to take firm root, and bear fruit that should commemorate the wisdom of the past and the enterprise and skill of the present age.

Passing on to a consideration of the first question propounded, he said the foundation of rational medicine and surgery in the treatment of disease, rested on the detection and removal of the causes of disease. Hence, before inquiring what surgery can do for the relief of these conditions, it seemed proper to inquire first, how can surgical skill prevent them? The exact nature of acute pneumonia, whether it be a local disease or a local manifestation of a constitutional disease, was not yet determined. Surgery could not, therefore, exercise a rational preventive influence against this disease; nor could he comprehend how operative surgery could exercise a practical influence in relieving a patient from the full effects of an attack of the disease. As to traumatic pneumonia, he did not feel that he could add anything to what was already before the profession in the various standard works on surgery.

In regard to the surgical treatment of abscess of the lung he said that Hippocrates himself laid down the surgical principles of treatment in a clear and unmistakable manner. He described with conciseness the proper situation at which to open these abscesses, and the suitable instruments for the purpose, and recommended a method of drainage and cleansing the cavities. If the pleural surfaces were adherent to each other, the operation of reaching and evacuating an abscess of the lung was both simple and safe; but if they were not adherent the operation, though simple, was fraught with danger to the patient from the escape of purulent products into the pleural cavity. It therefore followed that the existence or non-existence of adhesions should be determined before operative interference was attempted. It might be inferred that adhesions existed if the patient had had pleuritic pains at the seat of the abscess, if tumor was present, if fluctuation existed, if the surface were discolored, or if impulse occurred in the tumor with coughing with any physical effort. If, however, the abscess were situated deeply, or were suspected rather than recognized, and no pleuritic pains had occurred, it then became necessary (1) to locate the abscess; (2) to ascertain if pleuritic adhesions were present; (3) to evacuate and cleanse the cavity.

An abscess could be located safely and surely, (1) by a proper interpretation of the physical signs, aided by the character of the constitutional symptoms; (2) by exploration with a hypodermic or an aspirator. In connection with the introduction of the needle of either at the suspected site the barrel of the instrument should be exhausted immediately after the point of the needle has penetrated the skin sufficiently to permit a careful suction influence. The needle ought to be introduced into the lung slowly, while the barrel of the instrument is carefully watched to detect the first entrance into it of fluid. By exercising this care the first few drops of pus that are withdrawn will be noticed, and the distance of the abscess from the surface can then be accurately determined by measurement of the portion of the needle remaining without the body. If the needle fail to reach pus with the first insertion, it can be carefully inserted, without danger, in other directions until pus is detected.

2. Are pleuritic adhesions present? Observation of the inserted needle will determine also if adhesions are between the pleural surfaces. If these surfaces be not adherent, the outer extremity of the needle will describe the arc of a small circle, the radius of which will correspond in length with the external portion of the needle. This movement is caused by the inner end of the needle being pushed downward by the descent of the lung in inspiration, while the chest-wall moves in the opposite direction at the same time. These reverse movements cause the outer end of the needle to describe the arc mentioned. If the surfaces are adherent to each other the needle will move only in a direction corresponding with that of the chest-wall during the act of breathing, and in this case the evacuation of the abscess can easily be accomplished by either a cutting instrument or by cautery, directed in the course taken by the needle. The needle may be permitted to remain inserted in the abscess to serve as a guide. The abscess ought always to be opened at the lowest portion, even though it be necessary to remove a part of a rib to accomplish this purpose.

If the pleural surfaces are not adherent to each other, and the immediate evacuation of the abscess is deemed necessary, the operation must then be conducted with great care; otherwise, the purulent fluid will enter the pleural cavity, and cause a general pleuritis of that side. Under these circumstances it is advised to map out on the chest-wall with some coloring substance the area of the pus accumulation. All the tissues comprising the chest-wall of this area to the extent of at least one inch in diameter can then be removed down to the parietal pleura, which should be permitted to remain intact. The portions of ribs that fall in the line of this seat of the operation should be sawed through or trephined, and be raised carefully from the periosteum beneath them. The parietal pleura and the pulmonary tissue should then be sewn to each other firmly with catgut around the point of the proposed opening. If permissible, the movements of the chest wall may be limited during and for several hours following this step of the operation by surrounding the thorax at the lower portion with a strip of adhesive plaster, drawn tightly. This measure will restrict the movements upon each other of the parts to be sewn together, and if it can be continued for a sufficient length of time will permit fibrous union between them. If time will permit, the surfaces may be caused to unite by the use of counter-irritation or punctures before or after the removal of the portion of the chest wall.

The cleansing of the cavity, Dr. Bryant said, must be conducted with great care, lest the patient may be suddenly suffocated by fluid introduced into the lungs through the abscess cavity. Fluids should not be introduced into the cavity if air enters it by way of the lungs; but if the walls of the cavity are impervious to the pulmonary air-current, a mild antiseptic fluid can be introduced with caution. On the whole he thought it safer to wipe or cautiously scrape out a cavity, rather than incur the risk of the introduction of fluids into it. In the after-treatment antiseptic non-fluid applications to the walls of the cavity, with perfect and continuous drainage by means of suitable drainage-tubes, supplemented by dependent decubitus must be zealously observed. Professor Roswell Parke had reported 46 cases in which the lung was incised

(pneumotomy) for the relief of bronchiectatic and tuberculous abscesses, with the following results: 23 bronchiectatic abscesses, with 9 deaths; 13 tuberculous abscesses, with 6 deaths. In 32 cases of hydatid cyst treated in a similar manner, there were 4 deaths.

3. What surgical process, if any, can help in the treatment of laryngeal phthisis? In an advanced stage of the disease obstructed breathing and expectoration not infrequently occurred; and he said he had in mind a case of this kind at Bellevue Hospital which Professor Janeway transferred to his care for relief from these symptoms by tracheotomy. The operation relieved the patient not only of obstructed breathing, but also afforded at once a free escape through the tube of purulent matter from the lungs by aid of coughing and other forcible expirations. In this case the upper extremity of the trachea was nearly occluded by ulcerating granular growths, and he afterwards regretted that he had not split the larynx in the median line anteriorly, and removed the diseased contents: which would have rendered the patient a more complete and lasting service than was possible by tracheotomy. A step of this kind could not be taken consistently, however, except the prognosis of the case were bad in all respects. The surgical measures that were now employed in other conditions of a phthisical larynx belonged more properly to the domain of specialists in laryngology.

As to the draining of tubercular cavities referred to in the fourth question, such cavities could be opened in a manner similar to that already described for abscess of the lung. The precautions enjoined in the latter instance should be sedulously observed in the opening of tuberculous cavities. It was undoubtedly true that the disinfection and drainage of the tubercular cavities would in many instances cause a marked alleviation of the symptoms; but it was hardly to be expected that a cure of the local tuberculous conditions could be effected, since the specific growths were too far disseminated from the abscess wall, and often made of such a large proportion of its structure that little, if any, direct curative influence could be exerted. A tuberculous ulcer of the integument, one that could be treated with vigor, exhibited a degree of perverseness to the effect of both medical and surgical measures that portended ill for the successful treatment of a similar disease of the pulmonary tissue.

The fifth question, he said, had already been answered under the fourth. The injection into pulmonary tissue and pulmonary cavities of substances destructive of tubercle bacillus could be indulged in if one felt inclined to make the attempt; but to consider it possible to cure in any appreciable degree the tuberculous condition itself by any such measure seemed to require a large increase of faith, with a corresponding loss of judgment. He did not think it proven to the satisfaction of competent physicians that the injection of antiseptic fluids into tubercular lung cavities has been productive of practical good, while the dangers attendant on the general acceptance of such a measure would be certain to constitute a great evil.

Dr. C. A. LEALE, of New York, spoke in favor of phlebotomy in the first stage of pneumonia, and related the case of a lady weighing 240 pounds suffering from double pneumonia, whose life he thought was saved by the abstraction of a quart of blood. In simple abscess of the lung he advocated the evacuation of the abscess and thorough cleansing of the walls of the

cavity. In tubercular abscess, however, the surrounding tissue was filled with micro-organisms. If gangrene were present it was necessary to eradicate the gangrenous portion of tissue if possible.

DR. AVERY SEGER, of Brooklyn, referred to the results obtained in cases of bronchiectasis, by Dr. Theodore Williams and Mr. R. J. Godlee, and gave the conclusions of the latter in regard to the surgery of the lungs as follows: gangrenous cavities should always be sought, and if possible opened; and the prognosis, if the operation has been successful, is not bad. The same may be said in regard to abscesses caused by the rupture of purulent collections from other parts into the lungs; at least, as regards the pulmonary complication.

Abscesses connected with foreign bodies must be opened, and if the body be not readily found it must be remembered that if of any considerable size it probably lies near the middle line.

Bronchiectatic cavities are rarely single; therefore operations seldom afford relief.

With our present surgical knowledge, tubercular cavities should only be opened in cases where the cough is severe and the cavity single. Injections may be used to relieve symptoms, but cannot be expected to be curative.

DR. C. S. Wood, of New York, gave a *résumé* of the results obtained by Runeberg, Lepine and Godlee, and the statistics of 80 pneumatomies collected by Troubert, of Paris, and then referred to the plan proposed by A. Riva, an Italian surgeon, for treating tuberculosis by injecting antiseptic fluids into the pleural cavity, and completely flooding the diseased lung. In summing up the observations and reports thus far made, he said that we might safely draw the following conclusions: In abscess of the lung, whether gangrenous or not, it is advisable to first aspirate the cavity and then inject, at the same time and through the same puncture, an antiseptic fluid. If the abscess refills the operation must be repeated. Where a foreign body is supposed to be lodged in a bronchus an opening should be made into the lung by the resection of a portion of one or more ribs, under strictly antiseptic precautions, and the foreign substance removed. That the latter operation was fraught with but little danger Dr. Wood said was abundantly demonstrated by the results of many similar operations during the late war. But with our present knowledge there was but little encouragement in any surgical operations upon the lungs for phthisis; and the reason why surgery was so important in this field was not difficult of comprehension. Tubercles were not confined to any one portion of the lung, although the aggregation was usually greater at the apex than elsewhere; and before a cavity requiring surgical treatment had been formed, other portions of the lung, as well as other organs, are usually involved.

DR. TRUAX, of New York, said that in one case of abscess of the lung, in which he had aspirated and removed six ounces of pus, the patient did well for a time, and then made no further progress. Suspecting the presence of another cavity, he punctured the lung in a number of different places, but was unable to find any. The patient continued to grow worse, and then one night discharged about an ounce of pus by the mouth, showing that this second abscess had discharged through the bronchial tubes. After this he made a rapid recovery.

DR. TRUAX did not believe that germicidal fluids could be injected in phthisis in such a manner as to reach all the bacilli that might be present.

DR. WM. McCULLOM, of Brooklyn, thought that the results thus far obtained from surgery were not, as a rule, very gratifying. As good results could generally be obtained without surgical interference, as with it, in non-tubercular cases, and in tubercular cases, surgery as yet offered no hope of success whatever.

DR. SEGER said that Dr. Theodore Williams, who was constantly employing this method of treatment at the Brompton Hospital for Consumptives, had found the injection of cavities perfectly feasible and attended with great amelioration of the symptoms; and a number of American physicians were in the habit of resorting to it.

DR. BAILY spoke of the benefit which he had seen derived from injections in five old hospital cases of phthisis with cavities; these being attended with diminution of the cough, expectoration and night-sweats. Half a drachm of a five per cent. solution of carbolic acid in glycerine was injected every day or every second day, and the injection was entirely painless.

In closing the discussion, DR. NORTH spoke of the probable local character of tubercular disease, in the early stage, just as in the case of cancer. He thought that we need not feel discouraged because the reports of the surgical procedures referred to were not as yet very favorable. If there was any hope of success whatever we must still persevere, as the alternative was death. When the surgeon stepped in, the work of the physician should not stop, but they should co-operate, and each strive to help the other.

RHODE ISLAND MEDICAL SOCIETY.

THE seventy-seventh annual meeting of the Rhode Island Medical Society was held in Providence, June 14, 1888, the President, DR. HORACE G. MILLER, in the chair.

The Secretary reported that six Fellows had died during the year, and that the present membership of the Society is 193.

The annual report of the Treasurer, DR. C. H. LEONARD, was presented. The total income during the year was \$689.62; outgo, \$668.82; balance to new account, \$20.80. The printing fund now amounts to \$2,170, and the building fund, \$1,515.

The Trustees of the Fiske Fund announced the award of a premium of two hundred dollars to Charles V. Chapin, M.D., of Providence, for the best essay on the subject proposed last year, "What Changes has the Acceptance of the Germ-Theory made in Measures for the Prevention and Treatment of Consumption?"

The following subjects are proposed for 1889: (1) "The Surgical Treatment of Wounds and Obstructions of the Intestine." (2) "Asepsis versus Antisepsis in Surgery and Midwifery." (3) "The Role of Ptomains in Infectious Diseases." (4) "The Pathological Effects of Chronic Alcoholism." For the best essay on either subject, worthy of a premium, the Trustees offer a prize of two hundred and fifty dollars, on the usual conditions. Competing essays must be sent to Dr. George L. Collins, Secretary of

the Trustees of the Fiske Fund, Providence, R. I., before May 1, 1889.

The annual report of the Committee on the Library showed an increase of 556 volumes, making a total now in the Society's collection of 7,200 volumes.

Officers for 1888-9 were elected as follows: Albert Potter, President; J. W. Mitchell and W. H. Palmer, Vice-Presidents; W. R. White, Recording Secretary; G. D. Hersey, Corresponding Secretary; G. L. Collins, Treasurer; F. H. Peckham, Auditor; J. H. Eldredge, J. W. C. Ely, G. P. Baker, Benjamin Greene, Eugene Kingman, Job Kenyon, J. H. Morgan, G. W. Jenckes, Censors. Dr. James R. Morgan was appointed to serve on the Board of Examiners for a term of five years.

As recommended by the Board of Censors, the following physicians were admitted to Fellowship: Emma F. Sutton, Edmund Abbott, Joseph H. Akers, James H. Davenport, Edward C. Davis, John T. Farrell, William F. Gleason, William A. Gorton, M. William Kelliher, Harold Metcalf, John A. O'Keefe, Clement D. O'Leary, George L. Richards, Herbert O. True.

A communication was received from the Georgia Medical Society, accompanied by a resolution, urging Congress to remove the import duty from all medical and surgical supplies, instruments, and appliances. The resolution was adopted.

The annual address was delivered by DR. CHARLES V. CHAPIN, on the subject, "The Nature and Prevention of Scarlet Fever."

Following adjournment, the Fellows sat down to the annual dinner, which was served in Blackstone Hall, DR. WILLIAM H. PALMER officiating as Anniversary Chairman.

— An old correspondent writes: —

"I early received a cautionary lesson not to condemn too hastily the indiscretions of friends in the care of the sick. In a desperate case of typhoid fever — in the midst of its stupid delirium and apparently impending dissolution — having given very precise directions, and encouraged the attendants that the symptoms were better than at the previous visit, I was called back when leaving by a bystander with the rather rude question, 'Doctor! say! will a hard b'iled egg hurt this man?' On my discouraging such an experiment, I was cut short with the emphatic assertion, 'But, doctor, he's taken two, and they haven't hurt him!'

"The man recovered from the bite;
The doctor 't was that caved.' "

— While travelling in Oran, Algeria, M. Bousquet had an opportunity, according to the *London Medical Recorder*, of examining some ergot from oats. It is an elongated body of a black color, measuring from ten to twelve millimetres in length and three to four in thickness. Its therapeutical effects are as prompt and as lasting as the ergot of rye, but there is in addition a general stimulating effect which is useful in the cases of exhaustion following uterine hemorrhage. It was extensively used in Algeria last year on account of the rye famine.

THE BOSTON Medical and Surgical Journal.

THURSDAY, JUNE 21, 1888.

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THE LATE EMPEROR OF GERMANY.

EMPEROR FREDERICK III ended his reign of suffering on Friday last, June 15th. He lived about fourteen months from the time when his German physician first pronounced his affection to be a malignant disease of the larynx. Notwithstanding the wranglings and discussions that have taken place over this celebrated case, the exasperating and conflicting accounts of it in the lay papers, and the silly talk in some of the best American and English medical journals, about chronic laryngitis, perichondritis, pachydermia verrucosa, and what not, there has been for a long time but one opinion in regard to it among most individual members of the profession who were best capable of judging. We have previously expressed the opinion in this JOURNAL, that the early diagnosis of the Germans was undoubtedly correct, and foretold the inevitable course of the disease which has now ended as all similar cases inevitably must end.

Whether the Emperor's life would have been prolonged if he had followed the advice of his Berlin physicians and submitted to a partial excision of his larynx when the disease was in its earliest stage, can never be determined. But this advice of the German surgeons cost them their patient. They unanimously called Dr. Morell Mackenzie, of London, in consultation, who immediately doubted the malignant nature of the malady: advised against partial extirpation of the larynx, and removed by intra-laryngeal methods a portion of the growth, which he submitted for microscopic examination. Professor Virchow reported that he found no evidence of cancer in the specimens examined. From that time Dr. Mackenzie has had exclusive charge of the Emperor, and has enjoyed the undivided confidence of his Imperial patient, and of the Empress. His treatment, in our judgment, prolonged the patient's life. The Crown Prince lived to be crowned King of Prussia and Emperor of Germany — in the face of which a false diagnosis is of little moment! Dr. Mackenzie has been knighted for his

distinguished and valued services, and received a high German decoration from the Emperor's hands. Meanwhile the disease rapidly progressed. Cancer of the larynx defies the microscope and the skill of the most experienced. For whatever the microscope may have revealed, *clinically*, the disease has been cancer of the larynx, and all the stages of this terrible affection have been passed through and borne by the Emperor with noble fortitude. The cabled reports of the autopsy confirm the malignant nature of the disease, so far, at least, as gross appearances are concerned. We may expect now to hear a word from our German confrères concerning the ethics of this world-renowned case. Although we are too far away in this country to take a very lively interest in personal grievances, we feel that the sympathies of right-minded gentlemen will be apt to turn in but one direction.

THE SOCIAL SIDE OF THE RECENT MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY.

It is generally conceded that the medical papers read at this meeting were of an unusually high order, as our readers will have an opportunity to see for themselves.

The attendance at the meetings was good; the superb weather of both days enabled an unusually large number to be present.

In the opinion of many — and it is because of this opinion that we allude to the matter — it was unfortunate that the committee of arrangements were unable to find a suitable building for the banquet and usual after-dinner speeches, and not a little complaint has been heard from persons dissatisfied with the arrangements as actually carried out. This was to have been expected. There was the discomfort of standing and being jostled in a crowd, and, although the spread was profuse and all that could be desired, some modest men, as always happens on such occasions, from want of self-assertion, were unable to satisfy their appetites. Moreover, the omission of the post-prandium speeches was too marked an innovation on established custom not to arouse criticism, if not complaint.

On the other hand, the change was to a great many an extremely agreeable one. Those who find the chief pleasure of the annual meetings in the opportunity to renew old friendships enjoyed the reunion, and there are those who have listened to after-dinner speeches for so many years that they were perfectly willing to dispense with them for once.

The duties of those upon whom devolves the provision for social entertainment are certainly arduous. To provide two halls, in close proximity to each other and not too far from the hospitals, large enough to contain the Massachusetts Medical Society was this year impossible. A plan for next year is already under consideration that will meet all requirements, and the restoration of the old order will, it is to be hoped, remove any possible ground of complaint.

MEDICAL NOTES.

— In a County Court, of England, according to the *Lancet*, a tenant has lost his claim for damages against a landlord who had let him an insanitary house under circumstances that should serve as a warning to others. According to the evidence, the house was let on an assurance that it was healthy as regards its sanitary arrangements; but when the tenant entered he soon found sewer air pervading it, and he complained to his landlord without effect. Then followed the death of two of his children from diphtheria, and it transpired that a previous tenant had left the house because of the offensive odors in it, as having also brought the matter under the notice of the landlord. Two medical men testified to the deaths having been caused by sewer air through defective drains; but it turned out that the contract of tenancy was not stamped, and under the circumstances it was held that the plaintiff being unable to prove his tenancy, could not prove his damage.

NEW YORK.

— The last meeting of the Society of Medical Jurisprudence and State Medicine before the summer recess was held June 14th, when papers were read by Dr. J. B. Mathison, of Brooklyn, on "The Ethics of Opium Habitués," and W. A. Purrington, Esq., of New York, on "The Desirable and Practical in Legislation Regulating the Practice of Medicine and Surgery." The view taken by Dr. Mattison that the opium habitué was trustworthy, and that his moral sense was not necessarily warped, evoked a decidedly contrary expression of opinion on the part of several of the physicians present. It was asserted that the victim of the opium habit was always a liar, particularly in regard to the amount of the drug that he indulged in, and that its use had a sure tendency to lower the whole moral tone of the individual.

— The organization of a new hospital in Brooklyn for the treatment of diseases of the nose, throat and lungs has been effected. A suitable building will be secured at once, and the consulting staff is to consist of Drs. George R. Fowler, Thomas R. French and Benjamin F. Westbrook.

— Mr. Chauncy M. Depew, while on his way to the Republican convention at Chicago, stopped over a few hours at Syracuse, and while there delivered the address to the graduating class at the medical department of the University. "It is an anomalous situation," he remarked at the outset, "for a man who is rushing by express trains to the political convention which is to name the next president of the United States to be diverted from his course into a quiet by-way of study and literature; but, having in mind the dangers and accidents of politics, it may be wise for him to make friends with the medical profession." In the course of the address he said: "The conditions of health, happiness, development, mental, moral and physical vigor, and unimpaired faculties for old age, are found only in the full exercise of all our powers to the limit of their capacity. . . . Sir Henry Holland when past

eighty, returning from his annual vacation to find his carriage awaiting him at the station, and completing his round of calls upon his patients before reaching his house; Mr. Gladstone, at seventy-eight, more diligent in public duty than any member of his party, and yet finding time for excursions in the classics, modern languages and sciences, and to maintain a controversy in defence of the Bible and Christianity, furnish unanswerable testimony to the sustaining and regenerating power of work."

Miscellany.

A CASE OF SPLENECTOMY.

In the *Annali Clinici dell' Ospedale degli Incurabili in Napoli* for May and June, 1887, Professor Agostino Casini has recorded a case in which he successfully excised a "wandering" and hypertrophied spleen, of which the essential points are given in the *British Medical Journal*, for May 12th. The patient was a woman, aged twenty-two, who for four years had suffered from frequent attacks of malarial fever, sometimes accompanied by jaundice. Three years before she came under the care of Dr. Casini, she became conscious of uneasy dragging sensations in the abdomen, and noticed a tumor in that region which steadily increased in size, whilst her general health became gradually worse. On examination the belly was seen to be enlarged, especially on the left side. A smooth, rounded, rather hard swelling was felt occupying the fore part of the cavity; it extended upwards nearly to the margin of the ribs, downwards to the pelvis, and laterally to a line passing downwards from the anterior axillary border. The tumor was freely movable, and was not adherent to the abdominal parietes. It could be rotated so that its upper edge was directed forwards perpendicularly to the wall of the belly, the anterior surface thus becoming the inferior, and the posterior the upper. On the rounded margin a notch could be distinctly felt. The mass could be moved upwards and to the left, so as to be almost covered by the ribs; displacement towards the right, on the other hand, caused a feeling of dragging and stretching on the left side. There was some fluid in the abdominal cavity. On April 20th, Professor Casini opened the abdomen in the middle line, and removed the spleen. There were some adhesions to the kidney, and especially to the pancreas, which formed part of the pedicle. The latter gave a good deal of trouble, and had to be tied in a number of separate pieces, a portion of the pancreas, which could not be detached, being seized between the blades of a pair of forceps, and crushed off; the stump of the pancreas was then stitched up, and, after careful cleansing of the peritoneum, the abdomen was closed. Very little blood was lost in spite of the difficulty which had been felt in securing the vessels of the pedicle. The spleen weighed three kilogrammes and one hundred grammes (six and three-quarters pounds). The temperature on the first and second day was 100.4° F., after which it fell to a point little above normal. On the seventh day the sutures were removed from the abdominal wound, which had healed by first intention. A few days later a small abscess formed in the abdomen on

the left side above the level of the umbilicus; the patient, however, soon afterwards passed a quantity of pus in her urine, and continued to do so for some little time, the swelling meanwhile gradually disappearing. Towards the end of May she was discharged, cured, and six months later she was still in perfect health. This makes the ninth splenectomy that has been performed in Italy, the first having been done in 1874. Of these operations, five had a fatal result; the remaining four, which have all been performed since 1881, have been successful.

THE FREE ADVERTISING OF NEW FOREIGN DRUGS.

F. L. JAMES, medical editor of the *National Druggist* writes as follows: "American medical, pharmaceutical, and trade journals, usually keen to detect a hidden advertisement in communications recommending new drugs and preparations when the same emanate from home sources, throw caution and ordinary business sense to the winds when it comes to recommending and puffing the very same class of merchandise, bearing a foreign name and recommended by foreign authority. The success of one or two German chemicals, the products of synthesis, opened the doors for a flood of antiseptics, antifebrils, antipyrics, and other 'antis,' ending in 'ol' or 'in.' They come to us covered all over with patents—patents covering the names, the process of manufacture, the ingredients (save those which are kept absolutely secret), the modes of dispensing, the package, the label—in short, everything that a patent can be made to cover. In a word, they are patent medicines in the very widest and strictest sense of the term; and yet they are received with enthusiastic welcome by press and practitioner, and are given, *gratis* and gladly, advertisements that money could not purchase for a home product, even though ten times more valuable, and not one-tenth so much patented.

"One of the proprietors of a drug of this sort, recently established in America, on being approached by the solicitor of advertising for an American medical journal, answered very curtly that 'They didn't have to advertise their article. They got all the advertising they wanted, for nothing, in the shape of laudatory communications in the reading matter of the medical journals.' Which was true, every word of it, and that in spite of the fact that it was a patent medicine. The very journal for which the agent was soliciting, and in the very copy which he carried as a specimen, contained no less than six laudatory notices of the drug in question—one of them a communication covering several pages, and heralding its virtues in almost every known form of disease.

"Per contra, the same journal had enjoyed for years a handsome revenue from the advertisement of a reputable proprietary medicine house of this city, but had persistently refused to admit within its reading matter a little notice commendatory of one of its specialties, the formula for which was printed on every bottle.

"It is useless to plead that these imported patents are so valuable that the profession *must* have them and *must* use them, secret nostrums though they be. This is not true, nor is it true that the manufacturers over there are any more honest or frank as to the na-

ture and origin of their wares than are the American manufacturers of similar drugs. In proof of this assertion we call the attention of our readers to Gawalowski's merciless exposure of a new compound which is getting ready in Germany to make a descent on Europe and America in the style of its predecessors,—the antiseptic kreolin, of the wondrous value of which the advance guard of certificates have already commenced to appear in our journals. Will the latter be warned in time, or will they swindle themselves out of thousands of dollars by giving it the usual American welcome and gratis advertising."

MEDICAL STUDENTS' MANNERS.

A MRS. REES, writes, in the *New York Epoch*, on a subject of interest to hospital physicians and indeed to all who are brought in contact with public charitable institutions. That the criticisms are not offered at random will perhaps have to be admitted. The writer says:

"It has been my lot on three several occasions to experience the hospitality of public institutions, twice as patient for many months in paying wards, once in close attendance upon a dying child. In each one of these cases my personal experience has been the same—devoted attention by nurses and attendants, experienced skill, more or less valuable, on the part of the physicians, unutterable discomfort from details owing to careless or wilful mismanagement by the hospital warden, matron or superintendent. For the guidance of those interested in the question as to why constant complaints arise against public institutions, I will cite one instance in my own experience. Its value for the public lies in its absolute truth.

"I spent fifteen hours in the accident ward of one of New York's best hospitals, by the bedside of a child who had been run over. The greatest sympathy was felt in the case, and all the resources of the hospital were called into requisition.

"The sufferer was placed upon the only vacant bed in the sudden accident ward, and surrounded by some six or eight young students, the house-surgeon apparently in command. By the light of a tallow candle they made the examination, and squabbled a good deal over it. One of them plumped himself down several times upon the bed, but desisted upon my remarking that had he ever suffered he would probably be more careful.

"After the examination had been conducted to their satisfaction (their comments having been made without the slightest regard to the fact that the patient was perfectly conscious and that his mother was in attendance) they withdrew, first laughing and then squabbling, but principally interested in a jocular conversation with a bright-looking nurse. I suppose my looks betrayed a little astonishment, as when they had left the ward the house-surgeon (a refined and intelligent young man, to whom I owe a deep debt of acknowledgment for unvarying courtesy during the night that followed) came to me and said, 'I hope you will excuse our roughness here; the fact is, we are not accustomed to patients of your class. I have spoken to the nurse, and she will be quieter in the future.' I replied to the effect that I imagined patients of all classes felt much alike.

"We settled down to a night of anxiety, in anticipation of amputation on the morrow. The patient was perfectly conscious; my own concern was to shield him as much as possible from the distressing sights and sounds inseparable from a crowded ward. One instance of my care will suffice. I spent my time in *picking bed-bugs off the pillow and mattress* before he should see them. The night orderly stood for some minutes watching me. Then he said apologetically—

"'This 'ere bed ain't been slept in a great while. 'Tis the hot bricks brings 'em out (it was a frosty night in November); but, you see, we don't often have gentlefolks here!'

"Even in that hour of anxiety I could not suppress a smile. Are only gentlefolks worthy of quiet and the absence of vermin? At six o'clock the night nurse, leaving the ward, withdrew the hot bricks, and no others were brought until after eight o'clock, when the visiting surgeon made his rounds. It was a very cold morning and the patient was chilly.

"These are very simple facts. The question is, who was to blame for them? I could multiply them, but it is not necessary. They suffice to point the moral: *It is the things for which no one is responsible that render our institutions a reproach to our intelligence.*"

Correspondence.

OVARIOTOMY IN AGE.

WASHINGTON, D.C., June 15, 1888.

MR. EDITOR,—The letter of Mr. Alban Doran, published in your journal of June 7, page 586, has led to an examination of the original records of the cases to which he refers, and the result is a fresh illustration of the rule that second-hand quotations should never be made unless they are distinctly stated to be such. Mr. Doran says that "in the *Buffalo Medical and Surgical Journal* for September, 1886, XXX, a record will be found of Dr. Miner's case of ovariectomy in a woman aged eighty-two." Turning to this reference, we find that the woman was "aged thirty-two. . . . Menstruation regular, etc."

Turning to Mr. Doran's Handbook of Gynecological Operations, to which he refers in his letter, we find that in addition to the statement about Dr. Miner's case, he says that Atlee operated successfully on a patient aged seventy-eight. He does not give his authority for this and he does not refer to it in his letter, but he probably took it from R. Olshausen, "Die Krankheiten der Ovarien," Stuttgart, 1886, page 394, who refers to the *American Journal of Medical Sciences*, April, 1885, for Atlee's case. Referring to this, we find that the patient was sixty-eight, and not seventy-eight, years of age. Probably Olshausen copied from E. R. Peaslee's work "Ovarian Tumors and Ovariectomy," New York, 1872, page 354, where the error of substituting seventy-eight for sixty-eight occurs.

With regard to the statement that "Schröder operated successfully on a patient aged seventy-nine, and on another aged eighty," no references are given either by Mr. Doran or by Olshausen. Probably these cases have never been published, and the authority is merely a footnote by Schröder in his "Krankheiten der Weiblichen Geschlechts," Leipzig, 1887, page 420, as follows: "Ich selbst habe Kranke im 79 und 80 Jahre mit Glück operirt." These data, furnished me by Dr. Lorini, I have personally verified, and they show both that his search was fairly complete, and that the library index of cases which he used is not so imperfect as Mr. Doran's letter at first caused me to fear that it might be.

Very respectfully,
JOHN S. BILLINGS, Surgeon U. S. Army.

REPORTED MORTALITY FOR THE WEEK ENDING JUNE 9, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhoeal Diseases.	Diph. & Croup.	Scarlet Fever.
New York	1,526,081	720	292	20.58	12.63	3.80	7.70	4.48
Philadelphia	1,016,758	330	111	11.47	13.33	1.24	3.41	.62
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,155	141	49	10.54	12.76	2.13	.71	—
Boston	407,024	180	50	13.44	7.28	1.68	7.28	.56
New Orleans	218,000	133	67	30.00	13.50	19.50	3.75	—
Buffalo	230,000	—	—	—	—	—	—	—
District of Columbia	225,000	84	34	14.17	9.81	5.45	—	—
Pittsburgh	210,000	77	39	29.90	12.98	18.20	2.60	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	26	10	30.72	7.68	15.36	—	—
Charleston	60,115	48	20	27.04	10.40	10.40	—	—
Portland	40,000	13	2	—	15.38	—	—	—
Worcester	76,328	37	9	8.10	16.20	2.70	—	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	15	4	13.33	13.33	—	—	13.33
Fall River	61,203	25	12	22.00	17.00	—	8.00	20.00
Lynn	51,467	8	0	12.50	—	—	12.50	—
Lawrence	40,175	17	5	5.88	29.40	—	—	—
Springfield	39,952	16	3	18.75	6.25	—	18.75	—
New Bedford	36,298	14	4	14.28	7.14	—	7.14	—
Somerville	33,307	9	0	11.11	11.11	—	—	11.11
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	3	0	—	—	—	—	—
Chelsea	27,552	11	4	27.27	27.27	—	9.09	—
Haverhill	24,979	6	0	—	16.66	—	—	—
Taunton	24,796	14	4	7.14	7.14	—	—	—
Brookton	24,784	3	1	—	33.33	—	—	—
Glocester	23,187	4	1	—	—	—	—	—
Newton	21,105	5	1	20.00	—	—	—	—
Malden	18,482	5	3	—	16.66	—	—	—
Fitchburg	17,534	5	2	20.00	—	20.00	—	—
Waltham	16,651	6	2	33.33	—	—	33.33	—
Newburyport	13,839	6	1	—	—	—	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 1,954: under five years of age 731; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 300, consumption 250, acute lung diseases 204, diphtheria and croup 97, scarlet fever 43, diarrhoeal diseases 36, measles 27, whooping-cough 22, typhoid fever 22, malarial fever 19, cerebro-spinal meningitis 13, erysipelas 10, mepheral fever six, small-pox five. From measles, New York 16, Baltimore five, Charleston two, Boston, Washington, New Orleans and Pittsburgh one each. From whooping-cough, New York nine, Philadelphia five, Charleston three, Pittsburgh two, Boston, New Orleans and Nashville one each. From typhoid fever, Philadelphia 10, New York, Baltimore, Boston and Washington two each, Charleston, Fall River, Lawrence and Newton one each. From malarial fever, New Orleans seven, New York six, Baltimore and Charleston two each, Philadelphia and Nashville, one each. From cerebro-spinal meningitis, New York, Nashville, and Worcester two each, Baltimore, Boston, Washington, Pittsburgh, Chelsea and Taunton one each. From erysipelas, New York five, Boston and Pittsburgh two each, Baltimore one. From mepheral fever, Washington four, Pittsburgh one. From small-pox, Philadelphia three, New York two.

In the 28 greater towns of England and Wales with an estimated population of 9,998,273, for the week ending May 26th, the death-rate was 17.8. Deaths reported 3,201: infants under one year of age 764; acute diseases of the respiratory organs (London 228, whooping-cough 113, diarrhoea 38, measles 36, scarlet fever 26, diphtheria 20, fevers 25, small-pox (Hull three, Huddersfield two, Bristol and Oldham one each) seven.

The death-rates ranged from 10.9 in Birkenhead to 27.8 in Preston; Birmingham 17.1; Blackburn 19.7; Bradford 19.1; Hull 17.0; Leeds 21.2; Leicester 16.3; Liverpool 16.6; London 16.6; Manchester 24.8; Nottingham 13.3; Sheffield 17.2. In Edinburgh 17.9; Glasgow 25.6; Dublin 24.4.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 26, 1888, TO JUNE 15, 1888.

WHITE, ROBERT A., major and surgeon. Will report to regimental commander 1st Infantry to accompany Headquarters, Field Staff, Band and Battalion of 1st Infantry to Santa Barbara, Cal., on or about June 15, 1888, to remain until about Sept. 1, 1888. S. O. 25, Division of the Pacific, May 28, 1888.

COWDREY, S. G., captain and assistant surgeon. Ordered to accompany the troops of the 16th Infantry, from Fort Bliss, Texas, to Fort Douglas, U. T., as medical officer. Will return to his station upon the completion of said duty. S. O. 54, Department of Texas, May 19, 1888.

APPEL, D. M., captain and assistant surgeon. Upon arrival of Capt. J. V. Lauderdale, assistant surgeon, at Fort Davis, will proceed to Camp Pena Colorado, Texas, for temporary duty at that Camp; and upon return of first lieutenant H. S. T. Harris, assistant surgeon, to Camp Pena Colorado, Assistant Surgeon Appel will return to Fort Davis. S. O. 57, Department of Texas, May 28, 1888.

KEAN, J. R., first lieutenant and assistant surgeon. Will accompany Troop C, 9th Cavalry, from Fort Robinson, Neb., to Fort Du Chesse, Utah, and will then proceed to Fort Laramie, Wyo., with Troop B, 9th Cavalry, to Fort Robinson. S. O. 39, Department of the Platte, May 19, 1888.

MORRIS, E. R., first lieutenant and assistant surgeon. Granted leave of absence for one month, with permission to apply for an extension of one month. S. O. 61, Department of Arizona, May 28, 1888.

FINLEY, JAMES A., captain and assistant surgeon. Granted leave of absence for six months on surgeon's certificate of disability, with permission to leave the division of the Missouri. S. O. 129, A. G. O., June 5, 1888.

DENHAM, ROBERT B., captain and assistant surgeon. Is relieved from duty at Fort Du Chesse, Utah, to take effect upon completion of the duty assigned him in Paragraph 2, S. O. 38, c. s., Department of the Platte, and will then proceed to Fort Laramie, Wyo., reporting to the commanding officer for duty at that post. S. O. 14, Department of the Platte, June 4, 1888.

FILCHER, JAMES E., first lieutenant and assistant surgeon. Detailed as member of board of medical officers appointed by S. O. 108, A. G. O., May 10, 1888, to meet at United States Military Academy, West Point, N. Y., to examine candidates for admission to the Academy, etc., vice Major Robert M. O'Reilly, surgeon, relieved. S. O. 128, A. G. O., June 4, 1888.

BIRMINGHAM, HENRY P., captain and assistant surgeon. Granted leave of absence for one month. S. O. 117, Division of the Atlantic, June 11, 1888.

CHEERONNIE, A. V., captain and medical storekeeper. Granted leave of absence for four months on surgeon's certificate of disability. S. O. 133, A. G. O., June 9, 1888.

The meteorological record for the week ending June 9, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barometer.		Thermometer.		Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.	
	Paily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Saturday, June 9, 1888.																			
Sunday, . . . 3	29.92	60.0	69.0	54.0	66.0	55.0	67.0	63.0	W.	N.W.	N.W.	9	12	6	C.	F.	C.		
Monday, . . . 4	30.04	64.0	73.0	57.0	62.0	39.0	54.0	49.0	N.W.	W.	S.W.	6	12	9	C.	F.	C.		
Tuesday, . . . 5	30.12	72.0	84.0	52.0	54.0	29.0	60.0	48.0	W.	W.	S.W.	14	13	17	C.	F.	C.		
Wednesday, . . 6	29.97	75.0	88.0	52.0	55.0	47.0	68.0	56.0	S.W.	S.	W.	18	22	9	C.	C.	C.		
Thursday, . . . 7	29.96	68.0	81.0	56.0	81.0	49.0	88.0	73.0	S.W.	W.	N.E.	12	3	20	O.	O.	O.	2	.23
Friday, . . . 8	30.14	58.0	66.0	54.0	80.0	70.0	65.0	72.0	N.E.	E.	S.E.	12	14	2	O.	C.	C.		
Saturday, . . . 9	30.03	71.0	84.0	55.0	70.0	49.0	71.0	63.0	W.	S.W.	S.W.	8	12	22	C.	C.	C.		
Mean, the Week.	30.027	66.9	80.0	54				60.6										2	.23

¹ O., cloudy; C., clear; F., fair; G., fog; H., haze; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING JUNE 16, 1888.

MCNURTRE, DANIEL, surgeon. Detached from Naval Hospital, Yokohama, Japan, and return home.

GRAYATT, C. U., surgeon. Detached from United States Steamship "Michigan" and to Hospital, Yokohama.

ENGAR, JOHN M., passed assistant surgeon. Ordered to the United States Steamship "Michigan."

MACKIE, B. S., surgeon. Ordered to the United States Steamship "Ossipee."

PARKER, J. B., surgeon. Detached from United States Steamship "Ossipee" and wait orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE WEEK ENDING JUNE 16, 1888.

WYMAN, WALTER, surgeon. Detailed as member Board of Examiners, *vice* Surgeon Fessenden, excused on account of physical disability. June 15, 1888.

FESSENDEN, C. S. D., surgeon. Granted leave of absence for thirty days on account of sickness. June 15, 1888.

SOCIETY NOTICES.

AMERICAN NEUROLOGICAL ASSOCIATION.— Preliminary Programme of Papers to be read at the Special Meeting, to be held in Washington, D. C., September 18, 19, and 20, 1888. Dr. Robert T. Edes, of Washington, will read a paper on The Relations of Mental Diseases to Diseases of the Nervous System. This subject will be discussed by Dr. F. X. Dercum, Dr. Leonard Weber, Dr. E. C. Seguin, and Dr. L. C. Gray. Dr. B. Sachs, of New York, will read a paper on Muscular Dystrophies. This subject will be discussed by Dr. P. C. Knapp, Dr. G. W. Jacoby, Dr. W. R. Birdsall, Dr. L. C. Gray and Dr. C. K. Mills. The following papers will also be read: Post-Hemiplegic Disturbances of Motion in Children, Philip C. Knapp, M.D., Boston. Heat Centres in Man, Isaac Ott, M.D., Easton. The "Ape-Fissure" so-called, in Man, But G. Wilder, M.D., Ithaca. Clinical Report of Cases of Epilepsy following Cerebral Hemiplegia, E. D. Fisher, M.D., New York. The Relation of Urinary excretions to Functional Nervous Diseases, C. L. Dana, M.D., New York. The differential diagnosis between General Paresis, certain forms of Intra-Cranial Syphilis, and the Cerebral Type of Disseminated Sclerosis, Landon Carter Gray, M.D., New York. Report of a Case of Primary Lateral Sclerosis with late Cerebral Symptoms due to Cyst of the Floor of the Lateral Ventricle, with microscopic report, Wharton Sinkler, M.D., Philadelphia. A case of an unusual form of Myxodema, illustrated by photographs and sections of excised tissues, F. X. Dercum, M.D., Philadelphia. A Case of Alcoholic Multiple Neuritis with Sections, James Hendrie Lloyd, M.D., Philadelphia. Observations and Experiments respecting the Pathology of Neuritis, James J. Putnam, M.D., Boston. Myositis Subcutanea Progressiva, George W. Jacoly, M.D., New York. The Differential Diagnosis between Peripheral Neuritis and those Cerebral Affections with which it is most likely to be confounded, E. C. Spitzka, M.D., New York. Nervous Affections Following Injury, Philip C. Knapp, M.D., Boston. Hereditary Chorea, Wharton Sinkler, M.D., Philadelphia. Aneurysm of an anomalous artery causing Antero-Posterior division of the Optic Chiasm and Bitemporal Hemianopsia, S. Weir Mitchell,

M.D., Philadelphia; to be read by F. X. Dercum, M.D., Philadelphia. A case of Focal Epilepsy with Observations on Trephining, James Hendrie Lloyd, M.D., of Philadelphia. Cases of Trauma with well-defined lesions of the Central Nervous System, G. L. Walton, M.D., Boston. The Preliminary Report of the Committee on Eucaphalic Nomenclature, will be read by Burt G. Wilder, M.D., Chairman, Ithaca. Dr. C. K. Mills, and others, will demonstrate specimens.

GRENE M. HAMMOND, M.D., Secretary, JAMES J. PUTNAM, M.D., President,

AMERICAN PHYSIOLOGICAL SOCIETY.— Preliminary List of papers to be read at the Special Meeting, to be held in Washington, D. C., September 18, 19, and 20, 1888. Dr. G. Stanley Hall, on The Therapeutic and Forensic Aspects of Hypnotism. Dr. G. L. Goodale, On Enzymes Comparable with Pepsin, found in certain fruits of temperate climates. Dr. H. P. Bowditch, On the Knee-Jerk Phenomena. Dr. W. P. Lombard, On the Nature of the Knee-Jerk. Dr. H. P. Bowditch, On the Effects of Varying Rates of Nerve Stimulation upon the Character of Muscular Movements. Dr. C. S. Minot, Growth and Death; The Cells of the Cortex Cerebri; The Uterus during Gestation. Dr. H. N. Martin, On the Temperature Limits of the Vitality of the Mammalian Heart. Dr. H. H. Donaldson, Histological Changes Produced in Ganglion Cells by Stimulation. Dr. Isaac Ott, On Fever. Dr. W. T. Sedgwick, On the Distribution of Bacteria in Drinking Waters and Public Buildings. Dr. M. H. Howell, The Origin and Regeneration of Blood Corpuscles. Dr. V. C. Vaughan, On Certain Ptomaines. Dr. R. H. Chittenden, On the Physiological Action of Uraniun Salts; On Myosin and Certain of its Decomposition Products; The Influence of Autolysin on Proteid Metabolism.

H. NEWELL MARTIN, Secretary.

VERMONT STATE MEDICAL SOCIETY.— The Semi-Annual Meeting will be held at the Weldon House, St. Albans, Vt., June 28th and 29th. The Scientific Programme is as follows: Thursday, June 28th, 10 o'clock, A.M. Obituary of O. F. Fassett, M.D., by S. S. Clark, St. Albans. Obituary of Samuel Nichols, M.D., by Daniel Campbell, Saxtons River. Shock after Surgical Operations and Injuries, J. N. Jenne, St. Albans. Voluntary Papers or Reports of Cases. Two o'clock, P.M. Epileptic Convulsions, Prof. A. F. A. King, A.M., M.D., Washington, D.C. Diphtheria, its History, Cause and Prevention, J. H. Hamilton, Richmond. Pneumonia as an Epidemic, H. R. Wilder, Swanton. A Case of Hydrocephalus, J. S. Richmond, Windsor. Voluntary Papers or Reports of Cases. Eight o'clock, P.M. Vice-President's Address, The Use of Alcohol in Disease, S. L. Wiswell, Cabot, Friday, June 29th, Morning Session. Mergin, F. E. Stoddard, Shelburne. A Case of Acute Bright's Disease, F. H. Cilley, Jericho. Acute Chorea, F. W. Goodall, Bennington. The Medicinal Treatment of Fibrous Tumors of the Uterus, C. J. Russell, Hinesburgh. Voluntary Papers or Reports of Cases.

APPOINTMENTS.

The Overseers of Harvard University have confirmed the following appointments: F. C. Shattuck, M.D., Professor of Clinical Medicine; J. O. Green, M.D., Clinical Professor of Otolaryngology; C. J. Blake, M.D., Professor of Otolaryngology; F. I. Knight, M.D., Clinical Professor of Laryngology; W. H. Baker, M.D., Professor of Gynecology.

RESIGNATION.

Dr. E. N. Whittier has resigned as Assistant Professor of Clinical Medicine.

Original Articles.

A CLINICAL CONSIDERATION OF SIXTY CASES OF CEREBRAL PARALYSIS IN CHILDREN.¹

BY ROBERT W. LOVETT, M.D., BOSTON.

In some 2200 cases of disease in children observed and treated at the Surgical Out-Patient Department of the Children's Hospital, in the four years ending last January, there presented themselves among the cases of motor disturbance, some 60 patients where there seemed reason to believe that the disability was of cerebral origin. Cases of anterior poliomyelitis, or common infantile paralysis outnumbered the cerebral cases three to one at least, but these cases of infantile paralysis are left out of consideration here.

It has been possible to obtain a recent examination and a careful history of the great majority of these 60 cases, the practical out-come of which it is desired very briefly to present, not from the standpoint of the neurologist, but considering simply the gross clinical characteristics of these cases as they were observed. And first, they must be grouped, and they fell naturally enough as a rule, into one of three classes. Hemiplegia, Spastic Paralysis of both legs, and a class of non-descript cases, perhaps best called Incoordination or Idiotcy. But this arrangement follows no authority, and represents merely an arbitrary clinical division for convenience in presenting them. Unfortunate, as the statistical method is, it seems the only available way of handling so large a group of cases.

Among these 60 cases there were 26 cases of Hemiplegia, half of the right side and half of the left, and about equally divided between the two sexes, and most of the children at the time of observation were between 4 and 8 years old (although they range from a year and a half to 14).

Two-thirds of these cases were hemiplegia of practically the adult type of distribution; while the remainder represented a combination of hemiplegia, and beginning or advanced spastic paralysis of both legs as well, the significance of which must be considered later.

There was in every case of hemiplegia at the time of observation a certain amount of impairment of motion of the diseased side, with more or less muscular atrophy and bone shortening in some cases where the paralysis had existed for some years. One case showed a shortening of 2 inches in the length of the arm after a paralysis of seven years standing. Three other cases of 4, 7 and 8 years standing showed an inch shortening in the leg or arm. The muscular atrophy, was as a rule, slight and not at all comparable in severity to the muscular atrophy of Infantile Spinal Paralysis of the same duration; it was ordinarily a difference of less than an inch in the circumference of the arm or leg, but in some cases the limb had wasted to almost nothing but skin and bone. The arm and hand were useless on account of atrophy or ataxia, in only 7 of these cases, while in 14 they were fairly useful, and 5 were not noted. The arm was in all cases affected more severely than the leg, and recovered more slowly. As to the use of the legs, 5 children walked perfectly well, 4 rather poorly, 7 with a bad limp, 7 not at all.

It is interesting to note that where the parents were careful people and had kept the affected limb well rubbed and bent, the limbs were always in a condition of at least partial usefulness. Facial paralysis had been present in at least half the cases and strabismus was present at the time of observation in more than half, adding to the already stupid look of the patients.

Athetosis was noted in only two cases, an unusually small proportion.

The prevalence of mental impairment in these cases of hemiplegia is most striking, and probably exceptionally large; at the same time, the series represents every case of hemiplegia that was seen, however slight the affection. Of these 26 cases there were only 6 that could be accounted of average intelligence, under a most charitable interpretation, and of these one was aphasic and another stammered most markedly. All the 6 could read. Seven were idiotic; that is, they were unable to talk or care for themselves or understand very much of what was said to them, and their expression was characteristic of the low grade idiot; 8 might perhaps be classed as feeble-minded. All but two could talk imperfectly, but they were all easily excitable, passionate and violent. They could not seem to learn and would not mind what was said. Their faces had a stupid or epileptic look, and all but one were subject to convulsions, 4 were of a still higher grade and were presentable, but by no means up to the average, 1 could go to school, but 2 of the others, five years old, did not know their letters: they might be classed as backward; and 1 was one and a half years old, too young to be classed.

Of the 26, 7 were aphasic, and four times this was with left-sided hemiplegia and three times with right-sided. When larger groups of cases are considered right-sided hemiplegia shows 47 per cent. of accompanying aphasia while left-sided only 26 per cent. I quote from 160 cases analysed by Wartenburg.²

The first point of interest in the discussion of the etiology of these cases lies in the question of whether they were born after a hard or an easy labor. Mr. Little of London was the first to call attention to the associations of difficult labor and spastic paralysis, and in 1862³ appeared his paper which has become classical, "On the Influence of Abnormal Parturition, etc., upon the future mental and physical condition of the child," in which he tabulated some 63 cases of spastic paralysis and hemiplegia, in all of which he found that it was due to difficult labor. Ross⁴ twenty years later elaborated the point somewhat more fully, and quoted authorities to show the liability of the new-born to meningeal hæmorrhage. Weber⁴ made 161 autopsies of new-born children, and in 81 cases where the spinal canal and head were opened, 33 times there was extravasation of blood from the spinal and cerebral meninges. Of 64 cases of foot extractions examined by Ruge⁴ there was rupture of the vertebral column in 8.

There was no such universal difficulty of labor in these 26 cases of hemiplegia, there were 5 where it was not possible to obtain a reliable account of the labor. In the remaining 21 cases, 8 children were born by an easy, normal labor, on the testimony of the mother. In 4 cases the labor was described by the

¹ Read, and patients exhibited, before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, April 11, 1888.

² Jahrbuch f. Klid. 1886. N. F., xxiv, p. 381.

³ Obstet. Trans. London, 1862.

⁴ Brain, Vol. 34.

mother as "very hard." In 7 cases instruments were used; in the 7 instrumental cases, once version was done and once the child was born asphyxiated, and once prematurely at 7 months. Two of the children have, at the age of 4 and 8 years a depression in the skull, on the side opposite to the paralysis, left from the use of the forceps. In the kindred class of spastic paralysis considered here for comparison, of 12 cases, 9 were born by an easy and normal labor, 1 was a breech presentation, and 2 were born before term at 8 months. Since then 17 of these 33 cases of cerebral paralysis (more than 50 per cent.) were born by normal labor which the mothers described as easy; it seems reasonable to conclude that the influence of difficult labor in producing cerebral paralysis must have been very much overestimated. Probably, accounts of the labors from unprejudiced persons would show a much higher percentage of normal labors. In speaking of the class of feeble-minded children in general, Dr. Langdon Down⁶ says: "I found that among the great number of feeble-minded children about whom I could get thoroughly reliable accounts, in only 3 per cent. had the forceps or any other instrument been used," and he also quotes the late Dr. Ramsbotham as telling him "that the cases were very few in which he could trace any cerebral lesion as resulting from the employment of the forceps."

Of these 26 hemiplegia cases, 7 were noted immediately after birth, 5 cases in the first year, 12 cases in the second year, and over two years only two cases, both at the age of five years; once after an attack of diphtheria, and once it developed without warning or sickness of any sort. It is interesting to note how evenly distributed the liability to cerebral paralysis is for the first six or seven years of life.

Of Wallenburg's 160 cases, 19 showed paralysis at birth or immediately after, in the first year, 35, second year, 29, third year, 17, fourth year, 9, fifth year, 9, sixth year, 3, seventh year, 6, eighth year, 3. Some 150 cases of anterior polio-myelitis, however, considered by Sinkler,⁸ showed a different distribution, and were sharply limited to the first three years of life, six-sevenths of all cases occurring in that time. The number of cases of cerebral paralysis increases at the time of the second dentition.

An illness of some sort marked the onset of the disease almost always; sometimes only a severe crying spell, or what was considered bowel irritation, or indigestion, often convulsions, ushered in the paralysis; having been present in 12 of the 26 cases. This is not far from the usual proportion; but only eight times did they mark the beginning of the paralysis; once they preceded the paralysis by one year, and three times they followed its establishment at intervals of from four months to five years. But as only one of the children under consideration has reached puberty, it is hardly time perhaps to expect the full development of the epileptic convulsions said to appear at that time. Cases are recorded where twelve and thirty years have elapsed before the appearance of convulsions.⁷ In only one case could I associate the beginning of the paralysis with any acute infectious disease, and that was the diphtheria noted above, but the exanthemata are often the cause, no less than 28 cases having been reported as due to scarlet fever, and measles, and ty-

phoid, mumps, whooping cough, and even vaccination are accountable for 11 more reported cases.⁸ The pathology of these hemiplegic cases can best be considered after speaking of the cases of pure spastic paralysis.

"Spastic paralysis" is perhaps the commonest name for the condition also known as "Little's disease," "tetanoid pseudo paraplegia," "spastic spinal paralysis,"¹⁰ "permanent tetanus of the extremities,"¹¹ and so on. It is only of late years that the affection has been clearly recognized, and since the work of Charcot and Erb it has, of course, been known to be associated with degeneration of the lateral columns of the cord. Very briefly, the condition is characterized by a persistent stiffness and constant spasm of the muscles of the legs and sometimes of the arms; the legs are straight and rigid, and the feet are extended, and when an attempt is made to walk the child stands on tiptoe, and often the adductor spasm is so great that the legs are crossed. There is no marked wasting of the muscles, and the deep reflexes are much increased. The walk is almost characteristic, a clinging gait, in which the feet are scraped along the floor with much effort and straining at every step, if indeed the spasm is not so great that walking at all is out of the question.

There were 16 cases of this bilateral spastic paralysis in the 60 cases, not counting the 7 cases where it was combined with hemiplegia; and the age of the patients ranged from two to twelve years at the time of observation. In 4 cases the notes were imperfect, and the paralysis was noted immediately after birth in eight of the remaining twelve, but in only three was it associated with abnormality of labor, as we have already seen. In the other 5 cases where it was noted at birth no more definite causes could be assigned than a fall during pregnancy, worry during pregnancy, except in one case where the child had a long and severe crying spell immediately after birth, which of course suggests the occurrence of meningeal hemorrhage. The family history in all these cases was good.

Of the four cases in which paralysis was not noted immediately after birth, one was clearly traumatic, coming on in a girl eighteen months old, after a fall of some thirty-six feet; and in another case it gradually developed about the age of six years. The other two children were brother and sister, and the affection developed after an acute sickness called by the attendant "slow fever," which they both had at about the same time, when one was two years old and the other only a few months, but the fact that one of the children showed congenital absence of the uvula does not lend much strength to the parents' theory. One of the congenital cases was very likely syphilitic in origin, as the father had the disease at the time of the child's birth, but the notes were not definite on the point.

Here the mental impairment was even more general than in hemiplegia, for no one of the 12 cases where the records are complete could be classed as intelligent. 6 were low grade idiots, 3 were very stupid,

⁶ Wallenburg and Gowers. Loc cit.
⁷ Marie. *Prog. Med.*, No. 36.
⁸ Richardiere. *Etude sur les scleroses encéph. priere. de l'unfau*.
Gileu de Paris.
⁹ Jeudeassik and Marie. *Auk de Phys. non et Pette*, V. 61, 1885.
¹⁰ Seguin. *Opera minora*.
¹¹ Erb and Seeligmuller. *Jahrbuch. f. Kilde*, N.F. xiii, 1879, 226 and 315.

¹² Stoomyer. *Hdbch du Chir.*, 1867, 17 and 174.

¹ Mental affections of childhood and youth. London, 1887, p. 44.
² Sinkler. *Ann. Jour. Med. Sciences*, April, 1885.
³ Gowers. *Epilepsy*, London, 1880.

but could understand nearly all that was said to them, two were backward and mischievous, while one appeared almost bright, but was said by his mother to have "no sense;" 7 were completely aphasic, while 5 could talk more or less.

In 9 of the 12 there was a stibismus, and in every case a stupid or idiotic countenance. Of the 16 cases 12 were unable to walk at all, either from the persistent muscular rigidity of the legs, or from the mental deficiency alone. Two could walk alone, one with a chair and one with crutches. Of the 16 cases, in 5 the cross-legged deformity was noted, the legs being crossed by the adductor spasm on trying to walk; progression in this method is, of course, impossible. In 7 cases the hands were noted as also impaired, and one child was said by the mother to have taken hold of things with crossed hands; that is, he used his left hand to take hold of things on his right, and the right hand for things on his left, but that, of course, is very doubtful.

The patella reflexes were in all cases much increased when the muscles were not too rigid to prevent it from being seen, and the muscles offered always a tetanic resistance to attempted manipulation. When the rigidity of the legs was not too great, ankle-clonus was also present, but this was found in proportionately few cases.

There were certain vices of malformation—the uvula was absent in one case, and in one there was a co-existent inguinal hernia, a high arch to the roof of the mouth was present in a certain number of both these and the hemiplegic cases, but in by no means so large a proportion as Down found it, who analyzed 200 cases, and found an abnormally high palate in 41%. The children were much given to drooling, and one case of this sort was sent to Dr. F. H. Hooper, who found an adenoid growth in the nasopharynx, and removed it, with much relief to the patient; and one case of hemiplegia, with beginning spastic symptoms, had the same trouble, and was relieved in the same way, both with some improvement of the mental condition.

The question of whether spastic paralysis in children is a spinal or cerebral affection has always excited much discussion. Little thought it in many cases spinal, Charcot and Erb in their description of primary lateral sclerosis in the adult, seemed still further to confirm this view although Erb¹² expressly avoided committing himself to any such views, and suggested a lack of development in the nervous centres as the cause. As Catsaras¹³ puts it, "Is the cord-lesion primary, or is it secondary and descending, due to a bilateral cerebral lesion? Recent opinion is perhaps well formulated by Ross,¹⁴ who says, "The opinion that a large number, if not all cases of the spastic paraplegia of infancy are caused by porencephalus defect of the motor centres, along with an arrest of development of the corresponding parts of the pyramidal tract, is here advanced with due reserve." Spastic spinal paralysis, then becomes a "double spastic hemiplegia" as Mr. Nutt¹⁵ called it, and the existence of primary spinal spastic paralysis becomes a question of doubt.

In this series of cases there was no patient who was free from cerebral symptoms, no case of pure

spinal spastic paralysis. One case seemed to be spinal in origin and to have but little cerebral trouble beyond a certain backwardness, and he was sent to Dr. J. J. Putnam for diagnosis, who wrote back that it seemed to him to be of cerebral origin, and he suspected as the cause of it a meningeal hemorrhage soon after birth, when the child had a violent crying spell which lasted for some time. He added that he thought there was undoubtedly some general cerebral atrophy beside the affection of the motor tract.

Naef,¹⁶ who wrote a very exhaustive paper upon the subject, thought that there was not more than one case of pure spinal spastic paralysis in 1,000 children sick with various ailments, and admitted that the existence of primarily spinal spastic paralysis in the child, lacked anatomical proof, and Ross, although he thinks that spinal spastic paralysis exists in children, speaks of its rarity.

All that can be said is that in 2,200 cases of surgical disease, representing really a much larger number of sick children in general, if one is to reckon by that method, no case of spastic spinal paralysis has presented itself.

Before speaking of the great amount of theorizing as to the pathological process causing hemiplegia and spastic paralysis in children, it will be best to see what the recorded autopsies show as the pathological appearances, and I am able to give a summarized account of 77 autopsies upon cases of this sort.¹⁷ There were among these cases 37 times a right hemiplegia; 29 times a left hemiplegia; 3 times a single hemiplegia, the side not noted; 8 times paralysis of both sides (spastic paralysis or double hemiplegia).

From the nature of the disease, autopsies, when the disease is of short standing, are very rare. Most of these recorded, are months or years afterward. Of 12 recent cases where the autopsy occurred within a few weeks or months after the onset of the paralysis, 7 cases showed clearly embolism of the artery of the fissure of Sylvius, 45 showed a hemorrhage in the hemispheres or ventricle of practically the adult type, and microscopic examination could show no difference between the local condition found there, and in adult hemiplegia; one of these cases (that of Reimer¹⁸) was examined within six days of the onset of the paralysis. Apart from these 12 cases the others are all of longer standing than a year, most of them as many as 40 or 50 years after the beginning of the paralysis and showed changes much less definite; but 13 of the more recent cases showed very clearly a local lesion like a cyst, or apoplectic scar, an atrophy and sclerosis clearly localized in the motor region, and from this condition to a general atrophy of a whole hemisphere, every gradation was represented. They all show, with a few exceptions, a gross defect of tissue in the cortex near the fissure of Rolando. It used to be called atrophy of the hemisphere and as such the older cases stand recorded. In some of these cases the meninges showed signs of having been involved as well as the brain, but in most of them it is impossible to say whether the process began in the brain or its membranes. Sixty-three of the cases showed this local or general destruction or non-development of

¹² Naef. Die spast. spin. Paralyse in Kindesalter Inaug. Diss., Zurich, 1885.

¹³ Wallenburg and Mr. Worth. Loc. Cit.

Kast. Arch. f. Psych., 1887. xviii, 280.

¹⁴ Bullard. Boston Med. and Surg. Jour., Feb. 16, 1888.

Otto, Arch. f. Psych., etc., xvi, 215.

¹⁵ Reimer. Jahrb. f. Klin. W. F. II, 1877, p. 70.

¹² Erb. Memorabilien aus der Praxis Heilbrunn, 1887. 12 Heft.

¹³ Catsaras. Ann. Med. Psychol. July, 1887.

¹⁴ Ross. Loc. Cit.

¹⁵ Mr. Nutt. Ann. Jour. Med. Sci., Apr., 1888. 9, 58.

tissue in the motor region. Heschl¹⁹ gave it the name porencephalus, and Kundrat²⁰ wrote a most extensive paper about it, and now it is known as porencephalon or porencephalous defect, which, as I understand it, means only a lack of tissue in the brain substance from any cause. The name originally arose from the fact that the convolutions converge toward these pits at the bottom of which there is apt to be a communication with the lateral ventricle.

Two cases remain out of the 77 to be accounted for; one²¹ showed a diffuse sclerosis of the cortex due to a diffuse, chronic encephalitis and the last (the case of Seeligmüller)²² was a case of brain tuberculosis with several foci distributed through the brain; where the paralysis is of both legs, sometimes the brain lesion is unilateral and sometimes it involves both sides, as in the well-known case of Mr. Nutt.

This is very briefly all that is known of the pathology of the condition, a lesion of the motor tract, atrophy and retarded development of the brain, and descending degeneration of the pyramidal tracts and lateral columns of the cord; and from the extensive atrophy found in young children at autopsy, it seems that unquestionably sometimes the disease originates in defective development of the nervous centres, especially the pyramidal tracts. Flechsig²³ found these absent in some anencephalic children and in one of Kundrat's cases they were imperfectly developed.

Having then seen that hemiplegia and spastic paralysis differ but little in the original lesion causing the paralysis, it is not surprising that 9 of the twenty-six hemiplegia cases here reported showed spastic paralysis of both legs as well; and the interest of the matter comes in the question of whether hemiplegia in children is apt to go on to spastic paraplegia later, a matter of the greatest practical importance, of course, in the prognosis. In the 17 cases where hemiplegia alone existed, the average duration of the paralysis at the time of observation had been 3.8 years; but in the 9 cases where spastic paralysis was also present the average duration had been 5.9 years, or more than two years longer. It would seem from this that spastic paralysis co-existed with hemiplegia in cases of longer standing than when hemiplegia was found alone. Moreover, what appear to be transition cases from simple hemiplegia to severe spastic paralysis were present. Two of the children, aged 4 and 14 respectively, had hemiplegia which presented the usual signs, but they had also exaggerated tendon reflexes, they walked with something of the clinging gait that distinguishes spastic paralysis, and they were unsteady on their feet, and one of them has lately become worse. Possibly they will never go on to any more serious condition than this, but the other 7 cases present fully marked signs of spastic paralysis with those of hemiplegia.

The co-existence of spastic paraplegia and hemiplegia in the adult has not escaped attention. Hadden²⁴ has written about it, and accounts for its occurrence by the presence of an unusual decussation of the pyramidal tract fibres. Charcot, on the other hand, thinks it due to a second decussation of the motor fibres in the dorsal region.

With regard to the theory of Strümpell,²⁵ that a large proportion of cases of cerebral paralysis in children are due to a primary local inflammation of the brain-cortex cells, analogous to the inflammation of the cells in the anterior cornua of the cord in infantile paralysis, it can only be said that the theory, however plausible, lacks anatomical proof; even Kast, its latest advocate, admits that. Unless the recent case of Ruemann be accepted as poliomyelitis, there is nothing resembling a primary local encephalitis in any of the autopsies made early in the disease, and the atrophy found in the later ones is perfectly well explained by the occurrence of such well known processes as embolism, hæmorrhage, thrombosis, as Gowers²⁶ suggests, and defective development. Ruemann²⁷ recently published the autopsy in the case of a child eleven years old, who died in the midst of convulsions. Death came on six hours after the beginning of convulsions, and examination showed in the gray substance near the fissure of Rolando on the right side a small spot of a more translucent color than the rest. No microscopical examination was made. No other lesions were present.

With regard to the diagnosis between infantile and spinal paralysis, there is ordinarily little likelihood of confusing the two in the later stages. At the beginning, unless facial paralysis or distinctly hæmiplegic convulsions are present to show a cerebral origin, it is practically impossible. Cerebral paralysis ordinarily begins with a convulsion or illness, its distribution is oftentimes hæmiplegic, which is very rare in infantile paralysis and the tendon reflexes are increased on one or both sides. Wasting of the limb is slight for some time, but ultimately bone-shortening may come on, and, most important of all, the paralyzed muscles show no qualitative change in their reaction to the galvanic current. Infantile paralysis begins oftentimes, also, with a convulsion or illness. It affects oftentimes one limb. Facial paralysis is never present. Wasting begins at once and is very rapid, and the limb is cold and blue. The reflexes are diminished and ultimately lost. The paralyzed muscles show to the galvanic current the qualitative changes known as the reaction of degeneration.

The prognosis of these cases of hemiplegia is not very brilliant; the chances are that mental enfeeblement will come on, and possibly spastic paralysis. With good care the paralyzed side can probably be kept from extreme atrophy and those contractions that render the limb useless, and after the shock, nearly all the cases here analyzed improved somewhat in the use of the limb. Epilepsy is very apt to develop at puberty or before.

In spastic paralysis it is safe to assert that the child will probably ultimately be able to walk somewhat if the case is not very severe, and it will probably learn to talk at the age of five or six or seven. Almost all of the cases here recorded have improved in the last three or four years. There is, of course, no outlook of recovery, but their tendency has been to walk better, to talk a little more clearly and in every way to improve. Two of the forty-two cases have died in the last three years, both apparently of meningitis.

The treatment of these cases can be discussed in very few words, in view of the character of the brain

¹⁹ Prag, Vierteljahrh. xxi, 1859, p. 59.

²⁰ Kundrat, Die Porencephalia Gray, 1882, p. 45.

²¹ Kast, Loc. cit.

²² Seeligmüller, Jahrb. f. Klin. F.W., xlii, p. 760.

²³ Flechsig, Leitungsbahn in Getorce und Rushemark, p. 198.

²⁴ Hadden, St. Thomas Hosp. Rep., 1882, G.

²⁵ Pitres, Arch. de Neurol., No. 10.

²⁶ Strümpell, Jahrbuch f. Klin., N. F., xxii, 1874, 173.

²⁷ Diseases of the Brain, London.

²⁸ Cent. f. Kl. Med., 1887, 48.

lesion. Inasmuch as it is a defect of tissue, but little is to be expected from operative interference, for there is no pressure to be relieved, nothing to be removed, unless at the time of the occurrence of the paralysis it might be possible to open the skull and turn out a meningeal clot, as Mr. Nutt suggests, if any one felt disposed to undertake so great a risk. After paralysis has occurred, of course the harm has been done, and the aim should be to keep the muscles from atrophy, and in as good condition as possible by massage and manipulation, and most important of all, the use of the faradic current to the affected muscles. Galvanization of the head has been proposed, but is denounced by such men as Gaudard²⁸ and Bernhardt.²⁹ The child should receive, it is said, not more than four or five applications of the faradic current each week, and each sitting should be from five to fifteen minutes at the most. The mental training forms a most important part of the treatment, but that must be passed over here. No form of apparatus can, of course, benefit the children, unless the heels are so persistently drawn up by the tendo-Achillis that walking is impeded in which case it is easy to do a tenotomy, and, bringing the foot down, retain it by a club-foot shoe. One of the cases of spastic paralysis had received some little benefit in this way.

It will be necessary to pass over very briefly the last of the three classes into which the cases were divided. It represents at best a miscellaneous collection which were classed as incoordination or idiocy. Their only excuse for appearing here is the very close outward resemblance that they present on superficial examination to the hemiplegic and spastic cases already considered; but definite paralysis and spastic rigidity of the muscles are absent, and idiocy obscures everything. If one sees them sitting down, the stupid cross-eyed look, the drooping head, the drooping and all, are exactly what one sees in the severe mental enfeeblement of spastic paralysis of hemiplegia, but put the child on his feet and the difference is at once evident. Either he is so limp that he will be unable to bear his weight at all, or he will stand holding his parent's hands with his feet wide apart, his knees bent, and his trunk leaning forward. The whole body sways to and fro with an oscillating movement, and the sense of equilibrium seems almost wanting; if he is let alone, he walks in a staggering uncertain way, with many falls. This describes the state of the best of the 13 children of this sort that I saw, and from this the condition grades off to a disability so great that the child cannot even sit up; when it is propped up the head lops on to one shoulder, the vertebral column fails to support the trunk and bends to a marked degree, and every muscle seems limp and useless. There is no suspicion of muscular rigidity or localized paralysis.

There were 13 of these unfortunate children, 5 boys and 8 girls, and the ages were from one to eleven. Nine appear to have been congenital, and in two the notes are indefinite. The labor was normal and easy on the testimony of the mother in 7 of the 9 cases, and the other two were premature deliveries. It was very hard to find any assignable cause for these cases, the family history was good in 5 cases, twice phthisis was present, and in one case the mother had an anen-

cephalic foetus born previously; one attributed it to a fright in pregnancy, and the tendency is to assign it to any cause rather than inheritance. Dr. Down says of this tendency, "Parents always prefer to refer the cause to a post-uterine or non-congenital origin, partly because they think it frees them from a suspicion of hereditary influence, and partly from a notion that the child is more likely to be restored to its pristine state," and so this tendency of referring it to frights, etc., in pregnancy, arises.

Mitchell³⁰ tabulated the cases of 443 idiots that he saw consecutively, with regard to this, and found only 28 cases where there was any likelihood of its having been due to a fright or strong mental emotion during pregnancy, and in general he found this to be his experience in the examination of some 1500 idiots and imbeciles. As to convulsions, these were present in four cases, having begun before the child was a year old, and absent in five.

In the matter of intelligence, 11 of the 13 cases were low grade idiots, one could understand what was said to him, and one began at the age of four and a half to talk very imperfectly. Three could walk very unsteadily and one with the aid of a chair. All but one of the children had strabismus, and he was a child five years old with a head measuring 22 inches, which corresponds to a No. 7 hat, and large heads in this class were not uncommon; two children two years old, had heads of 19 and 20 inches, and one four years old measured 21 inches. This, of course, points to hydrocephalus as a common cause. The patellar reflexes were sometimes normal and sometimes increased, the legs were flabby, cool, and the hands and feet apt to be undeveloped. Disturbances of sensation were common, and one or two paid no attention when a pin was thrust into the leg. There was absence of the uvula in one of these cases also.

To enter upon the pathology of these cases would be to introduce the very extensive subject of the pathology of idiocy. Suffice it to say that all sorts of malformations of the skull and brain have been recorded, hypertrophy and atrophy³¹ of the brain tissue have been described,³² localized and disseminated sclerosis,³³ chronic hydrocephalus³⁴ and pressure from meningitis³⁵ are among the others.

Unlike the cases of spastic paralysis these children do not seem to have shown much of any tendency to improve in the time that they have been under observation, and of course any treatment further than mental training offers but little hope.

There are five miscellaneous cases which are unclassified. Two backward and rather feeble minded boys four and seven years old respectively, whose only disturbance is a tendency to hold the head over the right shoulder. There is beginning torticollis in one and no muscular alteration in the other; one was born by a forceps and the other by a natural labor. Both talk thickly and imperfectly. Little³⁶ called attention to the connection of cerebral injury and wry-neck.

The third was a girl who had slightly increased reflex excitability of the legs and a tendency to fall, the result, apparently, of long-continued epilepsy.

²⁸ Obstet. Transactions, London, Vol. xxvi.

²⁹ Cotard, *Thèse de Paris*, 1868. Seibert. *Arch. f. Pediatrics*, March, 1888, 165.

³⁰ Beech, *Am. Jour. Ment. Sci.*, June, 1883, and April, 1881.

³¹ Bunkner. *Arch. f. Psych.*, xii, 3.

³² Tamburini. *Revisit Sperim.*, vi, 285.

³³ Seibert. *Loc. cit.*

³⁴ Little. *Obstet. Trans.*, London, 1862.

²⁸ E. Gaudard. *Cont. à l'étude de l'hémip. cer. Inf.* Thèse, Geneva, 1884.

²⁹ Bernhardt. *Virch. Arch.* Bd. 102, Heft 1, S. 26.

The other two were children who were very backward about walking, but who ultimately recovered the full use of their limbs, and as they were in both cases suffering from rickets, their disability was probably due to the condition known as rachitic paralysis, and, as they were originally considered cases of cerebral origin they have been included here. As this paper is only a resumé at best, no summary need be given more than to call attention to two or three practical points that seem to be evident.

First, the great gravity of the prognosis of hemiplegia in childhood as regards mental enfeeblement, epilepsy and possibly the transition to spastic paralysis. Again, that the influence of the difficulty of labor in the production of these cases has been very much overestimated. That the tendency of cases of spastic hemiplegia is to improve, with or without treatment. And lastly, that the existence of primarily spinal spastic paralysis in the child has yet to be proved anatomically, as well as the existence of the polyecephalitis of Strümpell.

NOTE.—Further bibliography can be found in the papers of Mr. Nutt, *Am. Journ. Med. Sciences*, January, 1885. Knapp, *Journ. of Nervous and Mental Disease*. Wallenburg, *Jahrbuch f. Kilde*, 1885.

ON MOTOR PARALYSIS AND OTHER SYMPTOMS OF POISONING FROM MEDICINAL DOSES OF ARSENIC.¹

BY JAMES J. PUTNAM, M. D.

The following notes give the result of an inquiry into the possibility of the occurrence of serious symptoms of poisoning from arsenic taken in medicinal doses, and the report of a case which may have been one of that kind.

A diagnosis which contradicts the usual clinical experience should, of course, be made and received with hesitation. All that I shall maintain is that the symptoms which this patient presented are characteristic of neuritis, and rather more so of arsenical neuritis than of other forms, and that similar results have followed an equally slight exposure to the poison.

The history of poisoning from lead and the other metals furnishes collateral evidence of a similar kind, showing that certain persons are severely affected by doses that others find harmless. It is customary to speak of these cases as instances of special idiosyncrasy. It is, however, fair to hope that this phrase may some day be translated into more scientific terms, and the first step towards this end is the accumulation of clinical evidence.

In this list which I give below, I have not included the cases occurring in the practice of physicians of several years ago, when arsenic was so much in vogue in the treatment of intermittent fever, partly because it is difficult to find exact reports of such cases, partly because the doses given were such as we should now recognize as being hardly justifiable.

Neither have I included the cases of paralysis resulting from carpets, wall papers and paint, although a number have been reported, because, although undoubtedly small, the doses of the poison absorbed in this way cannot be determined with accuracy.

The most characteristic and easily recognizable types of arsenical paralysis are induced by large single

doses, or repeated doses of moderate size, and it will, therefore, be worth our while to cast a glance at these before examining the effects of small doses, for the latter, although they probably do not introduce any distinctly new type of disease, yet sometimes give rise to modified and abortive forms which might easily elude diagnosis.

The acute arsenical paralyses are to be known, in the first place, by the topographical distribution of the symptoms. All four extremities are usually attacked almost simultaneously, and the muscles of the trunk often become more or less weakened. The legs usually suffer more than the arms, although the reverse is true in lead-poisoning. Both flexor and extensor muscles are involved, but the extensors usually the most severely. The paralysis is generally more severe in the distal than in the proximal muscle-groups of the limb, so much so that Schafer,² while distinctly admitting that paralysis of other distribution also occur, says (page 274) that it is in cases of arsenic poisoning alone that we meet with a simultaneous and equal paralysis of the extensors and flexors of the hands and feet, while the movements at the other joints are intact, and the rest of the muscular system is not involved.

Isolated instances are reported of localized paralysis, confined, for example, to one arm, or to the arm and leg of the same side, but these cases are rare.

A second characteristic of the arsenic paralysis is that they are usually preceded and accompanied by disorders of sensibility, and often by severe pains, such as we are now in the habit of attributing to neuritis. These pains are, in a considerable proportion of the cases reported as affecting the joints and being of a rheumatoid character. They are by no means necessarily associated with distinct tenderness along the nerve-trunks, or even in the muscular masses, though in acute cases these symptoms are common as they are in neuritis from alcohol and other causes. Anæsthesia and analgesia may or may not be present. In certain well-reported cases by Gerhardt, (l. c.) marked objective disorders of sensibility have been wanting, or have been present only temporarily or in limited areas, although the patients may have complained of subjective feelings of pricking and numbness. I shall have occasion to revert again to the fact that such symptoms as these—so characteristic of neuritis when they are present—are often conspicuously and provokingly absent, even though the other signs may positively indicate the presence of the disease.

Arsenical paralyses from large single doses usually appear as relatively late symptoms, often not coming on until after several days, or even during the convalescence from the first acute symptoms of poisoning. Occasionally, however, they occur early, and may be of brief duration. It is a remarkable fact, but one apparently well authenticated, that these paralyses may improve and then again become worse at a time when it would have been supposed that the poison itself must have been entirely eliminated,—after, for example, weeks and months, and, it is said, even a year, (Gourbeyre, l. c., p. 57)—and it often happens that the symptoms increase for a time after the poison is no longer being taken. Sometimes they are of extremely long duration, lasting for months and years, and they may even be, to a greater or less extent permanent. Unless the paralyses are of brief duration

¹ Read before the Suffolk District Medical Society, April 28, 1888.

² Beiträge zur der Lehre von der Arsenik Versittung, Berlin, 1846.

they are attended by muscular atrophy, often of a high degree, and sometimes by trophic changes in the other tissues.

The electrical irritability of the affected muscles follows the rule of the reaction in similar grades of neuritis from all causes; that is to say, the reaction of the nerves is usually more or less diminished to both currents, but may be normal and may be somewhat increased.³ Sometimes the electrical reactions suffer before any notable loss of voluntary power occurs.

The mechanical irritability of the muscles has been reported in at least one case by Jaeschke to be exaggerated, and it was so in the case which I shall later report. The patellar reflex, or knee-jerk is usually absent, but occasionally present, and, rarely, even exaggerated.⁴

A third characteristic is that the arsenical paralyses are apt to be accompanied, more so, for example, than those from lead and alcohol, with marked debility, depression of nervous force, and drowsiness, or heaviness, alternating with restlessness, especially at night.

Neither these general symptoms nor the gastro-intestinal irritation which is so common, are invariably present.

With regard to the pathology of the arsenical paralyses, it is now generally believed that they are largely due to neuritis, and this may be produced partly by the direct action of the poison on the nervous tissues, and partly, perhaps, through the occurrence of small hæmorrhages and vascular congestions, like those found in the gastro-intestinal tract. These vascular changes are by no means always due to direct irritation, since they occur also when the poison has not been in contact with the mucous surfaces.

The first writer, so far as I know, who called special attention to the action of arsenic in inducing neuritis was Jaeschke (l.c.) Since then this has been confirmed by several autopsies.⁵ Most of the older observers leaned, on theoretical grounds, to the view that, in the production of the paralyses, whether of sensation or motion, the spinal cord was chiefly at fault, and Dr. E. C. Seguin, in an interesting clinical study⁶ published in 1882 endorses this opinion, largely basing his conclusions on the experimental investigations of Popard.

It may be here remarked, however, that a doubt has been thrown on the significance of Popard's observations, and although it is highly probable that arsenic causes a greater or less amount of change in the central nervous system as well as in so many other parts of the body, the exact nature and significance of this change is still a matter of question. It should be said that Dr. Seguin himself does not by any means exclude, in the paper referred to, the influence of neuritis in causing a portion of the symptoms.

The case which I have to report to-night is that of a gentleman, sixty-three years of age; with no previous constitutional disease or other antecedents that would seem to bear upon his present sickness except as hereafter stated. He had been a great sufferer from asthma for many years, and on this ac-

count began to take, May 5th and 10th, 1887, four or five drops of Fowler's Solution, three times daily, by the advice of his physician, and continued this treatment until about the middle of June, taking in all perhaps 40 grammes, equal to f $\frac{3}{4}$ i to f $\frac{3}{4}$ iss. Just before giving up the medicine he began to suffer from pain on the under surface of the thighs, on exertion, and found some difficulty in rising from his chair. The same pain was felt during and after taking a drive. A little later his shoulders began to be painful under similar circumstances, and he had difficulty in getting on his overcoat without aid. The pain appeared to be in the neighborhood of the joints, but was rather difficult to localize exactly. Movements requiring rotation of the arm outward, were especially painful, and a slight wrench would cause excessive suffering. At one period he had slight pain about the hand which troubled him in writing, but this soon passed away.

Through the summer these symptoms continued without much change, except that he became excessively drowsy, and lost some strength. There was also considerable nervous distress and restlessness, especially at night, so that he would be up and down, changing from bed to lounge and back to bed again. The upper part of the arms soon became painful, so that, for example, it hurt him so much to hold a book as to make it difficult to attend to the reading. He had also pain in the joints of the hands on trying to lift any heavy object.

About September 10th, he went on a journey to Canada for his health. He was at this period depressed and silent, and at times during the journey was so drowsy that this was noticed and commented on by his fellow travellers. He also felt weak and sick, and suffered from a sense of fatigue apart from his drowsiness.

On his return, about October 1st, he found himself unable to raise his hand enough to wind his hall clock and could hardly get his foot on to the step of his carriage or mount a railway train.

I saw him first towards the end of November, and found his condition as follows: He says that since October his nights have been better. He cannot lie in one position long, but has none of the excessive nervous distress felt in the summer. He cannot dress himself without help, or put on his boots alone, cannot put his hand into the tail-pocket of his coat and only with great difficulty into the side-pocket of his trousers. The most marked loss of power was seen in the motions of the arm at the shoulder-joint, and the thigh at the hip. Thus he could not put on his coat alone, or raise the knee while sitting in a chair, and he had great difficulty in getting up stairs. In trying to do this he plants his right foot fully upon each step and brings up the left after it. In standing or walking the feet were placed far apart to secure a larger base; the back was rounded, the arms hung limp from the shoulders and the body slumped together. There was no increased swaying with closed eyes. He could with difficulty raise himself upon the ball of either foot alone, and only moderately well with the two feet together.

There was much less loss of power in the hands than at the shoulders, yet these also were weak, especially the left. At the same time it was distinctly noticeable that no movement was absolutely lost. Contrary to what is seen in most cases of multiple

³ Seeligmüller, *Deut. Med. Wochschr.*, 1881, p. 188.

⁴ Seeligmüller, l.c., 201.

⁵ See the interesting Middleton-Goldsmit lectures on multiple neuritis, by Dr. M. Allan Starr; also Brissaud, *Des Paralysies Toxiques Paris*, 1886; also, the Canada M. and S. J., Vol. xv, p. 716.

⁶ Jour. Men and Ner. Dis., 1882.

neuritis, the motions of the hands and feet were best preserved; those of the limbs on the trunk the most severely affected.

He was still rather drowsy, but less so than before. It is especially noteworthy that when this sickness came on his asthmatic symptoms almost entirely disappeared.

The dynamometer showed a grasp of 26 with the right hand and 6 with the left, the normal grasp being 60 to 80.

Examination of the muscles showed no distinct change in their outline, except as regards the deltoid and some of the scapular muscles, which were slightly wasted. The muscles of the forearms appeared somewhat flabby, and those of the upper arms and shoulders even more so. The muscles of the thighs were also flabby, while those below the knee felt quite firm. The motions of flexion and extension at the elbow were free but not strong. [Nothing abnormal was noticed at that time as regards the intrinsic muscles of the hands, but a careful examination made recently, showed a slight, well-marked atrophy of both the thenar and hypo-thenar eminences, with a corresponding diminution of the electrical response. This was probably present at the first examination, but was overlooked because not sufficient to impair the motions of the fingers and thumb.] The foot was capable of being freely flexed and extended, as well as adducted and abducted, and the motions at the ankle, as well as at the knee were fairly strong.

The flexion of the leg on the thigh seemed to be rather weak; the extension relatively strong. Adduction and abduction of the thigh was rather weak; flexion of thigh on the body greatly impaired. No fibrillary twitching was seen anywhere, but the irritability of the muscles to a blow was much increased, so that a smart tap with the fingers caused a contraction both of the fibres in the immediate neighborhood and sometimes of a greater part or the whole of the muscle.

By an oversight, I omitted to record in my notes of this examination whether the knee-jerk was present or absent; but at an examination made four months later it was found to be present, but not lively, and it is the patient's impression that it was found to be present at the earlier periods as well. This would harmonize sufficiently well with the fact that the muscles moving the leg at the knee were relatively sound.

A careful electrical examination showed that the faradic irritability of the larger and smaller nerves was slightly diminished. The contractions of all the muscles most affected were, however, feeble and somewhat sluggish, and unless the electrode was placed carefully on the motor point, the reaction was diminished and perhaps delayed. The galvanic irritability of the nerve-trunks and branches was nearly normal, but slightly diminished (2 to 3 M. A. for the median and ulnar nerves, and deltoid muscles at the motor point). There was no reaction of degeneration.

There was no tenderness on pressure in the large muscular masses, as a rule, or along the nerve-trunks, but pressure about some of the joints, especially the hips and shoulder, and the joints of the left thumb, gave pain, and certain motions were still more painful. There were also one or two spots not in the immediate neighborhood of the joints which were painful to deep pressure. The patient could not notice any loss of

sensibility of the skin to touch whatever, and he did not complain of tingling or numbness in the extremities or elsewhere. The sphincters were reported unaffected. It may be remarked here, also, that there had been no complaint of gastro-intestinal irritation, even at the outset.

The diagnosis of progressive muscular atrophy of rapid course had been suggested by a careful and experienced observer before I saw the patient, and, while not fully satisfied with it, I could not with confidence uphold a less serious alternative. The severe pain and rapid onset suggested multiple neuritis, but several characteristic symptoms, such as paræsthesia and anæsthesia, were wanting, and the relative immunity of the muscles moving the hands and feet showed that, at least, it was not an ordinary case of that kind. The urine had, however, been examined for lead by Dr. Fitz's advice, though with a negative result, and in order to cover every possibility, I requested that it should be examined also for arsenic, and received shortly afterwards from Prof. E. S. Wood the report that a comparatively large amount of arsenic had been found.

On learning this fact, I took for granted, rather hastily, that the arsenic found in the urine must have come from the medicine which he had used five months before. When this paper was read, however, a member² of the Society asked whether the patient's wall-papers had been examined. I asked the same question of my patient, and he at once sent samples of all his papers to Professor Wood, who found them all free from arsenic, or containing only an insignificant trace, except one, and that contained a large amount. This paper came from the patient's guest-chamber, and he had slept there during the greater part of the two months (October and November) previous to the analysis of the urine, but at no other time, and he was never in the room except at night. The symptoms had already been present for nearly four months, and, in fact, he was led to occupy the room only on account of his sickness. The severity of the symptoms culminated at about that same period, but they had been, on the whole, increasing pretty steadily through the summer.

Although obviously not the cause of the illness, the exposure to this paper may very likely account for the arsenic found in the urine, and this deprives that piece of evidence of its value, and makes it improper to rank this case with those of unusually delayed elimination. I leave unchanged, however, what I first wrote down on this latter point, because of the general interest of this question. It should be said that the paper referred to had been on the walls for twenty-eight years, and that many guests had occupied the room for various periods, varying up to about a month, without injury to health so far as was known.

Since about the first of January, the patient has been improving steadily in all respects, so that he now stands erect and walks without waddling; can raise his arm to light an overhead chandelier, goes upstairs in a natural manner, and retains but a trace of the difficulty in rising from a chair. All the movements are still somewhat weak, but he can easily raise himself on either foot alone, and the grasp of the dynamometer is 34, right; 25, left.

The electrical examination gives essentially the
² Dr. W. N. Bullard.

same results as at first, but the reaction of the extensor com. dig., of which I have no record in the early examination, is now found to be markedly diminished, although there is no apparent difficulty in voluntary extension of the fingers or hand.

(To be continued.)

Reports of Societies.

THE ONE HUNDRED AND SEVENTH ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY, JUNE 12TH AND 13TH, 1888.¹

SECOND SESSION.

The exercises of the annual meeting proper were begun at nine o'clock, Wednesday morning, when the President, DR. GAGE, called the assembled Fellows to order.

The records of the last annual meeting were read by the Secretary, DR. FRANCIS W. GOSS, of Roxbury, and the annual reports of the Secretary, and of the Treasurer, DR. FRANK W. DRAPER, of Boston, were presented and accepted. From these it appears that there was at the beginning of last year in the treasury an unexpended balance of \$2,315.31; receipts during the year, \$8,989.65; a total of \$11,314.86; expenditures, \$8,799.15; leaving a balance of \$2,515.71; and there are invested funds to the amount of \$33,420.17. Dues to the amount of \$190 have been remitted. During the year 82 new members have been admitted; 33 have died; 12 have lost their membership by removal from the State; 2 have been dropped from the roll for non-payment of dues; 16 have resigned, and 4 re-instated, making a total of 1690, a net gain of 23 over last year.

RECOGNITION OF DIPLOMAS AS PREREQUISITE TO EXAMINATION OF CANDIDATES.

The question of concurring with the Council in voting to repeal certain resolutions being then brought before the Society, DR. W. L. RICHARDSON, of Boston, from the Committee on Medical Diplomas, made the following explanation of the action of the Council: A physician who had been educated in a good homœopathic school desired to renounce homœopathy and applied to the Suffolk Censors for admission to the Massachusetts Medical Society, but could not be examined because he did not have a diploma from a school now recognized by the Society. The Committee on Diplomas recommended therefore the repeal of the joint resolution which forbade examination in such cases, and such action had been taken by the Council.

DR. F. I. KNIGHT, of Boston, moved to concur with the action of the Council. DR. A. B. MORONG, of Boston, seconded the motion, saying that he believed the rule of the Society which attempted to prescribe the school where a man should be educated, was absurd, unjust, and illegal. The same spirit of injustice refused to recognize the diplomas of the College of Physicians and Surgeons of Boston. He had no interest in that school, but he wanted it fairly dealt with. He would make the examination for admission more rigid and practical than now, but he would not dictate where a man should study. The motion was carried unanimously.

On motion of DR. W. L. RICHARDSON, of Boston, it was voted to indefinitely postpone a communication from the Georgia State Medical Society in regard to

admitting surgical instruments, etc., to this country free of duty, and another from the Arkansas State Medical Society protesting against the custom of religious journals to print quack advertisements and against clergymen's endorsement of quacks.

DR. W. EVERETT SMITH, of Boston, moved the appointment of a committee of three to cooperate with Prof. N. S. Shaler and Gen. A. W. Greeley of the Signal Service in the investigation of

THE RELATION OF DISEASE TO THE SOIL AND CLIMATE OF MASSACHUSETTS.

The motion was seconded by DR. H. I. BOWDITCH, of Boston, but amended so as to make the committee consist of one, on motion of DR. F. I. KNIGHT, who said that Dr. Smith would have all the work to do, and ought to have all the credit. The motion was carried and Dr. Smith appointed.

The committee appointed at the last annual meeting to consider the subject of

PHYSICAL CULTURE IN THE PUBLIC SCHOOLS, made a report which was read by DR. C. F. WITHINGTON, of Roxbury. It called the attention of the Society, first, to the need of some method of physical culture, particularly for the children of large cities and towns; second, to what has already been done in some quarters toward providing this need; third, to a consideration of what seems to be practicable for schools, and particularly the public schools, to undertake for the physical training of their pupils. In the latter direction it outlined a method by which classes of from twenty to fifty might march and go through free exercises and light gymnastics. Apparatus could be purchased for a small sum, the school piano could furnish music for regulating the rhythm. No particular system of exercises was advocated, but those adopted must be interesting and demand alertness and promptness. Persons qualified by study and experience for the work would have to be employed, yet, if the regular teachers in the schools were put under the general oversight of a supervisor of physical culture, these exercises might be successfully conducted and that, too, at a very slight cost. The committee finally recommended "that this Society, approving the spirit of the above resolutions, present them with the foregoing report to the Massachusetts State Board of Education, and respectfully but earnestly urge upon that body such action as will bring this important subject to the favorable attention of local school boards in the towns and cities of the Commonwealth." The report was signed by the three members of the committee, DR. Z. B. ADAMS, of Framingham, E. H. BRADFORD, of Boston, and C. F. WITHINGTON, of Roxbury.

On motion of DR. E. H. BRADFORD, of Boston, the recommendation was adopted.

The first paper of the morning was entitled

POSTURAL TREATMENT OF CONSTIPATION,

by EDWARD T. WILLIAMS, M.D., of Roxbury.

The speaker believed a faulty posture at stool was a common cause of constipation. The act of defecation resembled the expulsive state of labor, bringing into play the diaphragm and abdominal muscles. The same disposition to muscular effort aids both. While the ordinary occupant of the modern water-closet takes things easy with newspaper and cigar and obtains an imperfect evacuation, the traveller in the woods assumes a physiological attitude and squats. The dog,

¹ Concluded from page 626.

cat, and pig approach the same attitude. A proper posture is a sufficient cause for passive constipation. Water-closets should be so altered as to allow a stooping and not a sitting posture, and a change in this direction would do away with much medicine.

The next paper was upon

THE SURGICAL TREATMENT OF MALIGNANT GROWTHS, by MAURICE H. RICHARDSON, M.D., of Boston.

Dr. Richardson's paper was based upon an analysis of all the cases of easily accessible tumors treated by excision in the Massachusetts General Hospital from November 1, 1877, when antiseptics began, to January 1, 1887. These probably included some growths not malignant, and to a certain degree the statistics are not accurate, but some justifiable inference can be drawn from them. It was intended to investigate the subsequent history of all the cases so far as possible. Of the 833 cases, 498 had been heard from; and of these 251 were living and 247 were dead. Dr. Richardson took issue with Dr. Hodges' recent statement that operation for cancer of the breast is exceptional or soon will be. From the tables he had compiled he was led to believe that early diagnosis and excision in malignant growths were advisable. Two prominent causes of failure were lack of thoroughness and insufficient attention to glandular infection. Operation for cure should not be done unless all the growth can be removed, but of course operations for mere palliation do not demand this condition. The best time is the earliest possible, and removal should be complete without reference to scar or mutilation. The infection of lymph-glands was almost a contra-indication for operation. The speaker would, in operating for mammary cancer, dissect out the axilla and remove all its fat. This method adds to the danger of the operation and impairs the mobility of the arm.

Dr. H. H. A. BEACH, of Boston, spoke as follows: I wish to record my vote of appreciation for the time and patience which Dr. Richardson has expended in preparing the valuable and interesting paper which he has just read. His statistics, if somewhat disappointing at first sight, are a verification of the traditions and experience of the hospital surgeons in operations for the removal of malignant disease. The apparently slight increase in mortality in breast-cancer may be fairly accounted for by the fact that cases which were not considered appropriate ones for operation some years since, because of glandular infection, are now, with the aid of modern antiseptics, made less dangerous undertakings to the patient in so far as *septic* disease is concerned, but the mortality from a more rapid recurrence of the cancer is inevitably greater in many of the cases, from the fact that a majority of the patients report to the hospital too late to ensure a radical removal of the disease.

What constitutes a radical removal, is the question naturally suggested by the foregoing, and that, in turn, brings to the front the old question of the local or constitutional origin of cancer.

From one hundred years ago, in the time of Benjamin Bell, when he advocated the doctrine of "a cancerous diathesis, produced not by any original affection in the constitution, but by a local ulcer," to the present time, which has developed a revival of Bell's idea,²

a radical removal of cancer means an incision far enough into the sound periphery of the growth and infected glands to be sure that nothing is left but sound tissue. Gross goes so far as to state that 9.05 per cent. result in permanent recovery, and that a radical cure may be assumed if three years pass without recurrence. The localist must assume that enlarged glands furnish the sole evidence of infection; otherwise, how is he to judge of infected and non-infected tissue?

How can he be sure that, having removed enlarged glands because of their infection, there are not left beyond his reach infected tissue or glands not yet enlarged?

The recurrence or non-recurrence of the disease after such removals is the only fact that can settle the still disputed question of constitutional tendency. That a diversity of opinion upon the subject prevails among the most eminent observers, including pathologists and surgeons, is the best evidence that surgeons holding the idea of a local origin of cancer have not yet by their results demonstrated the infallibility of the theory.

Sir Benjamin Brodie, who must have occasionally made a clean sweep of the disease before it had reached the axilla, in a series of five or six hundred operations, concluded that the removal of the cancerous breast tended to shorten life.

On the other hand, there can be no question, to quote Mr. T. W. Nunn, of the Middlesex Hospital, the operation "may be undertaken on principles which do not involve a belief in its local nature."

I cannot conclude without urging the expediency of removing the first growth of cancer in select cases. I do so upon the firm conviction, based upon experience, that by so acting life may be prolonged, a certain amount of immunity from bodily suffering and mental stress may be ensured, the chance of freedom from all local suffering is given, and that when, unhappily, the recurrence of the disease gives rise to ulceration, the duration of that distressing state is shortened. The conservative principle that underlies Dr. Richardson's essay provides for the greatest service to the patient with the least expenditure of life and vitality.

It is as equitably employed in the removal of an ovarian tumor endangering life as in the preservation of the tip of a finger at the expense of a routine amputation.

It provides excisions for amputations, and is none the less conservative when surgeons who sacrifice their surgery to their knives fail of its comprehension. Dr. Richardson will doubtless recall that many cases seeking hospital treatment do so after malignant disease has become well advanced, the glands of the immediate vicinity infected, and the patient's general condition bad through pain, hæmorrhage, and other causes.

In such a class of cases, where it is impossible to make a wide sweep into the healthy tissues, or one sufficient to insure a long immunity from recurrence, the relief from pain and hæmorrhage resulting from the removal of a mass of disgusting disease, with strict antiseptic precautions to insure the patient from a worse set of symptoms through septic poisoning, justifies operations that otherwise should not be undertaken.

Many operations of this character are done in all large hospitals, where proper after-care and attention

² See the papers of Mr. Henry Arnott, St. Thomas Hosp. Rep., 1872; "Antecedents of Cancer," by Mr. De Morgan and the late Mr. C. H. Moore, and the more recent ones by Dr. S. W. Gross in this country.

is practicable. Such cases show a rapid return of the disease, and so unfavorably impress statistics. They are none the less justifiable if they furnish a reasonable amount of relief. While it has been claimed by an eminent authority, on the one hand, that the time would come when cancer of the breast would not be operated upon, strong arguments are presented, on the other, in favor of its local character and of operations calculated to radically remove the disease by excision of the breast and clearing out the axilla.

Surgeons of large experience will readily recall cases where to have followed the first dicta would have consigned their patients to a premature grave, in place of years of comfort and happiness. To have accepted the second would have put them in the position of attempting an anatomical impossibility: that of completely removing the glandular, lymphatic, and fatty structures of the axilla, excepting in the cadaver. Either of the tissues named may be infected by the disease, and the only excuse for clearing the axilla that can be reasonably offered is that it is in the usual line of the extension of the disease, and provides for the removal of a wider periphery of sound tissue from the centre of infection. This procedure may offer a longer immunity from recurrence, if done sufficiently early, the gland having been enlarged by irritation in place of infection, and time may prove it to be a cure, but for the present the question is yet undecided for want of sufficient evidence.

The last paper of the session was the following:

THE VALUE OF CORROSIVE SUBLIMATE AS A PRACTICAL DISINFECTANT,

by WILLIAM B. HILLS, M.D., of Cambridge.

Dr. Hills said that we had been obliged to revise our beliefs as to disinfectants in the light of the germ theory of disease. Corrosive sublimate had a wide endorsement, but it was really of limited application. It was an efficient practical disinfectant for certain things, such as surfaces which will not themselves be injured, and which are not covered with material that will destroy the power of the disinfectant. It is unreliable for sputa, excreta, soiled bedclothing, etc. Coagulated albumen interferes with its efficiency. In chloride of lime we have a far better disinfectant for excreta. The report of the American Health Association, endorsing the general use of corrosive sublimate, was very defective. It had seemed to the speaker dangerous to use a solution of corrosive sublimate in watering the streets, as the street-beds would some time become saturated with mercurial compounds whose dust would be constantly inhaled.

Dr. S. H. DURGIN, chairman of the Board of Health of Boston, said that the streets were sprinkled with a dilute solution of corrosive sublimate, but that they were soon after swept up, and he did not think there was any danger of it becoming dried into the street-beds.

The following delegates were then invited to address the Society, of whom the first two responded with brief speeches: Dr. Albert Potter, Rhode Island Medical Society; Dr. Frank Woodbury, Pennsylvania Medical Society; Dr. O. W. Phelps, Connecticut Valley Medical Association; Dr. O. W. Stone, Maine Medical Society; Dr. John B. Wheeler, Vermont Medical Society; Dr. Henry M. Penno, New York Medical Society; Dr. W. L. Stevens, Rhode Island Medical Society.

THE ANNUAL DISCOURSE.

After a brief recess the Fellows were called again to order to listen to the annual address, by Dr. B. JOY JEFFRIES, of Boston, upon

RE-ESTABLISHMENT OF THE MEDICAL PROFESSION, which has been published in the JOURNAL.

At the conclusion of Dr. Jeffries' address, the retiring president of the Society, Dr. Gage, in a brief speech, introduced his successor, Dr. DAVID W. CHEEVER, of Boston, who addressed the Society as follows:

Fellows of the Massachusetts Medical Society.—I assume with diffidence the honorable position to which your good will has called me. The Massachusetts Medical Society is the central, conservative power of our Medical system. It masters all the specialties revolving in erratic orbits, and re-attracts them to itself. It resists the centrifugal forces of quackery and delusion, and binds the honest physician to itself by the cohesive power of truth.

A common scientific training, a love of our profession, and sincerity in promoting the welfare of the sick constitute the freemasonry of medicine. Such an union can never be dissolved. It is organic, vital. To promote harmony, and to cement the union of our honorable Society will be my earnest endeavor.

May I be as successful in conducting your affairs as he who now yields the helm into my hands, your retiring president.

RECEPTION AND BANQUET.

Shortly after one o'clock the usual procession was formed, and the Fellows of the Society, in the order of seniority, walked, two by two, to the Hotel Vendome, the procession reaching from the institute to the hotel, and containing not far from a thousand members. Soon after entering the hotel their hats were checked and their tickets taken, and they passed on to be received by the anniversary chairman, Dr. CHARLES B. PORTER, together with Governor Ames, the retiring president, Dr. Gage, and the president-elect, Dr. Cheever. From the rotunda they proceeded on towards the dining-room, meeting on the way members of the reception committee and guests of the Society. In the dining-room an elaborate lunch was served. There were no formal exercises whatever, the afternoon being wholly given over to the pleasures of the table and social enjoyment.

Among those present, besides the Society's officers were some of its older members—Drs. Oliver Wendell Holmes, H. I. Bowditch, George C. Shattuck, Henry W. Williams, B. E. Cotting, Francis Minot, George H. Lyman, William Cogswell, Alfred Hosmer, B. Joy Jeffries, and William Ingalls. There were also present, among the guests of the Society, Rev. Phillips Brooks, Rev. E. E. Hale, Rev. G. A. Gordon, Rev. Stopford Brooke, Hon. G. S. Hale, Causten Browne, William Endicott, Jr., Prof. C. S. Minot, Past Assistant Surgeon F. B. Stephenson, U. S. N., Medical Director R. C. Dean, of the Chelsea Naval Hospital, F. L. Ames, Solomon Lincoln, Dr. B. A. Gould, Surg. Thomas N. Penrose, U. S. N., E. F. Bowditch.

The lower floor of the hotel had been reserved for the use of the Society, and its decorations were remarkably handsome, large palm trees, potted plants and bunches of roses and other flowers being disposed in the parlors and halls in rich profusion. From be-

hind a hedge of evergreens a detachment of Baldwin's orchestra sent forth their usual music. Another detachment was stationed in the banquet-room, and with these thirty skilled musicians the reception did not lack for harmony.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.¹

ALBERT N. BLODGETT, M.D., SECRETARY.

DR. R. W. LOVETT read a paper on

A CLINICAL CONSIDERATION OF SIXTY CASES OF
CEREBRAL PARALYSIS IN CHILDREN.²

DR. S. G. WEBBER, in opening the discussion, said: Dr. Lovett's paper is so complete that there is very little to say in regard to the paper and the points he has made. I have seen a good many of these patients, but I have not had time to look over my notes and make any sort of a summary of those that I have seen. They would correspond in general with Dr. Lovett's description. I think Dr. Lovett gives to the profession in general, a little too much credit as to the knowledge of diagnosis between such cases and infantile paralysis of spinal origin. From what I have read of cases reported, and from what I have seen of cases that have been sent to me, I do not think the distinction is widely made. The students who are taught now, or have been taught within the past few years, would probably make the distinction, but the doctors who were taught twenty or thirty years ago, I think, a good many have not kept themselves posted in regard to the distinction between these two classes. I have had many patients sent me with the idea that the paralysis was of spinal origin when it has been of cerebral origin. They were sent with the idea that electricity would be of benefit, or some other treatment, and it has been necessary to simply state that nothing could be done for them. I think when he publishes the paper that a little more space given to diagnosis between the two affections would increase the value of the paper.

My impression, (of course it is rather a rough impression, not supported by looking over my notes), is that in the cases that I have seen, which have existed long enough, epilepsy is rather more frequent than in Dr. Lovett's cases. As his cases have been among young children, there may not have been time enough for epilepsy to develop, for sometimes it does not appear until quite late. In many cases of epilepsy there is a history of very slight paralysis in infancy, a paralysis which was almost entirely recovered from, so that there was scarcely any trace of it; perhaps the injury to the brain was not very near the motor tract, or did not implicate the motor tract to a very great extent. Of course, it is necessary to speak to parents about the possible occurrence of epilepsy, letting them understand that it is to be expected, and they are to be on the watch for it. I think, if the parents are thus on the watch, the severity of the epilepsy can be modified, that it will not progress quite so rapidly if the child is under treatment.

Some years ago I was interested in the athetotic movements, sometimes occurring after cerebral dis-

turbances and looked up the literature of the subject, and found that in almost every case that was fully reported, there was a history of trouble in infancy; generally, paralysis of the hemiplegic form, and all the autopsies tended to locate the lesion in such cases in the neighborhood of the optic thalamus and the posterior limb of the internal capsule. Possibly in Dr. Lovett's cases there had not been time enough for this movement to develop, but I am rather surprised that he didn't find more athetosis.

I agree fully with Dr. Lovett with regard to the treatment and its comparative little advantage. I think time and mental training, that he has referred to, does perhaps, more than anything else. I have had a number of children brought to me, where I have advised the parents to wait and see how they would do, and have heard from them some years afterward, as very much improved; but they have not reached, as Dr. Lovett says, the average intelligence of the community. I have reference now to the severer cases.

I don't know whether Dr. Lovett has made any comparative examination, but I think it would be an interesting point in regard to the retarded development, whether there is a greater retardation in growth in these cases of cerebral paralysis than in cases of spinal infantile paralysis; whether the limbs are shorter, that is, whether the bones are retarded in growth more in these cases than where the spinal cord is affected. Speaking from memory, I think I have seen more extensive disturbance in that direction, and greater shortening of the limbs in cases of cerebral paralysis than spinal, and I think it would be interesting to learn whether it is habitually so. The muscles are comparatively less affected; the bones more so.

DR. J. J. PUTNAM said: I think Dr. Lovett has given us a first-rate paper, and of the many points of interest which it suggests, I will only say a few words where my own experiences touch the matter. Knowing that the paper was coming on, I rather hurriedly ran over the out-patient records of the Massachusetts General Hospital, and found that in the last two years, we had had there for treatment, seventeen cases such as he describes. Of these, twelve were cases of hemiplegia, and five of spastic paralysis. In the cases where the spastic paralysis was present, the disease had practically been congenital; it had come on apparently in connection with labor or else with some influence preceding the confinement of the mother.

The youngest of the hemiplegic patients was six months old when attacked, and from that they have gone up to seven years, which was the oldest. In one of the cases of hemiplegia there had been three slight attacks.

Some of the lesser points also seemed to me very interesting; first, in regard to the spastic gait and the increased tendon reflexes, especially the knee-jerk. In one of these spastic cases, where the child walked with very great difficulty, and where there was considerable rigidity of the muscles, which, however, the child could apparently relax, or prevent in a measure by a strong effort of the will, the knee-jerk seemed to me to be absent, and at the same time a blow upon the muscular substance, as for instance, upon the quadriceps extensor cruris, would cause a marked contraction which would throw the leg out.

The fact that these spastic cases are of cerebral ori-

¹ Concluded from page 573.

² See page 641 of the Journal.

gin, is shown by the further fact that the arms were affected in almost all of them, if not all, as well as the legs; and although not affected in both arms to the same degree, the cases were not like those of Dr. Lovett, who said that some of his cases were cases of hemiplegia which afterward developed into spastic paralysis. In one of them the statement of the mother was that the arms had been affected later than the legs, but that, I take it, was an error in observation.

I will mention one case also which I saw in private practice. The child at birth showed the symptoms which I have rather been in the habit of attributing to meningeal hæmorrhage, although it has been suggested that they may be due to anæmia of the brain; namely, difficult breathing and other severe symptoms with great prostration; and developed later into a case of spastic paralysis, with one arm involved more than the other. The interesting fact is that a number of years later an acute typical spinal infantile paralysis developed itself, and it was for that he was sent to me. I did not suppose that there was any connection between the two diseases, but it seems worth putting on record that they occurred in the same person.

There is one class of cases Dr. Lovett did not speak of that seems interesting in the same connection, although the pathology is obscure and the cases rare, and that is the class that has been called double athetosis. There are most extreme disorders of movement of the athetotic variety, associated with very marked ataxic movements, affecting usually, both sides of the body, the arms, legs and face, the muscles of articulation, as well as the extremities.

I have in my mind very distinctly three cases of this kind, each of which was almost an exact copy of the other. I have thought that they might be those to which Dr. Lovett referred when he spoke of the fact that the intelligence of some of these patients is so low, because these patients have all the appearance of very impaired intelligence and yet the condition is by no means incompatible with very fair intelligence. Two of these children were very docile, and one of them has in many respects shown evidences of brilliancy, although not of a well-balanced mind. The third case of this sort was one whose father was syphilitic. He was unable to feed himself, and was idiotic. He died, and I made an autopsy, with the aid of Dr. Walton, but we had to do it very hurriedly. The brain, to all appearance, was perfectly normal. I dare say that with greater knowledge and further research something would have been found. There was certainly no gross lesion; and no change in consistency suggesting diffuse sclerosis. I have, to-day, examined a part of the spinal cord without finding any trace of descending degeneration, which one would expect to be probably present if there had been a distinct lesion in the motor tract.

As regards the pathology in these cases, and especially the pathology in poliomyelitis of Strümpel, a case has been recorded quite recently, which I saw an account of the other day, by Ruhemann, where the patient died, after six hours, of convulsions, with high fever, which had been preceded during the previous week by fever and symptoms of malaise. An autopsy was made and a condition was found, which he considered to be the first stage of poliomyelitis. There was a change of color in the gray matter of the convulsions, and flattening of the con-

vulsions on one side of the brain, and cloudy swelling of the gray matter, and there was entire absence of hæmorrhage, or embolism, or tumor, or any gross lesion.

One other point I would like to refer to, and that is, in one of the cases that I saw to-day, that I believe Dr. Lovett has seen also, the arm which was least affected by this disordered movement in one of these spastic cases appeared to be the one which was most atrophied. I don't know of any explanation, unless the one which was in motion had the muscles kept in good condition by the very fact that they were the subject of athetotic movement.

I will only say further that in one of the hemiplegic cases that I have notes of, there was an exaggerated knee-jerk on each side, which seemed very likely to indicate a transition to the spastic paralysis. I think this paper is of great interest, and I offer these remarks to show my respect for it, rather than for any other reason.

DR. T. M. ROTCH: I think that Dr. Lovett's paper deserves a great deal of praise. We all need to be taught about these cases, and it is important that we should learn to make some sort of a general diagnosis.

I think the points of diagnosis are stated very clearly, and it would, as Dr. Webber has said, add to the paper when it is printed, if a still more general diagnosis were made between poliomyelitis and what I have been in the habit of calling poliomyelitis. It can be done very easily indeed, I think, where the two diseases are brought together as illustrative cases. They show very well in the difference of the tendon reflexes, and also the elbow reflexes. Points of this kind, will help the general practitioner in making a diagnosis. It is certainly important to make a differential diagnosis because we all should be able to make the distinction between these diseases of the cord and brain, in order to refer them to the specialist, that they may have proper treatment.

In regard to poliomyelitis, I am rather sorry that Dr. Lovett thought that it was necessary to drop the name; I have been in the habit of covering my ignorance by using that as a general term. I found that it made a rather obscure disease somewhat more simple in comparing it with the cases of poliomyelitis. At the same time, in speaking of spastic paraplegia, I was very glad to have that brought into the general class of cerebral paralysis; I think that will make it easier for us, rather than having it in a separate class.

In regard to the diagnosis, it is important, of course, to make a diagnosis between the cases of spinal origin and those of cerebral origin; I would be glad if more could be said about the early diagnosis. In the first week or ten days, it is, it seems to me, difficult to make the differential diagnosis between the cases of poliomyelitis where there are convulsions, unconsciousness, and the child in a state of stupor, perhaps for a great number of days, and the early stage of acute cerebral paralysis, which corresponds, very closely to and may simulate certain cases of tubercular meningitis in the young infant, in which the type of the tubercular meningitis differs from that of the older child, in that it takes a more acute form, and corresponds, perhaps more to the type of the simple meningitis in the older child. Points of this kind would be very interesting, I think, to the profession in general, if Dr. Lovett

would bring them out in his paper. I think he has made everything so clear by not attempting too much, that it has taught us all a great deal. I am sure that I feel very much indebted to him for what he has taught me this evening, although I suppose that I must get rid of the term polioencephalitis. I am very glad to adopt some general term for these cases.

It seems to me from seeing a large number of cases of nervous disorders that the cases of athetosis must be very rare. I have endeavored, whenever there were any cases of the kind, to get them together, to show them to the students, but I find that it is hard to get these cases, while the other class of cases can be had at almost any time. I thought it would be interesting for me to report a case which I supposed to be one of cerebral paralysis with this athetotic condition, which was presented at my clinic by Dr. Townsend, who brought it as an illustrative one for the students to see.

May B., thirteen years old. Family history good; was a healthy, breast-fed baby. When six months old, it was noticed that she could not move right arm or leg, and she was unable to walk till eighteen months old. At first the right leg dragged in walking, but the power in the arm and leg was gradually regained. For the last four or five years there have been constant irregular muscular movements in right hand and arm, hyper-extension, and spreading of the fingers, and occasionally and to a less degree, irregular movements of the right foot. When thirteen months old had a convulsion, another when two years old and four years old. Since then has had convulsive attacks at frequent intervals several times a week, and even two or three daily. Up to a year ago the convulsive movements were limited to the right arm and leg, the foot drawn into the position of varus, and partial or complete loss of consciousness. For the last year the convulsions involve both sides of the body. Intellect fairly good. Circumference of right upper arm, 8 inches; left upper arm, $7\frac{3}{4}$ inches; right forearm, $8\frac{1}{4}$ inches; left forearm, $7\frac{1}{4}$ inches.

A case also occurred at the City Hospital which might be called a case of post-hemiplegic chorea, where the girl, fourteen or fifteen years old, had these movements, with distortions of the fingers, and where the movements could be controlled by the will. Dr. Folsom and Dr. Knapp saw the case, and will be able to tell more of the particulars. In addition to what I have said in reference to Dr. Lovett's paper, I wish to speak of Dr. Knapp's paper, which, I think, has been of the greatest use to the general practitioner in making a differential diagnosis and in getting at a clearer idea of these cases than most of us are fortunate enough to have.

Dr. BRADFORD: Most of the cases of this class that I have seen have been lighter cases, where the question has been one of locomotion. In regard to the treatment, it is well known, as Dr. Lovett has said, tenotomy has, for some reason or another, a great benefit; and it is a permanent benefit. In cases of contracted tendo-Achillis, where the operation is done, the tendo-Achillis does not re-contract.

The benefit is so marked that I have thought that if we could divide all the muscles that are affected we might have a cure. Of course that is theoretical rather than practical. I have, however, divided the hamstring muscles by an open division with success—I made an open division in order that it

might be thorough—and I think, when locomotion is the question, that section will afford a help that has not been procured, and which is not afforded in any other way. I have attempted, in some cases, to stretch the muscles without division, and in one case of double spastic paralysis I was able to assist the patient quite materially. By apparatus we can correct the contraction of the hamstrings, and can also correct the adduction in a measure.

There is another way where we sometimes see an advantage from treatment in the hands, and that is in careful and thorough training. In one instance of a boy of fourteen with a cerebral paralysis which manifested itself in his right hand, and in the muscles of the tongue, the boy was practically made speechless, and was unable to feed himself or use his right hand although he had sufficient intelligence. I put him under the care of a teacher of visible speech in the Horace Mann School. He lived in the family of the teacher, and, to my surprise, at the end of a year, he was able not only to speak quite distinctly and intelligently, but he was able to feed himself and use the right hand. There was some impairment of intelligence, but not great.

There was one point that Dr. Lovett did not mention, although I dare say he did not consider it necessary to mention, in regard to the pathology of these cases, the case reported by Dr. Bullard recently, of idiocy with a spastic hemiplegia, where Dr. Bullard was able to locate the seat of the spastic trouble, and where operation proved his diagnosis was correct, and showed quite conclusively the existence of polioencephalus as a cause in that instance—probably polioencephalus due to an injury at birth. I have made inquiries in all the cases that I have seen—I think twenty or twenty-five, I cannot recall the exact number—in regard to the difficulty of birth, and in no instance have I found any case where it occurred.

In regard to the case which Dr. Webber spoke of, as to the shortening of the bone, my experience has not agreed with his in that matter. I have seen, I think, some twenty-five cases, of spastic paralysis, some of them being unilateral, and in no case have I found any shortening of the bones. Of course, in an equal number of cases of infantile paralysis it is not uncommon. I will say that the cases that I have seen have all been children, and but one in an adult, and that was double.

Dr. EDWARD REYNOLDS said: The obstetrical question that Dr. Lovett's paper suggests is a decidedly interesting one, and one on which, curiously enough, little has been written, perhaps on account of its rarity, and its entering into another specialty. So far as I know the evidence for and against the question rests chiefly upon two sets of papers, a number of papers written from the standpoint of the pathologist, and in addition this paper of Dr. Lovett, practically the only one which reports any large number of cases besides the paper of Mr. Little, whose cases Dr. Lovett refers to.

The evidence of the pathologist is of some interest. The pathologists find in these cases, as Dr. Lovett has told us, lesions of one sort or another in the cerebral tissue, very much such as are well known to occur after some cases of difficult labor. After extremely long and powerful compression of the head in head-presentation it is not at all uncommon to find, on the examination of the still-born child, that there has

been actual laceration of the brain tissue, and laceration of the minute vessels of the brain. In direct connection with these cases, but of less severity, are certain not very common cases, in which the child is born healthy, but unconscious, which cases terminate either by death after a few days of lingering unconsciousness, or by a gradual return to the normal state. It seems very possible that some of these may be cases where the injury to the brain was not sufficient to kill the child, but still enough to create unconsciousness. And the argument, as I understand it, is, that it is possible that some of these cases recover after injury to the cerebral tissue or vessels, but in time go on to develop cases of cerebral hemiplegia or spastic paralysis.

I think it is especially important and interesting that in these cases of Mr. Little and Dr. Lovett, the proportion of cases delivered by breech presentation or version, that is, with extraction of the after-coming head, is extremely large, and it is in just those cases that lesions at the base of the brain or in the medulla are especially frequent. The chief interest to me, however, lies in the character of cases reported. Mr. Little reported in 1862 seventy-one cases in which he had obtained a report of the labors, and in almost every instance from the physician who attended the case. He states that in every one of these cases there was "some difficulty or abnormality in the labor."

I quote his words because he seems to use them as interchangeable terms. He says that there was "some difficulty or abnormality in the labor." In simply reading over Mr. Little's paper, his inference that obstetrics take a prominent part seems to be well borne out, but on closer consideration it appears that Mr. Little's definition of abnormal labor is a very peculiar one, and I think an attempt to classify the specimens of labor which he includes in the term "abnormal or difficult labor" leads to rather interesting results. In the first place, a very large proportion of his seventy-three cases are abnormal only in the occurrence of phenomena which are of little interest. He reports three cases of *abnormal labor*, because the cord was twisted around the neck of the child, an occurrence which happens once in every three cases of normal labor. There were also several cases of asphyxia after an easy labor. Adding together Mr. Little's sixty-three cases and the thirty-three which Dr. Lovett reports, we have ninety-six cases. In thirty-two of these, or just one-third, there was no abnormality of labor which could fairly be called such, and I should define my own meaning by saying that there were no cases of excessive pressure reported, no excessively long duration of labor, no instrumental interference, no distinct pathological factor in the labor.

In one-third of these cases, then, including the cases of Mr. Little, the labor was normal. In one-third more the labor was what must be called a difficult labor. In the remaining third, almost all of which were from Mr. Little's cases, the case was one of a short and rapid delivery of a premature child. These are quoted in Mr. Little's classical paper as cases in which cerebral trouble was due to difficult labor. It seems to me that the argument should be that they were cases in which the cerebral trouble was due to the imperfect cerebral development of the child. We know the disadvantages under which the seven months' child goes on to the complement of his nervous system.

He has to carry on that development by the aid of a system of themselves imperfectly developed organs, which were intended to be developed by the mother, with almost complete rest of the child. In place of that, these imperfect organs have to support the child, and in addition have to develop themselves. It seems to me, in spite of the well-known belief that premature children which live what would have been term do well, that the occurrence of so very large a proportion of premature children in a series of such cases points strongly to the theory of imperfect development as the cause of these troubles. Of the cases in which difficult labor occurred, nine were breech or version cases—a very large proportion. Of the remaining twenty-three, eleven were terminated by forceps; twelve delivered spontaneously. Out of these eleven, seven were for mechanical causes, and there is no criticism to be made. Some of them may have been easy forceps cases done for inertia.

But of Mr. Little's cases I think a very strong criticism can be made. They illustrate well the fact that difficult labor may exert some influence upon these cases.

We must remember what the British practice of obstetrics was twenty years ago. The cases ranged from eight hours to ten or twenty or more hours of difficult second-stage labor, followed, with most of them, by delivery by natural efforts. It certainly would not surprise any obstetrician to-day to be told that such labors as those, even if the child survived, might produce serious intra-cranial trouble. And I think we must admit that among the remote consequences of excessive pressure or the extrication of the after-coming head we should reckon the possibility of a lesion of the brain which may result in the future in some form of cerebral trouble. We might be taught, too, that this possibility of the supervision of cerebral trouble in later life is only another plea for the use of the forceps, rather than for suffering the case to go on until the mother or child show so much exhaustion as to risk the life of one or the other.

Mr. Little makes a great deal of asphyxia, and reports as such, cases which I cannot help thinking were not such.

He reports one case in which the child was born somewhat cyanosed, began to breathe slightly very shortly after birth, and remained in a condition of very slight respiration, but total unconsciousness for two days. Certainly such cases of asphyxia neonatorum are very rare, and I think that in that case there was already intra-cranial injury. There are other cases of extreme length, and these are rather cases of unconsciousness than cessation of respiration. Thus I should be inclined to think that asphyxia is of rather less importance than he makes it.

Dr. ROTCH also said, I would like to ask about cases of cerebral atrophy. I believe that such cases are now acknowledged to exist, and I should think that it would be well to bring in that class of cases. I should like to know whether such a disease really exists and is separated from these other cases. There has been quite a discussion on the subject before the New York Academy of Medicine lately, in which they seemed inclined to separate these cases from cases of hæmorrhage, etc.

Dr. WEBBER: Simple atrophy of the brain?

Dr. ROTCH: Yes.

Dr. WEBBER: I have not looked up the matter.

DR. ROTCH: It has been discussed lately in New York, in the Section on Pediatrics, and it seems to me that if there is such a disease it would be well to separate.

DR. LOVETT: It seems to me that these cases would come in the class of idiocy, because chronic hydrocephalus causes cerebral atrophy, and that is one of the well-known causes of idiocy, and the idiopathic atrophy that resulted in idiocy I would put in the miscellaneous class.

DR. ROTCH: This seemed to be something more — a general muscular weakness.

DR. LOVETT: A number of the children that I saw undoubtedly had cerebral atrophy. There seemed nothing positive about them at all.

I think it was Siebert who wrote an article upon this subject, especially in reference to a child who was presented at Dr. Jacobi's house. Various diagnoses were made, but the autopsy later showed simple atrophy; and the symptoms were characterized by general muscular weakness. I would like to ask Dr. Putnam whether he would separate them.

DR. PUTNAM: I don't know any disease where there is atrophy without pressure of some kind.

DR. ROTCH: It is supposed to be simply a lack of development.

DR. PUTNAM: Of course there are different degrees of lack of development, just as one finds in the anencephalic fetus. I suppose you mean with well-formed head.

DR. ROTCH: They are not anencephalic, I think they have a well-formed head.

DR. PUTNAM: There is a condition described as diffuse sclerosis of the brain, associated with atrophy of some of its nervous parts as found in the child, but I do not know anything beyond that.

DR. LOVETT: I would be very glad to accept the suggestion of Dr. Webber and Dr. Rotch about the diagnosis. I simply left it out because the paper was so long. I should be very glad to put it in.

MAINE MEDICAL ASSOCIATION.

THE thirty-sixth annual meeting was held as Portland, June 12th, 13th, 14th, 1888.

TUESDAY, JUNE 12th.—FIRST DAY.

The Association was called to order at ten o'clock, A. M., by the President, DR. F. C. THAYER, of Waterville. After prayer by REV. HENRY BLANCHARD, of the Congress Square Universalist Church, and the disposal of the records, DR. W. F. HUTCHINSON, of Providence, was received and welcomed as a delegate from the Rhode Island Medical Society.

The report of the Treasurer DR. A. THAYER, of Portland, was read and accepted. This report shows a cash balance of \$948.56.

After the transaction of some minor business and the election of several new members, DR. E. L. NEALEY, of Bangor, read a paper on the

"USE AND ABUSE OF THE MICROSCOPE,"

containing valuable suggestions to the general practitioner on the selection, care and manipulation of that useful instrument, and the best methods of preparation and examination of clinical material.

DR. WILLIAM OSGOOD, of North Yarmouth, visitor to the Portland School for Medical Instruction, re-

ported as to his visit during the year past and the excellent condition and continued high standing of the school.

The special committee appointed at the last annual meeting to ascertain the exact status of the

MEDICAL REGISTRATION LAW, OF 1887.

made an exhaustive report reviewing the circumstances attending the passage and subsequent vetoing of the bill and containing opinions from eminent legal counsel. The report recommended the prosecution of proceedings already prepared, to be instituted against the Secretary of State by mandamus in the Supreme Court. Consideration of this report and its recommendation was deferred until Wednesday at 11.30 A. M.

Drs. A. J. Fuller, of Bath, S. C. Gordon, of Portland, T. L. Estabrook, of Rockland, were appointed visitors to the Maine Insane Hospital.

DR. J. A. SPALDING, of Portland, read a paper in which he advocated the division of the ocular muscles as a factor in the cure of epilepsy and other nervous diseases, dependent upon or aggravated by disordered vision.

AFTERNOON SESSION.

DR. JOHN O. MARBLE, of Worcester, was presented and welcomed as a delegate from the Massachusetts Medical Society.

The President then delivered his address, suggesting remedies for some of the difficulties now attending reform in medical education; among these were the abolition of the present system of private medical tutelage and the endowment of medical schools with a four years' graded course. Private preceptorship was defined as a snare and a delusion; the preceptor is deluded in thinking he is giving valuable instruction, and the student is entrapped into the idea that he is doing the best he can for himself when he registers with some prominent physician.

Of the much-discussed Medical Registration Law, the speaker said, "that it was a law there can be no doubt in the minds of impartial men, and why it does not stand to-day on the statutes of this Commonwealth you all very well know. Your committee of investigation as to the status of that law, has already filed its report and its contents you are fully acquainted with. The Judge of all the earth, has already passed upon the act which prevents that law from being enforced, and it is not for us now to sit in judgment upon it. It is for us, however, to see that a proper bill is framed, and that all proper means be used to secure its passage at the next session of the general court of this State."

The address was referred to a special committee, for report upon the suggestions therein contained.

DR. F. H. GERISH, of Portland, offered the following resolution which was given a unanimous passage:

Resolved, That the Association deprecates the inclusion in the reports of its meetings in the non-medical press of all detailed mention of papers, verbal reports and remarks on medical subjects.

DR. D. A. ROBINSON, of Bangor, read a paper on DIFFICULTIES OF DIAGNOSIS, WITH ILLUSTRATIVE CASES.

In the three cases cited, symptoms closely resembling those of acute rheumatism suddenly presented themselves, but eventually terminated in collections of

pup in the left lower extremities. From one patient necrotic boue was chiselled from the left tibia and left scapula.

Any history of injury or heart disease was absent as well as disease of the vessels. Embolism was fixed upon to explain the peculiar train of symptoms without appreciate cause. The writer's view was to the effect that the blood sometimes deteriorates to a condition just verging on coagulation, and needing only some point of obstruction to form a clot, just as liquids on the point of crystallization need only a slight jar, or the agitation of some foreign body placed in them.

DR. S. P. WARREN, of Portland, read a paper on
ACCIDENTAL HÆMORRHAGE IN LABOR,

limiting his discussion of the subject to those cases caused by premature separation of the placenta during the last two months of gestation or at time of delivery, excluding true placenta previa.

The treatment recommended was to complete delivery as soon as possible, by dilating the cervix, preferably with the finger, and completing delivery by forceps or version.

DR. GEO. H. SHEDD, of Fryeburg, read a paper on
PUERPERAL ECLAMPSIA,

leaning strongly to renal lesions as the prime cause, notably desquamative nephritis or commencing fatty degeneration: rarely atrophy. Doubt was expressed as to the true nature of certain post-mortem phenomena, whether they were to be regarded as causes, or results, or whether only coincident affections. The greatest mortality always accompanies advanced disease of the kidney. Preventive treatment has for its object to restore normal function of kidney and allay undue nervous excitement. Induction of premature labor was advised, to be attempted as soon as grave cerebral symptoms present, inasmuch as premature delivery usually occurs sooner or later, and danger to the mother increases with the number of convulsions.

DR. S. H. WEEKS, of Portland, exhibited a case of hip-joint disease, first seen in July last, when there was intense pain, flexion, abduction and obliteration of gluteal crease. Treatment had been confinement in bed, Buck's extension until symptoms of inflammation disappeared, and then Sayre's splint. Now walks on crutches, without splint. The patient was presented to show that we may hope to effect a cure in these cases without ankylosis, since she now has excellent motion in the joint and is rapidly regaining weight, and showing steady improvement.

EVENING SESSION.

DR. H. H. HUNT read a paper on

THE TREATMENT OF DIPHTHERIA.

Rest in bed from the inception, whether the case be mild or grave, must be insisted upon to reserve for emergencies every fraction of bodily strength. The chief contagion is to be looked for from the specific exudate upon the mucous surfaces. Local treatment has for its prime object to hasten the removal of membrane, at the same time rendering it aseptic, and prevent the disease from propagating itself.

Lactic acid, pepsin, trypsin and papayotin, in five to ten per cent. solutions, are excellent solvents, best applied in spray. Lime water is preferable from its activity and astringency; besides its solvent action, it checks inflammation and retards capillary absorption of septic material.

Valuable local disinfectants are sublimed-sulphur, sulphurous, carbolic, boric and salicylic acids, iodoform, resorcin, bichloride of mercury, and chloral.

Bichloride in .1 to 2000 solution, in spray form, is the most efficient. Not the least of its advantages is its anæsthetic effect upon the mucous membranes. All local treatment must be pursued with non-relent persistence.

By internal medication we strive to hasten the separation of false membrane, check diffusion of the germs of the disease, control the tendency to death by asthenia. Diphtheria being a disease which kills by prostration or septicæmia, the indications are obvious. Chlorate of potassium should never exceed in daily amount one-half drachm to a child of five years.

Tincture of chloride of iron, given in sufficient quantity to counteract the usual rapid destruction of the red blood corpuscles is as much a food as milk. Feed the white corpuscles with iron and their work will soon show by repairing the diphtheritic ravages upon the red corpuscles.

The better oxygenated the blood the better it will resist septic infection. Therefore, the doses of iron must be as large as the stomach will tolerate. To a child ten years old one drachm hourly of the following:

R	Tr. Ferri Chloridi	℥ i
	Glycerine	℥ iiii

An adult may take hourly from two to four drachms of the same mixture.

In providing alimentation we must not forget the diminished secretion of the gastric juices, and assist nature by preparing food accordingly.

Alcohol must no longer be regarded as a mere stimulant or excitant to cerebral action. Within its sphere it is as much a food as the proteids or carbohydrates. In every case of more than moderate severity from four to six ounces of whiskey or brandy, and proportionately smaller quantities for younger patients should be daily given, largely diluted.

DR. F. H. GERRISH, in opening discussion, introduced the subject of tracheotomy, and presented data of ten operations, with three recoveries.

DR. S. H. WEEKS advocated early operation as indicated by recession of soft parts of chest during inspiration, aphonia, difficult or impaired expiration.

DR. ALFRED MITCHELL, of Brunswick, emphasized the necessity of careful attention to details and prompt institution of active treatment. He believed in and taught thorough prophylaxis and isolation. He regretted that even now it was not uncommon to hear the laity quote professional opinion to demonstrate the non-contagious character of this disease.

DR. O. A. HERR, of Lewiston, believed that three deaths from sepsis, or heart-failure, occurred to one from tracheotomy. He believed diphtheria to be self-propagating, as shown by frequent relapses.

DR. NEALEY, of Bangor, reported a case of successful intubation by Dr. Simmons, of that city. From the discussion it appears that this procedure had been attempted very little in Maine, the drift of opinion favoring tracheotomy.

SECOND DAY, — WEDNESDAY, JUNE 13TH.

MORNING SESSION.

DR. II. H. JOHNSON, of Belfast, read a paper on

LEUCÆMIC LYMPHONIA,

confining himself to the splenic form of the disease,

and discussing some mooted points of the anatomy and physiology of that complicated organ, as well as the etiology, symptoms and treatment of the pathological condition under consideration. Early surgical interference was advocated, and the clinical history of three fatal cases in the reader's practice detailed.

DR. C. A. PEASLEE, of Wiscasset, read a paper on

PERIOTITIS,

with a report of cases.

One boy of eighteen has had, from the age of fourteen months, repeated attacks, until all the long bones have been affected. The bones have grown in length, but very little in diameter, and both femurs are curved anteriorly to a marked degree.

Three other children have been born since, the oldest and youngest having the same sad experience, the other having escaped. This one and the younger of the others were not nursed. All the children from an early age have been subjected to persistent alterative treatment. In one of them the attacks of inflammation of one or other of the long bones have supervened upon very slight exertion, as when creeping, or reaching for some desired article. In each case the inflammatory exudate has been absorbed, but after each attack the bone has been left more curved. Was unable to find history of struma or syphilis.

DR. E. HOLT, of Portland, made some remarks upon the

DIFFERENTIAL DIAGNOSIS BETWEEN IRITIS AND CONJUNCTIVITIS.

Final action was taken upon the report on Status of the Medical Registration Bill by the passage of a resolution directing the committee to take such steps through counsel as would obtain, if possible, from the Supreme Court an opinion as to the validity of the law and its present standing.

AFTERNOON SESSION.

DR. A. J. FULLER, of Bath, presented the report of visitors to the Maine Insane Hospital. The management is in excellent hands, but the work is hampered for adequate space, and new and larger buildings are needed. The committee suggested the desirability of establishing in connection with the hospital a training school for nurses.

The necrologist, DR. A. K. P. MESERVE, of Portland, presented obituary notices of Dr. J. B. Walker, of Thomaston, the president of last year, Dr. E. M. Field, of Bangor, Dr. Geo. H. Chadwick, of Portland, and Prof. A. B. Palmer, of Ann Arbor, an honorary member.

DR. F. E. HITCHCOCK, of Rockland, made verbal report of the

PECULIARITIES OF WOUNDS CAUSED BY GIANT-POWDER, DYNAMITE AND REND-ROCK.

the especial feature of these wounds being the diffused necrotic effect of the explosive, and the need of stimulating dressings.

ELECTION OF OFFICERS.

DR. S. C. GORDON presented the name of Dr. S. H. Weeks for President, and he received a unanimous election.

Other officers are: First Vice-President, Dr. W. P. Giddings, Gardiner; Second Vice-President, Dr. D. A. Robinson, Bangor; Permanent Secretary, Dr. C. D. Smith, Portland; Corresponding Secretary, Dr.

J. M. Wakefield, Warren; Treasurer, Dr. A. S. Thayer, Portland.

Board of Censors: Drs. F. C. Thayer, Waterville; H. H. Johnson, Belfast; B. F. Sturgis, Auburn; J. O. Webster, Augusta; H. P. Merrill, Portland.

Publication Committee: Drs. Charles D. Smith, Portland (*ex-officio*); F. H. Gerrish, Portland; A. K. P. Meserve, Portland; W. K. Oakes, Auburn; A. S. Young, Augusta.

Business Committee: Drs. I. E. Kimball, Portland; C. A. Ring, Portland.

DR. S. C. GORDON, of Portland, read a paper on

A REVIEW OF GYNÆCOLOGY IN MAINE FOR THE PAST YEAR.

Among the deductions drawn by the author, was emphasized the fact that so-called local treatment, the introduction of caustics and strong applications of all kinds, and the indiscriminate use of the sound, are fast becoming obsolete methods of treatment.

With reference to laparotomy as a last resort, the writer said he had operated forty times for removal of the uterine appendages, and could say with sincerity that he should not in every case hesitate to again advise the same treatment under similar circumstances. Of these patients five have died, three are as yet unimproved, and the others are thoroughly well women. Causer of the uterus was regarded as primarily a local disease, and early removal of suspected growths by vaginal hysterectomy was urged.

Dr. Gordon also reported an operation for extra-uterine (tubal) pregnancy fifteen hours after rupture, saving the patient, the first case of such operation in the State, and the second recorded case of successful laparotomy for this purpose in the United States.

The uterine appendages, sac, and fœtus were shown by Dr. Gordon. The speaker said that, again, he would operate at once on making the diagnosis, without waiting for rupture, believing the patient had a better chance for recovery. Speaking of ovariectomy, he cautioned the profession to refrain from tapping, and insist upon operation at the earliest moment.

DR. S. H. WEEKS detailed an operation for tubal pregnancy after rupture of cyst, but too late to save the patient.

DR. A. P. DUDLEY said the operation, before rupture, had already been made once in Philadelphia, twice in New York.

Dr. Dudley reported a case of successful laparotomy for varicocele of the left broad ligament of eleven years' duration, as large as one's thumb. The veins were greatly dilated, and the arteries and the ovary atrophied.

DR. S. H. WEEKS, of Portland, read a paper on

PENETRATING WOUNDS OF THE ABDOMEN.

For purposes of diagnosis, the insufflation of the intestinal tract by hydrogen gas, as proposed by Dr. Seun, of Milwaukee, was advocated, and, as a method of treatment, laparotomy and closure of intestinal wounds under all antiseptic precautions.

DR. L. W. PENDLETON, of Portland, read a paper, STATISTICS AND CASES FROM SERVICE AT THE MAINE GENERAL HOSPITAL,

exhibiting a large number of interesting morbid specimens. Among these was an elbow-joint completely saturated and discolored by the absorption of lead from a bullet lodged there several years before, the

patient having suffered for a long time from extreme lead-poisoning. The bullet found imbedded weighed 106 grains, having suffered a loss of 41 grains during its sojourn in the joint.

THE EVENING SESSION

was devoted to the Annual Oration, by DR. W. K. OAKES, of Auburn, upon the

PAST AND FUTURE OF THE MEDICAL PROFESSION.

The history of medicine was briefly outlined, and the experiences of the physician of to-day and his relations to the community and his professional brethren touched upon. The speaker urged that rational medicine should be in the widest sense eclectic, and that all sectarianism in medicine should be abolished. The greatest advantages to be derived from preventive medicine, yet in its infancy, were confidently predicted.

The final report of the Board of Censors was presented and accepted. It provides that the next annual meeting of the Association shall be held at Portland, on the second Tuesday in June, 1889.

DR. F. E. HITCHCOCK, of Rockland, was appointed Orator.

Delegates were appointed to the State Societies of New Hampshire, Massachusetts, Vermont, Connecticut, Rhode Island, and New York, and to the American Medical Association and the New Brunswick Society.

Visitors were appointed to the Medical School of Maine and the Portland School for Medical Instruction.

DR. A. K. P. MESERVE, of Portland, was appointed necrologist.

Following the oration, members, and visiting delegates and their ladies, were entertained by a reception at the Falmouth Hotel, extended by the Portland members of the Association.

THIRD DAY.—THURSDAY.—CLOSING SESSION.

DR. L. W. PENDLETON, of Portland, exhibited a specimen of an œsophagus perforated by forcible attempts to pass a home-made bongie. The unfortunate victim had long suffered from a constriction of the œsophagus, and had made for himself a smooth wooden bongie, by means of which it was his practice to push offending bits of food into his stomach. This practice he had pursued for some time until this unfortunate occurrence. At the autopsy, the left pleural cavity contained a large quantity of milk and solid food.

This session has been of unusual interest. The attendance has been large and the time fully occupied. Fifteen names were added to the roll of membership. In all probability the vexed question of the Registration Law and the relation of the Association to it will soon be settled by action or refusal to act by the Supreme Court. It is perhaps well to have it understood that from the time of the Governor's veto, the Association has been contending for a principle, and not to save the bill itself, which was in effect practically as passed, a notice to all quacks wherever dispersed, to come into Maine and be legalized on or before January 1, 1889. The question whether a law can be abstracted with impunity from the statutes of the State is quite another matter, and the Association, having a better acquaintance with the facts in the case than any other class of citizens, has felt it to be its duty to push the question to a settlement.

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Medical and Surgical Journal.

THURSDAY, JUNE 28, 1888.

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FATIGUE AS A CAUSE OF DISEASE.

ATTENTION has of late years been directed to the rôle of fatigue in the production of disease, and numerous monographs have appeared, taking up various aspects of the subject. Much has been written on fatigue of the heart (heart-strain) and the dilatation and enfeeblement thereby resulting. The existing knowledge on this subject is well summed up by Germain Sée in a paper on "Forced Heart," which was published in this journal in the earlier part of 1883. In 1878 appeared a very instructive monograph by Carrié, "On Fatigue and its Pathogenic Influences," in which the author treats of fatigue of the different systems, muscular, nervous, glandular, of the organs of special sense, and of the cerebrum. Then he studies its pathogenic rôle, establishing the fact that fatigue may be the exclusive cause of disease. About the same time Bouley and Fournel made a careful study of the effects of fatigue and overwork in animals, in which they showed that in such animals a typhoid state rapidly supervenes, followed frequently by death with rapid cadaveric rigidity and putrefaction, subcutaneous and muscular suffusions, etc. Peter, in his clinical lectures, has made it apparent that similar phenomena may occur in the human subject, and has advanced his brilliant doctrine of *autotypization*.¹

In a memoir read in 1880 before the Medical Society of Geneva, and entitled "Fatigue,"² Revilliod shows that the symptomatology of morbid states brought on by overwork (*surmenage*) assumes two principal forms—a typhoid form (oftenest observed), and a cardiac form. The latter is the "irritable heart," or "forced heart," concerning which so much has been written of late years. The typhoid form is sometimes febrile and sometimes afebrile. The febrile cases generally yielding speedily to rest and becoming afebrile. Multitudes of cases of sporadic fever, says Revilliod, occurring in the practice of

¹ Peter, *Léçons Cliniques à l'hôpital Necker*, 1856-1887.

² Revilliod, *La Fatigue*, Geneva, 1880.

the ordinary physician might be properly classed among the fevers due to fatigue or overwork. These, lasting from two or three days to a fortnight, and lacking all the distinctive features of typhoid, are generally entered as "abortive typhoid," "ephemeral," "gastro-enteric," or "bilious" fevers.

The recent thesis of Victor Rendon, "*Les Fièvres de Surmenage*," (the fevers of overwork), is probably the most complete work that has yet appeared on the subject. According to this writer, the pathological states which have fatigue for their cause all have a common character, the *typhoid condition*. He adopts three divisions: (1) typhoid state without fever; (2) typhoid state with fever, but without lesions; (3) typhoid state with transient or permanent lesions.

(1) The first, or lighter form is due to a slight degree of fatigue. It is a purely dynamic trouble. The organism soon rights itself by rest.

(2) If the excess of toil is sufficiently prolonged, and without regular periods of rest, the second form makes its appearance, the *acute form*, the true *fever of overwork*. Thus far only the liquids of the organism are altered.

(3) The third form is the result of still more arduous, or more prolonged overwork, (long, fatiguing marches, toil by day, with night-watching, overcrowding the brain at school, etc.) Here there is alteration of the solids as well as the fluids. The organs which are the most likely to be affected are the heart and bloodvessels, the kidneys (as is also the case with infectious diseases) and the spinal cord. This form is called by Rendon the *grave form*. The denomination *sub-acute form* is reserved for cases where death supervenes from exhaustion before any of the morbid phenomena alluded to have had time to be produced. This last form has been noticed in over-driven animals, and in soldiers after prolonged and forced marches.

To explain the morbid effects of fatigue, appeal is made to the facts of physiological chemistry. Work engenders waste products. The function or muscle is the production and movement of animal heat. The material result of muscular life in action is creatine, creatinine, lactic acid, and certain azotized uncrystallizable extractives. The working brain produces leucine, cholesterine, etc. These products of dissimulation, when retained in the organism, are prejudicial to function and to life. Gautier has considerably augmented the list by his discovery of ptomaines and leucomaines. All these effete elements are the ashes by which the animal machine is clogged when the emunctories are oppressed and fatigued. Physiologists have given to these auto-intoxications various names, which often only serve to conceal our ignorance of the true cause: uræmia, cholæmia, cholesteræmia, creatinæmia, etc. The latter denomination is applied by Jaccoud to symbolize the toxic action of the entire group of extractive matters by one of its elements. To Revillod we are indebted for the rather awkward name *extractihæmia*. "Here," says this writer, "in the impregnation of the organism with

these waste extractives is the real lesion for which we are seeking, for common experience and physiological experimentation prove them to be eminently toxic. This is the explanation of the symptoms engendered by their excess in the economy, which are, in fact, those of fatigue: languor, prostration, myalgia, the 'typhoid state,' fever. We have a right to suppose that according to the predominance of certain extractives, according to the tissue which is the principal sufferer, according to the degree of oxidation, these effete principles provoke hæmorrhages, as in three of my clinical cases (viii, xxix, xxx) thromboses (case xxvi) purpura, irritation and thickening, or rarefaction and destruction of the endothelium of the vessels and valves of the heart, vices of nutrition and degeneration of the heart-muscle, of the muscular coat of the arteries, whence arise disturbances of the local circulation, spasm and consecutive paralysis of the capillaries. Then, under the influence of an altered blood, there supervene œdema, congestions, infarctus, gangrenes (case xxvii.) The entire nutrition suffers, the intellect is weakened and oppressed, for the accumulated extractives rob the brain and the blood of its oxygen, element necessary for the normal exercise of the vegetative, locomotor and intellectual functions."

The following are some of the facts on which these theories rest:

(1) Good authorities, as Gubler and Revillod, have noticed after the subsidence of fevers from overwork, and coincident with the amendment, copious discharges of urea ("*une véritable débâcle d'urée*"). Rendon reports several cases in which the same fact was noticed. Now experiments (W. A. Hammond and others) have proved that under the influence of hard work urea-production notably augments (33 grammes in a state of rest, 120 grammes after excessive muscular work).

(2) Chalvet in certain cases has proved the augmentation of extractive matters in the blood, while Ranke has shown that the muscle which is alkaline in a state of rest becomes acid by exercise, and that this acidity results from the presence of lactic acid; that this acid in excess has a deleterious action on the organism which manifests itself subjectively by the sensation of fatigue, followed by sleep. Ranke also affirms that the injection of the blood of an overworked animal produces the phenomenon of fatigue in the member which receives the injection.

(3) Liebig, from experiments of his own, finds reason to ascribe especially noxious properties to creatine (also a product of muscular waste), and he allies creatinæmia to uræmia. He has found creatine ten times as abundant in the blood of an overdriven fox as in that of a fox killed while in a state of rest. Since then Cuffer has produced dyspnœa strikingly like the so-called uræmic dyspnœa by injections of creatine.

We have not space to enter into the details of the experiments of Preyer and Keim, in which, by subcutaneous injections of lactate of soda in guinea pigs they succeeded in producing in them the symptoms of acute

over-fatigue; nor into the profound studies of Professor Bouchard on the toxicity of the elements of the organism. Enough has been said to indicate what a fruitful field of inquiry is here opened up, and the possibility of rich acquisitions to our knowledge of the causes of disease in the future. In their search after the microbes, pathologists have made too little account of the effects on the economy of poisons which the economy itself generates.

ELECTRICITY vs. HANGING.

THE New York act substituting death by electricity for the time-honored death by hanging, does not meet with universal approval.

So long ago as April, Dr. William A. Hammond read a paper in New York on the "Superiority of Hanging as a Method of Execution," in which he maintained that death by strangulation was practically painless. If a criminal with a rope properly adjusted about the neck were simply hauled up by a pulley, painless death would occur in seven or eight minutes, according to Dr. Hammond's view. A gentleman present doubted the assertion, and submitted to compression of the carotids to test the point whether sensation was thus destroyed, but apparently was not convinced. The Society of Medical Jurisprudence and State Medicine, after discussing Dr. Hammond's paper, passed a resolution protesting against electricity as a means of inflicting the death penalty, while some of the members protested against the continuance of capital punishment in any form.

In the last number of his *Aselepiad*, Dr. B. W. Richardson criticises the change very severely. "In disgust at the foolish barbarism of the time which keeps up the crime of capital murder, the humanitarian fraternity, afraid to support the sound and logical policy of abolition of the extreme offence, tries to dally with reason and conscience by the attempt to divest execution of all pain and all terrors. Euthanasia for the worst of criminals, by the side of so-called natural but often most cruel, death for the rest of mankind, is practically the proposition; a proposition which carries with it its own condemnation."

Dr. Richardson then proceeds to express a belief similar to that of Dr. Hammond, that death by strangulation or suspension is practically painless so that the "process of hanging looks brutal without actually being so." But Dr. Richardson brings a more important charge against the newly adopted method. In some experiments on the application of the electric discharge for the painless extinction of the lives of animals to be used as food, by Dr. Richardson, this mode of death was found to be anything but certain. Sheep stricken apparently into instant and irrevocable death by electricity, after a few minutes showed signs of life and were dispatched in the ordinary way by the knife, and a large dog perfectly unconscious, and to all appearance dead, from the stroke of a powerful

battery, was submitted to a surgical operation during unconsciousness and afterwards made a sound and easy recovery. In most cases the electric shock will kill at one discharge but exceptionally it will simply stun and may induce the semblance of death instead of the real event. Dr. Richardson thinks that it will be real humanity therefore, for the authorities of New York to supplement death by electricity by a post-mortem examination of the victims, so that the execution may not be crowned by burying the victims alive.

MEDICAL NOTES.

—A newspaper report contains an "interview" with Dr. Morell Mackenzie at the Hague, in which he admitted having concealed his knowledge of the late emperor's malady, in order to prevent a regency. It is hard to have to mix medicine with politics.

—At the last meeting of the Ophthalmological and Otological Section of the New York Academy of Medicine, the following motion was made and carried: "That a Committee be appointed, of which the Chairman of the Section, Dr. David Webster, be a member, whose duty it shall be to obtain a good photograph of the late Dr. Cornelius R. Agnew, for the purpose of having engravings suitable for framing made from this. The right of issue and sale of such engravings shall be given to some first-class publisher, if practicable; if not, the Committee shall offer them to the profession at cost."

In accordance with the above, a Committee has been appointed. Members of the profession who desire such an engraving, accompanied by an autograph signature, should send their names and addresses to the Secretary of the Committee, Dr. Charles H. May, 640 Madison Avenue, New York City, at once. When all such names shall have been recorded, those who have requested a copy of the engraving will be notified of the cost of the same, either by the publisher or by the Committee having the matter in charge.

—The *Medical Record* quotes the following curious items from the *Cincinnati Enquirer*, under the head of births:

FLAMIN. — Saturday, the 9th inst., at 8.15 A.M., to the wife of D. W. Flamin, of College Hill, a ten-pound boy. Thanks to Dr. Wallingford, of Cincinnati.

GALLION. — June 5th, to Mrs. Nona Gallion, of Liberty Street, a nine-pound girl. Thanks to Dr. Wallingford.

It strikes our contemporary that Messrs. Flamin and Gallion might claim some thanks.

—The *Western Druggist* says: "On account of the serious inconveniences from the use of the copyrighted term antipyrin, which only describes one property of the drug so designated, it will hereafter be denominated 'methozin' in the columns of the *Western Druggist*. The term is simply a diminutive of its chemical title. For the same reason we have hitherto used the term acetanilid in lieu of 'antefebryn.' Medical and pharmacal journals would do the interests of medi-

cine a service by using these scientific terms in place of the misleading antipyrine and antefebrin.

— Three enterprising French gentlemen, says the *British Medical Journal*, went last summer to the top of Mount Blanc for the purpose of making a series of meteorological and physiological observations, and remained there for two or three days, in order to obviate the errors which, so far as physiological observations are concerned, would be inevitable if made while still suffering from the extreme fatigue incidental to so laborious an ascent. As it was, none of them had the courage, on attaining the goal, to put up the tent, etc., which with great difficulty had been brought up, and they fell asleep with their heads on the boxes of instruments. The thermometer, when placed on the snow, registered 19° C. below zero. M. Richard and one of the guides suffered from severe headache, with feverish symptoms. The least effort—even ordinary movement—caused such fatigue that they were compelled to lie down during the greater part of the day. They had masks to preserve the skin of the face from the biting cold, and the usual spectacles to avoid snow-blindness. The travellers suffered from almost complete anorexia, and they noticed that tea immediately made them ill. The second day, tracings were taken of the pulsation of the carotid and radial arteries. One of the guides was quite prostrated with headache and high fever, and was only got down with great difficulty. Once down, a good meal, a denser air, and a milder temperature soon restored them to their normal condition of health.

BOSTON.

— The famous "Christian Science" case at Medford, with the facts of which our readers are familiar, has reached the end which we believe lawyers predicted, and the woman Corner, who permitted the death of her daughter and grandchild by neglect, is released. It will be remembered that the woman was arrested on a charge of manslaughter in causing the death of her daughter, Mrs. Lottie A. James, of West Medford, by neglecting to provide proper medical assistance at the time of her confinement, on the 18th of April. The case was heard before Judge Pettingill, of Malden, who decided that Mrs. Corner was "probably" guilty, and he held her in \$5,000 for trial in the Superior Court at Cambridge. Judge Pettingill's decision was not maintained, however, by the grand jury, which has reported "no bill" against Mrs. Corner. This ends the celebrated case. District Attorney Stevens, in speaking of the matter, is reported to have said he was not surprised at the report of the grand jury, as there was no case in law against Mrs. Corner.

— The question of the suppression of athletic sports at Harvard College, upon which, as we have already informed our readers, the Board of Overseers set aside the majority report of its committee, and adopted the minority report of Dr. Walcott, which allowed much more freedom for athletic contests than the majority's

report, has again been opened, this time by action of the Faculty on a report of a committee of its own. This report, while admitting some abuses, holds that the general effect, physical and moral, of intercollegiate sports is good. The committee recommend that in view of the inadequacy to the needs of the University of the grounds now set apart for exercise, steps be immediately taken to raise funds for putting in proper condition the land on the south side of the Charles River, already in the possession of the University; second, that an addition to Hemenway Gymnasium, to contain bathrooms, dressing-rooms and lockers, and a swimming-bath, be built at once; and third, that there be such a change in the constitution, powers and responsibilities of the athletic committee as they outline. At the faculty meeting the first two of these recommendations were adopted, and on the third a vote was passed:

"That the committee on the regulation of athletic sports shall hereafter be constituted as follows: of three graduates of the college; of three members of the college faculty—these six members to be appointed by the corporation; and of three undergraduates, who shall be chosen during the first week of the college year by the majority vote of the following students—the presidents of the senior, junior and sophomore classes, and a representative from each of the following athletic organizations, the boat club, the cricket club, and the athletic, baseball, football, lacrosse and tennis associations, who shall be called together for the purpose of making this choice, by the president of the University.

"That this committee shall have full power over all matters relating to athletics and athletic contests, subject to such general regulations as the college faculty may from time to time adopt. It shall present two written reports each year to the faculty."

It is expected that this disposition of the matter, which meets with the approval of the faculty, will be endorsed by the Overseers. The report reaffirms the existing regulations as to times and places of intercollegiate games.

Miscellany.

PROFESSOR SEEGEN ON DIABETES MELLITUS.

THE *British Medical Journal* contains the following résumé of Professor Seegen's paper, "On Diabetes Mellitus in regard to recently acquired knowledge regarding sugar-formation in animals," which appeared in the *Zeitschrift für Klin. Medicin*, Bd. xii. The chief results of his investigations are formulated in the following theses: (1) The formation of sugar is a normal process, going on in the liver uninterruptedly. (2) The daily amount of sugar formed in the liver is very considerable. (3) The sugar is continually converted in the body; but where and in what way this occurs has not hitherto been explained. (4) Sugar or carbo-hydrates taken as nourishment, do not participate in the formation of sugar within the liver. (5) Albumen and fat are the materials from which the

liver forms sugar. (6) The formation of glycogen in contrast to liver-sugar, is intimately related to the kind of nourishment taken, and is greatest when cane-sugar is taken. How do these facts agree with those derived from clinical observation of diabetes mellitus? The latter occurs in two forms; in the first of these (the light form), the patients are usually well-nourished, belong to the middle period of life, and voracity, thirst, and polyuria are only seldom excessive; in the second, or severe, form, the patients are usually young, lose flesh rapidly, and have great voracity and thirst, with an excessive amount of urine. The main distinction between these two forms lies in this, that patients of the first class only excrete sugar when they take sugar or carbo-hydrates in their food; the symptoms of diabetes cease when these are discontinued.

In the second class of patients, the sugar excretion is scarcely influenced by the avoidance of carbo-hydrates in the food. Seegen is of opinion that these two different forms represent two distinct pathological processes. In the first, the excreted sugar is derived undoubtedly from the sugar ingested, and the diabetes must be regarded as the result of incapacity of the liver cells to dispose of the carbo-hydrates in the normal manner. In the second form it must be assumed that the normally formed liver-sugar is excreted. The whole body, or more or less of its elements, has not the capacity to "convert" the sugar conveyed in the blood; hence the graver prognosis in this form than in the other. The ultimate cause of diabetes is still unknown, but the author is of opinion that nervous derangements very frequently underlie this disease.

REPORTED MORTALITY FOR THE WEEK ENDING JUNE 16, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrheal Diseases.	Diph. & Cramp.	Scarlet Fever.
New York	1,526,081	680	300	22.65	12.00	4.05	7.65	4.80
Philadelphia	1,016,758	353	114	9.24	13.72	2.56	.56	1.12
Brooklyn	751,432	306	125	18.81	13.53	2.97	8.51	5.61
Chicago	760,000	261	112	17.86	9.88	3.04	6.08	.76
St. Louis	449,160	153	78	16.90	7.80	10.40	2.80	—
Baltimore	437,155	160	59	16.38	18.90	11.34	.63	.63
Boston	407,024	165	46	10.37	12.81	1.83	4.88	—
Cincinnati	325,000	108	—	11.12	11.66	3.68	4.60	—
New Orleans	248,000	142	60	30.10	10.50	18.80	1.20	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	80	37	20.00	13.75	12.00	3.75	—
Pittsburgh	210,000	90	54	23.31	11.11	14.43	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	26	17	42.35	11.55	38.46	—	—
Charleston	60,145	34	18	24.46	5.88	17.64	—	—
Portland	40,000	12	1	33.33	16.66	—	25.00	—
Worcester	76,328	19	6	5.26	26.30	—	5.26	—
Lowell	69,530	26	7	15.40	3.85	—	11.55	—
Cambridge	64,079	19	4	10.52	10.52	5.26	5.26	—
Fall River	61,203	28	9	17.85	25.09	11.71	—	3.57
Lynn	51,467	10	0	—	50.00	—	—	—
Lawrence	40,175	17	3	—	11.76	—	—	—
Springfield	39,952	14	3	7.14	14.28	—	7.14	—
New Bedford	36,298	10	1	10.00	20.00	—	10.00	—
Somerville	33,307	—	—	—	—	—	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	7	1	—	—	—	—	—
Chelsea	27,552	10	0	—	10.00	—	—	—
Haverhill	24,979	12	0	8.33	25.00	—	8.33	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	4	0	—	75.00	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	5	2	—	—	—	—	—
Malden	18,992	8	2	—	28.56	—	—	—
Fitchburg	17,534	8	2	—	—	—	—	—
Waltham	16,651	4	0	—	—	—	—	—
Newburyport	13,839	2	0	—	50.00	—	—	—
Northampton	13,419	—	—	—	—	—	—	—
Quincy	13,336	3	1	—	100.00	—	—	—

Deaths reported 2,774; under five years of age 1,063; principal infectious diseases (small-pox, measles, diphtheria and scarlet fever) 466; diarrheal diseases, whooping-cough, erysipelas and fevers) 466; consumption 334, acute lung diseases 248, diarrheal diseases 161, diphtheria and croup 113, scarlet fever 57, typhoid fever 35, measles 32, cerebro-spinal meningitis 19, whooping-cough 16, malarial fever 16, erysipelas eight, small-pox seven, puerperal fever one, typhus fever one. From typhoid fever, Philadelphia 13, Chicago five, Boston four, Pittsburgh and New York three each, St. Louis two, Baltimore, Washington, Portland, Charleston and Fall River one each. From measles, New York 18, Chicago four, Pittsburgh three, Baltimore and Washington two each, Philadelphia, Brooklyn and Lowell one each. From cerebro-spinal meningitis, Chicago seven, New York four, Boston, Cincinnati and Washington two each, Baltimore and Nashville one each. From whooping-cough, New York five, Chicago four, Brooklyn and New Orleans two each, Philadelphia, Pittsburgh and Charleston one each. From malarial fever, New Orleans

eight, New York, Brooklyn and St. Louis two each, Baltimore and Charleston one each. From erysipelas, New York four, Chicago, St. Louis, Baltimore and Pittsburgh one each. From small-pox, New York four, Philadelphia three. From puerperal fever, St. Louis one. From typhus fever, New York one.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending June 24, the death-rate was 17.6. Deaths reported 3,172; infants under one year of age 711; acute diseases of the respiratory organs (London) 237, whooping-cough 101, diarrheal diseases 46, diphtheria 29, measles 34, scarlet fever 31, small-pox (Sheffield four, Bristol, Nottingham, Birkenhead, Oldham, Preston and Hull one each) 10.

The death-rates ranged from 13.0 in Derby to 25.7 in Manchester; Birmingham 17.9; Bradford 14.3; Hull 18.1; Leeds 20.1; Leicester 16.0; Liverpool 19.2; London 16.1; Nottingham 18.3; Sheffield 21.4; Sunderland 15.8.

In Edinburgh 18.5; Glasgow 23.3; Dublin 23.5.

The meteorological record for the week ending June 16, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, June 16, 1888.	Barom- eter.	Thermometer.				Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration Hrs. & Mins.	Amount in Inches.
Sunday, ... 10	29.83	66.0	77.0	59.0	71.0	67.0	90.0	76.0	S.W.	S.W.	S.W.	13	24	16	O.	O.	O.		
Monday, ... 11	29.69	68.0	81.0	61.0	87.0	52.0	58.0	66.0	S.W.	W.	N.	12	18	16	O.	O.	C.	1	.46
Tuesday, ... 12	30.67	65.0	74.0	54.0	58.0	31.0	59.0	49.0	N.W.	W.	S.W.	10	6	2	C.	C.	C.		
Wednesday, ... 13	30.19	66.0	77.0	55.0	55.0	36.0	60.0	50.0	S.W.	S.W.	S.W.	3	11	6	C.	O.	C.		
Thursday, ... 14	30.04	62.0	67.0	54.0	70.0	95.0	92.0	86.0	S.W.	S.	S.W.	10	8	4	O.	R.	F.	7	.64
Friday, ... 15	29.84	61.0	70.0	57.0	92.0	92.0	96.0	93.0	S.W.	S.E.	S.W.	2	4	7	G.	O.	F.	2	.47
Saturday, ... 16	29.78	76.0	84.0	57.0	77.0	49.0	62.0	63.0	W.	N.W.	N.E.	12	12	3	C.	F.	C.		
Mean, the Week.	29.920	66.3	76.0	57.				69.0										91	1.17

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 16, 1888, TO JUNE 22, 1888.

WATERS, WM. E., major and surgeon. Granted leave of absence for twenty days to take effect about June 15, 1888. S. O. 64, Department of Columbia, June 8, 1888.

DEWITT, CALVIN, major and surgeon. Granted leave of absence for one month, with permission to apply for an extension of one month. S. O. 52, Department of Dakota. June 9, 1888.

WHITE, ROBERT H., major and surgeon. Ordered from Angel Island, California, to Fort Myer, Va. S. O. 142, A. G. O., June 20, 1888.

MUNY, CURTIS E., captain and assistant surgeon. Ordered from Fort Klamath, Oregon, to Angel Island, California. S. O. 142, A. G. O., June 20, 1888.

TORSEY, GEO. H., captain and assistant surgeon. Relieved from duty at Fort Monroe, Va., and ordered to Fort Randall, D. T. S. O. 142, A. G. O., June 20, 1888.

MCCREERY, GEO. M., captain and assistant surgeon. Relieved from duty at Fort Meade, D. T., and ordered to Fort Monroe, Va., for duty. S. O. 142, A. G. O., June 20, 1888.

GORGAS, WM. C., captain and assistant surgeon. Relieved from duty at Fort Randall, D. T., and ordered to Fort Barrancas, Fla., S. O. 142, A. G. O., June 20, 1888.

MORRIS, EDWARD R., first lieutenant and assistant surgeon. Leave of absence granted in S. O. 61, May 28, 1888, Department of the Arizona, extended one month. S. O. 142, A. G. O., June 20, 1888.

SWIFT, EUGENE L., first lieutenant and assistant surgeon. Ordered from Fort Spokane, W. T., to Fort Klamath, Oregon, for temporary duty. S. O. 142, A. G. O., June 20, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING JUNE 23, 1888.

CRANDALL, R. P., assistant surgeon. From "Minnesota" and to the "Saratoga."

SHIFFEN, EDWARD, medical director. Placed on retired list June 18, 1888.

SAYRE, J. S., assistant surgeon. To the Navy Yard, New York.

BRADLEY, MICHAEL, medical inspector. Ordered to examination for promotion.

KERSHNER, EDWARD, surgeon. Ordered to Marine Rendezvous, New York.

WHITE, C. H., surgeon. Detached from Museum of Hygiene, and wait orders.

TRYON, J. REFUS, surgeon. From Marine Rendezvous, New York, and to special duty, New York.

MCCARTY, REFUS, passed assistant surgeon. From Naval Hospital, Chelsea, Mass., and to the "Yantic."

HENNENBERGER, L. G., passed assistant surgeon. From special duty, New York, and to the "Minnesota."

KITE, J. W., assistant surgeon. From "Yantic" and to the "Richmond."

WOOLVERTON, WHITE, WOODS and DuBois, surgeons. Ordered for examination, preliminary to promotion to the grade of medical inspector.

APPOINTMENT.

At the Massachusetts Charitable Eye and Ear Infirmary, Assistant Ophthalmic Surgeon, Dr. Fred E. Cheney.

BOOKS AND PAMPHLETS RECEIVED.

Thirtieth Annual Report of the Washingtonian Home. Boston. 1888.

Fifth Annual Report of the West End Nursery and Infant's Hospital, 37 Blossom Street, Boston.

The Orthopedic Treatment of Paralysis of the Anterior Muscles of the Thigh. By A. B. Judson, M.D., New York. Reprint. 1888.

The Ischiatic Crutch. By A. B. Judson, M.D., New York. Reprint. 1887.

Second Annual Report of the Children's Island Sanitarium, Boston, 1888.

Heart and Blood Vessels in the Young. By A. Jacobi, M.D., New York. Reprint. 1888.

The Nutrition of Infants and Invalids. Wells, Richardson & Co., Burlington, Vt.

Sixth Annual Announcement of the Philadelphia Polyclinic and College for Graduates in Medicine. Sessions 1888-1889.

The Trinaution of Alkaleids. By Edwin Fynchon, M.D. Chicago; Reprint. 1888.

The Sixty-Fourth Annual Report of the Officers of the Retreat for the Insane, at Hartford, Conn., April, 1888.

Report of Proceedings of the Illinois State Board of Health. Quarterly Meeting, Chicago, April 19, 20, 1888. Small-Pox, Cholera, Water-Supplies, Wear and Tear of the Medical Profession.

The Physician's Leisure Library, No. 5. The Infectious Diseases, Volume Second. By Karl Liebermeister, translated by E. F. Hurd, M.D. Detroit: 1888.

Water: Its Impurities, Gathered from the Air and Earth. The Organism that Grow in it, and the Modern Methods of Purification. By C. W. Moore, M.D., San Francisco. Reprint. 1888.

Memorial Address delivered before the Faculty and Students of the College of Physicians and Surgeons on the first anniversary of the death of Prof. A. F. Erich. By George H. Kohé, M.D. Baltimore: 1888.

The Results of Laparotomy for Acute Intestinal Obstruction. By B. Farquhar Curtis, M.D., Attending Surgeon to St. Luke's Hospital; Assistant Surgeon to the New York Cancer Hospital. Reprint. 1888.

A New Method in the Treatment of the Vegetable Parasitic Diseases of the Skin. By Henry J. Reynolds, M.D., Professor of Dermatology, College of Physicians and Surgeons, Chicago; Professor of Skin and Genito-Urinary Diseases, Chicago Polyclinic, etc.

Remarks on the Vesico-Urethral Eriethism Peculiar to Locomotive Engineers. By John Blake White, M.D., Physician to Charity Hospital; Consulting Physician to House of Refuge. Reprint. 1888.

Proceedings of the State Sanitary Convention held at Philadelphia, May 12, 13, and 14, 1886, under the auspices of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania. Harrisburg, 1886.

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Original Articles.

ON MOTOR PARALYSIS AND OTHER SYMPTOMS OF POISONING FROM MEDICINAL DOSES OF ARSENIC.¹

BY JAMES J. PUTNAM, M. D.

The figures for a portion of the Faradic reactions are as follows:—

Thénar em. right,	115 mm.
Thénar em. left,	105 mm.
Hypothenar em. right,	115 mm.
Hypothenar em. left,	105 mm.
Exten. com. dig.	90 mm.
Exten. carpi. rad.	100 mm.
Exten. carpi. uln. (contractions excessively feeble),	100 mm.
Biceps (contractions also excessively feeble),	100 to 120 mm.

The examination with the galvanic current gives for the deltoid and biceps K Cl.C. at 2.5 to 3 m. a., with the small electrode placed upon the motor point; for the exten. com. dig. about 4 m. a. (K Cl.C. greater than An Cl.C.). There is no reaction of degeneration anywhere.

To sum up, therefore, we have here a patient, past middle life, attacked with widespread muscular paresis, attended by moderate atrophy, affecting mainly the muscles which move the extremities on the trunk, but also, to some extent, those of the distal portions of the limbs; rapidly progressive for five months, then retrogressive; characterized by moderate diminution of electrical irritability to both currents, and by increased mechanical irritability; preceded and accompanied by severe rheumatoid pains about the joints, but without other marked disorders of the sensory system; and associated with symptoms of considerable and persistent drowsiness, and general depression of the nervous energy; and we find also the urine containing an unmistakable trace of arsenic, which must have come, so far as is known, either from the wall-paper during October and November, or from the therapeutic doses of Fowler's solution which had been taken five months before.

It should also be stated that the patient has of late, during his recovery, been using for his asthma, a secret remedy, which has been found on analysis to contain arsenic, together with an iodine preparation probably hydriodic acid, and other substances, and that under this treatment he has done well. In estimating the importance of this fact, it should be remembered that we are now dealing, presumably, not with a case of arsenic poisoning, but with a neuritis which the arsenic left behind it, and that for neuritis, arsenic in the proper dose is of admitted value.

The danger of poisoning is only present when the dose is too large, or the elimination, including the metabolic processes by which the tissues react to the poison, is slow or imperfect.

At the present time the arsenic (the exact dose of which is unknown), is being passed off rapidly, as a recent examination of the urine has demonstrated. Possibly the presence in the mixture of potassic iodide and other diuretic substances, is hastening the elimination.

Fortunately, the favorable turn of the disease renders it now almost unnecessary for us, in deciding upon the diagnosis, to eliminate progressive muscular atrophy and the other myopathies of spinal origin;

¹ Read before the Suffolk District Medical Society. Concluded from Vol. cxviii, page 619.

ERRATA. In the first part of this article, on page 617 of the previous number, for Popard, read Popow; for May 5th and 10th, read May 5th.

and the absence of sensory symptoms other than pain, practically excludes diffuse myelitis.

There remain, as possible diagnoses, acute multiple neuritis and acute primary myositis, different forms of which have been described by Wagner,⁸ Henry Jackson,⁹ and other observers to whom these writers refer. Acute myositis is a rare affection, and is usually rapidly fatal, or runs a progressive course. It is ushered in by rheumatoid pains, usually following exposure to cold and wet, or severe muscular strain. The attack is usually attended by fever, often by swelling of the muscles and edema of the skin. The distribution of the symptoms varies, but it is more common in this disease than in neuritis, to see the larger muscles principally affected. Only a few cases of this clinical type, and ending in recovery, have been reported, and there is some doubt whether part of these were not cases of neuritis.

The case reported to-night seems to me to belong with this obscure class. The evidence in favor of the arsenical origin has been materially weakened, as stated above, by the discovery of arsenic in the wall-paper. Nevertheless, for the sake of calling attention to this possibility, I allow what I had written to stand unchanged.

The principal causes of neuritis, leaving out the traumatic forms, are exposure to cold and wet, certain infectious diseases, alcohol, lead, arsenic, and a few other poisons which need not be considered here. Finally, some cases are of unknown origin, and, very rarely, even in Northern climates, a case is met with that seems referable with some probability to specific infectious influences. Of these causes, the first four can be set aside as out of the question or improbable. The symptoms came on in the pleasant season of June and no exposure had preceded them. We cannot, however, positively exclude the causes of unknown character, nor specific infection. The question remains: What degree of probability is to be attached to the diagnosis of poisoning from arsenic?

The clinical picture presented by this case differs in several respects from the group of symptoms usually met with in arsenical poisoning from large single doses, but it should be remembered that we probably have to deal here, not with a typical, but with a modified or abortive form of the disease, such as occurs from the long-continued action of the poison taken in very small quantities. These forms vary widely, but they present similar features, such as neuralgic pains, drowsiness, loss of strength and energy, and sometimes serious paralyses.¹⁰

It has been pointed out above that the distribution of the muscular paralyses from arsenic poisoning is usually such that the muscles moving the hands and feet are the most affected, but, also, that it is not very unusual to find the larger muscles of the trunk and limbs more or less weakened. The distribution met with in the present case, where the larger muscles are the ones most severely affected, is not noted as marking a special type of arsenical neuritis, but we find, at least, cases in which the larger muscles are involved equally with the smaller.¹¹ In certain cases of paralysis from

⁸ Deutsches Arch. für Klin. Med., Vol. xi., 1887, p. 241.

⁹ This Journal, 1887, p. 241.

See, also, a discussion on myositis and neuritis by Senator and others, before the Verein für Klin. Med.; Berl. Kl. Wochr., 1888.

¹⁰ See the report of Prof. Wood to the Massachusetts State Board of Health, 1885 (Arsenic as a Domestic Poison).

¹¹ Comp. Goubeyre; Gazette Med. 1858. Obs. xxiv; Gerhardt: Sitzungsber. der Phys. Med. Gesellschaft zu Würzburg, 1852, p. 98; Jaeschke; Inaugural Dissertation, Breslau. Case 1.

lead-poisoning, the deltoids are very prone to suffer, and they may even be attacked before the other muscles, as in a case which I have recently had the opportunity of observing. Possibly a wider acquaintance with cases of arsenical paralysis will show us that similar differences in type are to be found also among them.

The very fact that such widely different agents as lead, arsenic, alcohol, sulphide of carbon, and the poison of the tubercular, and other bacteria, induce, on the whole, such similar types of neuritis, suggests that there is a common factor at work which is independent of the particular agent, and must consist in some peculiarity of the affected tissues. If this is so, then a variation in the symptoms which is often met with in one of these forms of poisoning, such as that from lead, will be likely to occur to a greater or less extent in the rest, when the conditions are favorable.

In a case of acute, fatal, infectious neuritis, which I have recently observed with Dr. M. A. Morris, of Charlestown, the left deltoid was the first muscle to be attacked with severe paralysis.

A second set of facts, pointing in the same direction has recently been brought forward by Chittenden, in a paper read before the Medico-Legal Society of New York on June 11, 1884,¹² where it was shown that lead, arsenic and similar poisons do not always accumulate in the same organ of the body, as the liver or the kidneys, but that the position of greater accumulation varies according to the rapidity of absorption (solubility) of the special preparation ingested, the rapidity of elimination, and similar factors. Thus, in some instances, the brain, or the muscles, and even special groups of muscles, contain a relatively large amount of the poison, and although, to be sure, it is mainly in cases of acute poisoning, where death occurred before the arsenic had had time to distribute itself evenly, that this irregularity of distribution occurs, yet the author admits (reprint, p. 26) that our information as to the cause of these facts is not yet sufficiently exact. These peculiarities in the local accumulation of the poisonous agent must certainly affect the symptoms, even if it be true that it is the degree of vulnerability of the special tissues, and not the amount of poison present, that chiefly determines whether or not paralysis will result.

As regards the bearing of the fact that paræsthesia and anæsthesia were wanting, in the case which I have reported, upon the diagnosis of neuritis from arsenical poisoning, it is to be borne in mind that this fact militates no more strongly against the diagnosis of neuritis from arsenic, than against the other forms of neuritis. It is certain, as a matter of clinical observation, that these symptoms are sometimes wanting in each one of the forms of toxic neuritis, notably those from lead, as well as in some cases of local neuritis. It is also certain that in such cases severe and persistent rheumatoid pains may be present in the neighborhood of the joints,¹³ and it is equally true that the nutrition of the muscles may be seriously impaired, even in arsenical cases, without tenderness or marked or persistent numbness being present; as, for example, in a case reported by Jaeschke (l. c.).

Finally, the important question remains to be answered, whether it is possible that such serious symptoms as those described could be induced by such

small quantities of arsenic as five drops of Fowler's solution taken three times daily for six weeks. Such a result as this is, doubtless, rare, but an examination of the cases given below will show that it is possible. When it does occur the question naturally arises whether an unusual susceptibility on the part of the patient, or an unusually slow elimination, leading to accumulation of the poison in the tissues, is the cause.

Most writers say that arsenic does not accumulate, but is rapidly eliminated. By this is, of course, meant that the accumulation does not go beyond a certain limit, for it is evident that a drug which is not wholly eliminated until from one to six weeks after being taken, as is the case with arsenic, must, for a certain time, have been absorbed faster than it could be eliminated.

Moreover, certain writers believe that arsenic really is stored up in the body. Rayer¹⁴ quotes Bardeley to this effect, and Taylor cites Mr. Hunt, a writer on skin diseases, as holding the same view, but says that, in his own opinion, the facts adduced to show accumulation really show defective elimination, due to some particular cause, such as impaired action of the kidneys.

In the case under discussion to-night the kidneys seemed to be healthy, but the urine constantly contained a considerable amount of crystals of oxalate of lime, on repeated examinations during October and November. It is also to be remembered that the patient had been for a long time asthmatic, and was subject to chronic bronchitis, so that the process of oxidation may have been impaired.

It is also very important, in investigating the question of size of dose, to remember that it makes a vast difference in the result what preparation of arsenic has been taken, and that the common practice of expressing all doses in terms of the arsenious acid contained in them is clinically objectionable. Thus, as Devergie long ago pointed out¹⁵ ten minims of Fowler's solution contains only one-tenth grains of arsenious acid, but is, in its poisoning action, equivalent to several times that quantity. The same writer expresses the opinion, though without stating his evidence, that the sodium arseniate, as found in Pearcy's solution is relatively less active than the potassium arseniate of Fowler's solution. Devergie cites Boudin as having given up, to 0.15 (two and one-half grains) of arsenious acid in intermittent fever; whereas, Fowler himself gave only from one to thirty minims (gr. one-third) of his solution and occasionally with more or less serious results.

Under the general heading of *unusual susceptibility*, the fact should be considered, that whereas most persons taking small and repeated doses of arsenic for a long time become habituated and indifferent to its presence, in others this indifference is not established, or else ceases after a time, so much so that there is a general feeling that it is unsafe to continue the use of arsenic as a medicine too long.

But have we any gauge of the length of time that it may be given with safety in a given case? So far as I know, there is none, and an examination of the cases cited below will show that the interval which may elapse before symptoms of chronic poisoning show themselves varies widely.

¹² Medico-Legal Journal.

¹³ See Stillé, *Materialia Medica, Art, Arsenic*.

¹⁴ *Diet. de Med. et de Chir. Prat.*

¹⁵ *Bull. Gen. Therap.*, lxxii, p. 49.

The peasants of Steiermark learn, by gradual habituation, to take up to two or three, possibly four, grains a day, without the least inconvenience, a dose which is beyond the border line of danger, but it is stated by several writers that they become occasionally the victims of paralysis and other serious symptoms as a result of this habit.

I have recently seen a patient with rheumatic arthritis who has used $\frac{3}{5}$ gr. of arsenious acid three times daily, with regular intermissions, for a year or more without discomfort. This winter, she found that even a few doses caused abdominal pain and swelling of the eyelids.

Possibly, the occasional bad results may sometimes be due to a temporarily impaired secreting power on the part of the kidney, induced by the arsenic, which is known to cause, at times, albuminuria.

Taking the reports as we find them, we learn such facts as the following about the occasional effects of small and moderate doses:

(1) Gourberye¹⁶ treated a female patient for a cutaneous affection with gtt. ij of Fowler's solution (presumably 3 t. d.) for fifteen days, but violent rheumatoid pains came on, which obliged her to keep her bed, and ceased when the medicine was suspended. The same thing happened again the following year, under the same circumstances.

(2) Huss¹⁷ saw convulsions, pains in the back, and generalized muscular weakness and tremor, and formication follow the use of arsenious acid in dose of gr. $\frac{1}{4}$, 2 t. d.

(3) Gaillard¹⁸ reports the case of a woman who was advised to take fifteen drops of Fowler's solution twice a day for two weeks; then three times a day for two weeks; then four times a day for the same period. The treatment was continued up to the fifth week, in spite of some unpleasant effects. Then a whole train of poisonous symptoms appeared, ending in paresis of all four extremities, which continued to grow worse for some weeks after the medicine had been given up. In the five weeks, she may have taken upwards of two ounces and a half.

(4) Dr. Turnstile,¹⁹ of Bath, Eng., reports the case of a young woman who took \mathfrak{m} iij of liquor arsenicalis for seven days, at the end of which time she became for a time seriously prostrated. Also,

(5) A similar condition in a young man.

(6) In the *Canada Medical and Surgical Journal*, Montreal (1886-87, Vol. 15, p. 716), a case is reported where Fowler's solution, in doses of \mathfrak{m} xx to xxx caused acute symptoms of poisoning, with paresis, ending in death. At the autopsy, signs of active multiple neuritis were found, with lesser changes in the spinal cord.

(7) Dr. Cummings²⁰ reports the case of a man who took gtt. iij to vi of Fowler's solution three times daily for two months; then a smaller dose for another month. This produced what was called "irritation of the lower extremities and symptoms of inflammation of the stomach."

(8) Dr. Jno. Barry²¹ reports the case of a lady, who, while taking a course of arsenic (dose not given)

under the observation of a London practitioner of great experience with the drug, was suddenly attacked with paralysis of both hands and feet. There is, however, some reason to think, to judge by the report, that an external use of arsenic may have played a part in the result.

(9) Dr. Hastings²² reports the history of a patient who, after taking gtt. iij to v of Fowler's solution for some weeks, suffered from great weakness and partial paralysis of both arms and legs, with burning pains in the feet.

(10) Gibb²³ gives the history of a woman who for years had used arsenic as a medicine. She was finally attacked (November 18th) with severe neuralgic pains, successively in both groins, and the left hip, shoulder, and side, and a few months later with a numbness, and eventually complete paralysis of the legs, which are said, by the way, to have "felt quite numb, although sensibility (to objective tests?) was perfect."

The patient died on April 23d of the following year, and, on examination of the tissues, a trace of arsenic was found in the bones and liver. This is an important observation, because, if we may assume that she ceased taking arsenic at the time the severe neuralgic symptoms set in, we find that elimination was not complete at the end of six months.

(11) In the *Dublin Quarterly Journal*, Vol. 36, p. 474, the case is recorded of a man who took \mathfrak{m} iij of Fowler's solution three times daily for ten or twelve months, at the end of which time symptoms of arsenic poisoning came on suddenly, terminating in death at the end of thirty-six hours. If Taylor's²⁴ opinion is to be taken, this would prove that a dose sufficient to cause poisoning must have been recently taken, but the history gives no hint that this occurred.

(12) Another instance of poisoning from medicinal doses is recorded by Dr. C. L. Dana in *Brain*, 1887, and forms one of his interesting cases of pseudo-tubercles, with paralysis. The patient had been taking Fowler's solution in gradually increasing doses, and had finally reached f 3ss²⁵ (whether more than once daily is not stated), when the paralytic symptoms came on.

(13) Dr. Hooper²⁶ reports the following case, which is of special interest:

The patient, an adult male, took five drops of Fowler's solution three times daily, from the month of October until the 24th of June of the following year. At that time he came to Dr. Hooper for an ophthalmia, and by his advice the arsenic was immediately discontinued. Nevertheless, the following symptoms soon made their appearance: headache, drowsiness, nausea, excessive sense of weakness and prostration, rapid pulse, progressive paralysis, widespread muscular tremor, conjunctivitis with oedema, insomnia, irritation of the larynx and trachea, and increasing debility, ending finally in death on the 13th of September, three months after the cessation of the arsenical treatment.

(14) Dr. Jones²⁷ gives the case of a lady, who, for a cutaneous disease, was given gtt. v to xv of liquor arsenicalis, 3 t. d. After taking these doses for about a month, she was found presenting the symptoms of

¹⁶ Loc. cit., p. 92.

¹⁷ Ale. Chr., cited by Gourberye, *Gaz. Med.*, 1858, Obs. xxviii.

¹⁸ Soc. de méd. lég. de France, T. 3, 1874; cited by Gourberye, *L'empoisonnement*, ars., p. 20.

¹⁹ *Provincial Med. Jour.*, 1848.

²⁰ *Dublin Quart. Jour.*, Vol. 18, p. 423.

²¹ *Dublin Med. Press*, May 6, 1863; *Dublin Quart. Jour.*, Vol. 35, p. 160.

²² *Provincial Med. Jour.*, August, 1848.

²³ *Trans. of the Path. Soc. of London*, Vol. 9, 1860, p. 442.

²⁴ *Poisons*, p. 294.

²⁵ Printed erroneously as oz. ss in the original; as Dr. Dana authorizes me to state.

²⁶ Cited by Taylor.

²⁷ *Provincial Journal*, November 18, 1883, p. 127; cited by Taylor.

intense gastro-intestinal irritation, scanty urine, serious trophic changes in the legs, associated with crampy sensations and "partial loss of motion and sensation."

If, instead of confining ourselves to the paralytic cases, we should ask how often general symptoms of poisoning result from small doses of arsenic, it would be an easy matter to extend this list.

Thus, to go no further than Taylor, a careful and apparently conservative writer, we find in his "Treatise on Poisons" (2d Am. ed., p. 339), the following cases cited:

(15) Dr. Burne. A young female took gr. $\frac{3}{10}$ of assenious acid [= about $\frac{1}{16}$ vi of Fowler's solution] daily for four days. She then suffered from inflammation of the stomach, delirium, palsied shaking of the head, and such a degree of debility and exhaustion as to place her in imminent danger.

(16) Taylor (p. 340). Gr. $\frac{3}{10}$, taken once or twice a day for seven days, apparently caused "sickness, irritation of the skin, and eczema over the whole body."

(17) Taylor (p. 335). An adult female took in three doses \mathfrak{m} xxx of liquor arsenici chloridi (said to be a very poisonous preparation) in the course of twenty-four hours. The quantity of arsenic thus taken was not more than the tenth part of a grain, and yet the symptoms which followed were of a severe kind, resembling those of chronic poisoning. There was constriction of the throat, pain and irritation of the stomach and bowels, tingling and numbness of the hands and feet, loss of muscular power, and a feeling of extreme depression. The medicine was withdrawn, and the patient slowly recovered. Taylor gives the usual medicinal dose of this preparation as from three to ten minims.

Finally, I would suggest that some of the lighter symptoms of poisoning from arsenic in small doses may be overlooked or referred to other causes.

I have recently had in my own practice the following case: I ordered for an adult female, with Graves's disease, the following mixture:

R	Fowler's sol.	.	.	.	.	6.00
	Pyrophosphate of iron	.	.	.	.	5.00
	Elix. calissaya	.	.	.	.	500.00

M.
Dose, two teaspoonfuls, t. i. d.

Within, literally, a day or two after beginning to take it, the patient felt symptoms of severe gastro-intestinal irritation, from which she had never suffered before — great pain, nausea, vomiting, and for a time diarrhœa. The medicine was discontinued, but it was a month before she was able to retain solid food, and during the convalescence, as she expressed it, "the whole skin of her mouth came off."

These instances of serious poisoning from small doses of arsenic are, no doubt, very rare, as compared with the vast mass of cases where the drug has been given for long periods without harm. Still, probably more such cases exist than have been reported, and, at any rate, there are enough to show that the danger of poisoning from medicinal doses, though slight, yet is real, and I cannot but sympathize with the following sentiment, expressed by Jaeschke in his inaugural dissertation: "Arsenic is at once a dangerous and a treacherous poison. Let the limits of safety once be overstepped, and there is risk, not only that serious temporary results may follow, but also that, after these have passed away, painful and disabling affections may be left behind."

That it is an agent of the greatest value is also true,

and we need to study its action with great care, in order to extract its good effects and avoid its dangers. To this end I think the following facts should be borne in mind:

(1) The temporary tolerance of a given dose of arsenic, whether large or small, is not a sufficient proof that it is being disposed of so that it will not cause symptoms of poisoning after an indeterminate time.

(2) It is not always enough to withdraw the medicine when the first symptoms of poisoning show themselves, partly because several weeks at least may still elapse before the remaining arsenic can be wholly eliminated, and partly because the symptoms are apt to go on increasing in severity without renewed ingestion.

When this paper was read, Dr. F. C. Shattuck reported in connection with it a very interesting case, which will be found described in the records of the meeting. The patient was a young married lady, and her symptoms consisted in rheumatoid pains in all four limbs, of long duration, and accompanied with some general debility, and with tenderness in the muscular masses and along some of the nerve-trunks. Arsenic had been found in the wall-paper, and an analysis just made by Professor Wood had shown the presence of a small quantity also in the urine. This case acquires a special interest from the fact that the lady is niece to my patient, and that both of them belong to a family in which marked ability and grave neuroses have been common. I had purposely avoided dwelling, in my paper, on the possible influence of a neuropathic constitution in predisposing to an organic nervous affection such as this, feeling that my diagnosis ought to be based on more definite clinical grounds. That such a predisposition may exist is, however, almost beyond a question, and I gladly take the opportunity offered by Dr. Shattuck's interesting communication, to call attention to the fact.

A CASE OF TUBERCULOSIS OF THE BLADDER, PROSTATE AND KIDNEYS, ORIGINATING IN TUBERCULOUS EPIDIDYMITIS.—AUTOPSY.

BY F. S. WATSON, M.D.

THE specimens I show here to-night come from a patient aged thirty-five years, who died to-day, and who has been under my observation for the past fourteen months.

I offer the history of the case to the Society somewhat in detail, as serving to illustrate the course of a disease which is often obscure and difficult of diagnosis.

V. M., aged thirty-three years, married eight years since. Consulted me February 10, 1887. Twelve years previous he had his first gonorrhœa, a gleet persisting for three years afterward. A fresh attack occurred soon after recovery, which only lasted a few weeks. About eight years ago noticed a small nodule in either epididymis, about the size of a pea. These nodules were hard and painless, and, I may say at once, never changed their character during the patient's life. Four years ago he began to suffer from frequent urination.

Coincident with the appearance of frequent urination the stream grew smaller.

These symptoms remained unchanged during the next two and a-half years, when he sought surgical ad-

¹ Read before the Suffolk District Medical Society, at the Annual Meeting, April 29, 1888.

vice. The diagnosis of stricture was made, and the patient was operated upon by the method of division. The previous symptoms were at once aggravated. The operation was followed by chills and fever, and he lost in a few weeks thirty pounds weight. On recovery from the acute attack, however, a No. 16 English steel sound could be passed readily into the bladder.

Eight months before I saw him he had measles, and on recovery noticed that his urine contained a dirty gray sediment and small clots of blood from time to time. Two months later he entered the Massachusetts General Hospital, where he was treated by the introduction of large sounds, 32 (French), and washing of the bladder with boracic acid solutions. The symptoms were aggravated by whatever local treatment was employed. When I first saw him he had been out of the hospital for two months. He was thin and haggard, had an anxious expression of countenance, was very weak, and walked bent over, and feebly. The desire to urinate was almost constant, and every fifteen minutes the bladder voided an ounce or a few drops of urine, thick with pus. The urine was neutral. (Specific gravity, 1005.) Contained a large trace of albumen. The sediment consisted of pus corpuscles, blood corpuscles, epithelial cells of a great variety of shapes. He complained of a constant dull pain in the perineum. The prostate, by rectal examination was slightly enlarged. There was no tenderness on pressure over the pubes.

Microscopic examination of the urine for tubercle bacilli was negative.

During the next month internal medication for the relief of the painful cystitis failed to give the least relief. Blood in small quantities appeared in the urine occasionally, independent of exertion.

He was then sent to the City Hospital, where, owing to the kindness of Dr. E. H. Bradford, in whose service he entered, I made a digital exploration of the bladder through the perineum.

The inner surface of the bladder was roughened, as though occupied by very superficial ulcerations. Beyond this the examination was negative.

The operation was not followed by any constitutional disturbance, nor, on the other hand, was any mitigation of the symptoms obtained by it. The patient made a rapid recovery, and the perineal wound was healed at the end of three weeks. He left the hospital, however, in an exceedingly poor condition. The nodules in each epididymis, the marked constitutional disturbance of the patient, wasting and loss of strength, the unvarying presence of pus, and the occasional appearance of blood, the aggravation of the symptoms on every local interference, the total inefficacy of local and medicinal remedies in mitigating the symptoms, and the feeling of the mucous membrane of the bladder led me to the conclusion that I was dealing with a case of tuberculous disease of the genito-urinary tract. The patient was now put upon cod-liver oil, nourishing food, and sent to the country. I did not see him again for three months, when he walked strongly into my office, told me that he had gained thirty pounds in weight, and could hold his water for an hour at a time without difficulty. He then returned to the city. Shortly afterward, that is, about six months before his death, the amelioration in his symptoms ceased, and they returned in their full severity, pain being now a prominent symptom, referred chiefly to rectum and perineum. Rectal ex-

amination now showed a greatly enlarged prostate. Defecation became exceedingly painful. About one month later the rectal symptoms suddenly disappeared, and rectal examination showed a prostate of normal size, the inference from these facts being that the prostate had been the seat of a tuberculous abscess, which had finally ruptured into the urethra, causing a disappearance of the swelling. The specimens confirm, as you will see, this view.

The patient now gained again, and a surprising degree of strength and energy returned. Two months later, however, a new accession of bladder pain, with great prostration, supervened, and to-day, after as suffering an illness as I have ever watched, he died.

No clinical evidence of tuberculous disease of parts of the body other than of the genito-urinary tract existed during life. A partial autopsy only was possible. The kidneys, bladder, prostate, membranous, urethra, rectum and testicles were obtained.

In the epididymis of this testicle I have laid open the nodule which was the earliest manifestation of the disease, and apparently its point of origin. It consists of a sac, with a cheesy contents entirely broken down, a process of long standing. Both lobes of the prostate are occupied by the now somewhat shrunken cavities of tuberculous abscesses, containing cheesy material, and communicating by several openings into the prostatic urethra, some of which would admit a No. 12 French bougie.

The whole organ, however, was not enlarged. The bladder-wall was irregularly thickened, the capacity of the viscus small, the mouths of the ureters stood open, and were of a size to admit a goose quill. The mucous membrane was occupied throughout its entire extent by superficial ulcerations. Both kidneys are the seat of a tuberculous pyelo nephritis, the pyramids and cortical portions being occupied by cavities in various stages of development. The case throws no new light of importance on the class of disease of which it is an example, but emphasizes several facts already dwelt on by various writers, amongst which may again be pointed out as assisting in the diagnosis, the slow development of the symptoms, marked remissions in their severity, which are apt to arouse false hopes of the patient's recovery, and prove very deceptive, the constant presence of large quantities of pus of a dirty grayish-white color, the occasional appearance of blood, generally in small clots or mixed with shreds of pus, without exciting cause. The pus in this case was unlike that seen in cases of ordinary cystitis, in that it lacked the mucoous and theropy consistency so often noted in cases of ordinary cystitis of so severe a grade. The alkaline decomposition and foul smell were but slight. The presence of the nodules in either epididymis independent of gonorrhoeal process. The evident seriousness of the lesion in a previously strong, healthy man, as shown by the great loss of flesh and strength. The aggravation of the symptoms by all local interference. The total inefficacy of internal medication. The improvement following removal to better hygienic surroundings, and the employment of cod-liver oil and good food. Tubercle bacilli would no doubt have been found had the urine been more frequently examined for them.

The case furnishes another example of the local limitation of the disease in some instances to the genito-urinary tract.

Two of the questions I asked myself while the patient was under my care, were: Was there a time when surgical interference might have prevented the general eruption of the disease along the genito-urinary tract? There was an interval of several months after the appearance of the nodules in the epididymes before urinary symptoms came on. An excision of these nodules might have prevented further progress, and should always, I think, be urged at an early period, when they cannot be definitely traced to a venereal or traumatic source. The second question is: Could any operation have been performed for the relief of the patient's sufferings after the disease was well established?

In another case which presented such suffering as this patient had, I should certainly advise the suprapubic opening of the bladder and the stretching of the vesical neck, in the hope of affording relief to pain. The perineal opening which I made in this patient did not relieve pain. It is interesting in this connection to note two cases of Professor Guyon's, published in the *Revue de Chirurgie*, April 10, 1888, page 314, in which he recommends that the high cut be performed in cases where the disease be limited to the bladder only, with a view to radical cure. It will be doubted by some if the disease ever occurs in this limited form.

His first case was that of a young man of twenty-four years. Cystitis for eighteen months, great pain, tubercle bacilli in the urine. Supra-pubic opening of the bladder, and swabbing out of the bladder with saturated iodoform oil, drainage. The tubes were removed on the seventeenth day. Forty-five days later pain was greatly diminished. Two years and a-half later patient was in excellent health, and the urine was clear, free from pus and bacilli.

Second case. Man of forty years. Vesical pain for four months. Numerous bacilli. Palliative treatment for four months. Had no effect. Operation as before. Curretted the inner surface of the bladder, and touched it with caustery. Tubes removed on the fifteenth day. Bacilli disappeared six months later. This patient, however, has still a cystitis.

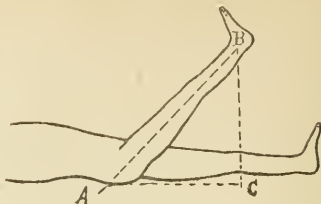
A METHOD OF DETERMINING THE ANGLE OF FLEXION OF THE DISEASED LEG IN HIP DISEASE.

By GEORGE L. KINGSLEY, A.B., HARVARD MEDICAL SCHOOL.

The estimation of the amount of flexion of the leg upon the pelvis, in the acute stage of hip-disease, is of much importance as a matter of record and as an indication of the progress of the case. The estimation of this angle is commonly made by the use of the goniometer. As one seldom has this instrument at hand, and as its use is attended with many disadvantages, the following method is offered:

The object of this article is to furnish a ready and accurate method of estimating with a common tape-measure the angle of flexion of the leg, and is intended to be supplementary to the article by Dr. Lovett,¹ on the estimation of adduction and abduction by a similar method. Lay the patient on his back on a table or any flat surface, and then raise the diseased leg by the heel until the lumbar vertebrae touch the table; this

shows that the pelvis is in the normal position and the angle which the leg makes with the table, the angle



C A B, is the angle of flexion of the thigh, from the normal position. It is this angle which it is desired to measure. Having placed the child in this position, measure off two feet on the external aspect of the leg with a tape measure with the zero of the tape on the table at (A), and note the point (B), from here measure the perpendicular distance in inches to the table (C), consult Table I and opposite the number of inches found by measuring B C, will be found the number of degrees representing the flexion of the diseased leg from the normal position.

Now we have a right-angled triangle A B C, of which the sides A B (24 inches) and B C (by measurement) are known. $\sin C A B = \sin B A C$ (the angle of flexion), or $B C = A B \sin B A C$. Therefore, if we compute by this formula a table which shall give the angles corresponding to the various lengths of B C, having measured this perpendicular distance (B C) we can by glancing down the table until we find the number corresponding to the distance measured, ascertain the number of degrees in the desired angle.

TABLE I.

In.	Deg.	In.	Deg.	In.	Deg.
1.5	1	6.5	16	12.5	31
1.0	2	7.0	17	13.0	33
1.5	3	7.5	19	13.5	34
2.0	4	8.0	20	14.0	36
2.5	5	8.5	21	14.5	37
3.0	6	9.0	22	15.0	39
3.5	7	9.5	24	15.5	40
4.0	10	10.0	25	16.0	42
4.5	11	10.5	27	16.5	45
5.0	12	11.0	28	17.0	47
5.5	14	11.5	29	17.5	47
6.0	15	12.0	30	18.0	48

If the leg is so short that it is impracticable to measure off twenty-four inches we can measure to a point on the leg distant twelve inches from the table, ascertain the distance to the table in a perpendicular line just as before, double this distance and look in the table as before.

REPORT ON PROGRESS IN DERMATOLOGY.

By G. H. TILDEN, M.D.,

Physician to City Hospital, Department of Diseases of the Skin; Instructor in the Boston Polyclinic.

TREATMENT OF LUPUS ERYTHEMATOSUS.¹

The treatment of this disease being an uncertain and often thankless task, the following lecture upon the subject by an eminent authority is of interest. The treatment of lupus erythematosus is essentially different both in ways and means, from that of lupus vulgaris. In the case of lupus vulgaris it is possible by chemical or mechanical means to destroy and get rid of the pathological infiltration which constitutes the disease. When this has been done and the loss of

¹ Boston Med. and Surg. Journ., March 8, 1888.

¹ Kaposi. Allgemeine Wiener Med. Zeitung, No. 8, 1888.

tissue thus occasioned, has been replaced by healthy granulation tissue, then something definite has been accomplished. It is beyond our power to prevent the occurrence of new nodules of infiltration, but those which exist can be entirely removed, the difficulties in the way consisting in the localization, distribution and amount of pathological tissue which may be present. With regard to lupus erythematosus the affair is in certain respects more difficult, in others more promising than is the case in lupus vulgaris. In lupus erythematosus we have to deal with an inflammatory process, which is peculiar in the fact that the inflammatory infiltration eventually undergoes a change which is probably fatty metamorphosis, and from its absorption there results an atrophy and shrinking of the cutaneous tissue. This inflammatory process is not confined to the sebaceous glands and their neighborhood (as suggested by the name *seborrhœa congestiva*), but may occur anywhere in the skin where there are bloodvessels, and if the disease has advanced to the stage of atrophy of tissue, it is impossible to remedy the defect which has taken place.

The primary object in the treatment of lupus erythematosus is to induce in some way a cessation of the inflammatory process before fatty degeneration and atrophy of tissue have occurred. If this result be obtained then the disease disappears without leaving behind any trace of its existence. Such an arrest and disappearance of inflammatory infiltration can in no case be induced by the use of caustics, but it may and does occur without any treatment whatever, and in the worst instance, lupus erythematosus if left to itself, never results in the formation of ulcers and deep-seated cicatrization such as are met with in lupus vulgaris. It is all important, therefore, in the treatment of lupus erythematosus never to employ means which will do more damage than the disease itself will occasion. The outlook, however, is unsatisfactory, inasmuch as it is impossible in any given case to state beforehand what sort of treatment is going to produce a good result or whether the treatment employed may not by reason of the irritation it causes, induce an extension of the disease, which otherwise might not have taken place. It is this uncertainty of result and prognosis which renders the treatment of lupus erythematosus so eminently unsatisfactory, and in no instance is it possible to give any definite opinion as to how long the disease will last or as to the result of treatment.

The corollary of all this is that treatment should always be begun with the application of remedies which are mild in their action. Often more will be accomplished in this way than by the use of more active measures. The first thing to be tried is rubbing the diseased regions of skin with various kinds of soap, toilet soap, soda and potash soaps, soft soap and spiritus saponatus kalinus. The soap should be applied to the skin with energetic friction every day, and it is noticeable that the spots of lupus erythematosus do not readily become excoriated. Often the healthy skin in the neighborhood will be deprived of epidermis much sooner than a spot of lupus erythematosus. This is the case whether soap, or other and more active remedies are employed, and is due to the fact that one of the essential features of the disease is, that the sebaceous glands involved, produce a thick, overlying layer of accumulated and fatty epidermis, which is more resistant to the action of soap or caustics than is

normal epidermis. After a spot of lupus erythematosus has been rubbed with strong soap, there oozes from the lesion a small amount of serum which should be allowed to dry, forming a small yellowish crust which falls off in four or five days. If, after this, the edge of the inflammatory patch remains flat and does not extend peripherically, it signifies that the treatment has been beneficial. If signs of irritation appear, the border of the infiltrated patch becoming elevated and the redness increasing in extent as well as in degree, then indifferent and soothing substances should be applied until the inflammatory exacerbation subsides. In the same way may be used in various strengths caustic potash and pure ammonia water, also mild acid applications of acetic, muriatic or carbolic acids. The strong acids, especially mineral acids, such as sulphuric, nitric and chromic acids should never be used. Whenever the stronger applications have been used and have effected nothing, one should go back again to the milder remedies, for what is inefficient at one time may be beneficial at another. Tar, in combination with various soaps, such as sulphur and naphthol soap, or in the ointment known as Wilkinson's ointment, sometimes produces good results. Occasionally applications of ice, lead water or of liquor Burowi are beneficial, and of the regular caustics the best are pyrogallic acid, salicylic acid, chloride of zinc and arsenic paste. Brilliant results are sometimes seen from the application of mercurial plaster. In cases where the disease is extensive the best treatment consists in the use of tar and mercurial plaster, applied to small regions of the disease at a time. Patients with lupus erythematosus have a certain tendency towards anæmia and phthisis, and in most cases, good diet and pure air, are needful, together with arsenic, iron and cod-liver oil.

PATHOLOGY OF LICHEN RUBER.²

Since the year 1880 the writer has collected fifty-two cases of lichen ruber, of which number thirty-five occurred in men and seventeen in women. Seven of these cases exhibited also lichen affecting the mucous membrane of the mouth and tongue. In only two instances did the disease take the form of universal lichen ruber acuminatus, and this variety of the malady was found to be much more intractable to treatment by the administration of arsenic both by the mouth and by subcutaneous injection, than lichen planus. The mixed form occasionally met with was not found to be especially obstinate as regards treatment, however.

The possibility of a neuropathic origin of lichen ruber was first suggested to Köbner by the case of a woman forty-five years of age, who was affected simultaneously with widespread lichen ruber acuminatus and with the early symptoms of progressive bulbar paralysis. In this instance the skin of the whole body was red, the color of a raspberry, and the woman was covered from head to foot with elevations of the skin, rough, like a file, between which there existed islands of normal skin, which appeared as depressions of the general surface. Besides the paralytic symptoms, the patient suffered from intolerable itching, and presented a high degree of emaciation.

In another instance the localization of the cutaneous eruption followed closely the distribution of certain

² Köbner, Berliner Klin. Wochenschrift, 1888, No. 20. Centralblatt für die Med. Wissenschaften, 1888, No. 8.

cutaneous nerves, and in the same case a recurrence of the eruption was confined in its distribution to exactly one side of the penis. As further evidence of the neurotic origin of lichen ruber, Köbner mentions the intense itching which deprives the patients of sleep, and which may long precede, as well as accompany the cutaneous eruption. The majority of patients, also, who suffer from this malady, are of the neurotic type, and the affection often follows mental shock, worry and anxiety. It is worthy of notice, also, in this connection, that in many cases the outbreak of lichen was preceded by attacks of urticaria, which in one instance outlasted the lichen by one year and a half. In many instances the patients exhibited a sensitive condition of the vaso-motor system, which manifested itself by the ready formation of the so-called "taches cérébrales" upon irritation of the skin. Occasionally, also, the eruption seemed to be produced by scratching, or by the irritation due to the pressure of some article of clothing. Contrary to Lassar's experience, no connection could be made out between the occurrence of the disease and the occupation of the patient, and in no instance could any form of micro-organism be detected in microscopic preparations made from the cutaneous nodules peculiar to the disease.

A FORM OF CHRONIC INFLAMMATION OF THE LIPS AND MOUTH, WHICH SOMETIMES ENDS FATALLY AND IS USUALLY ATTENDED BY DISEASE OF THE SKIN AND NAILS.³

The author's attention has been drawn during the past ten years to certain cases of a peculiar variety of disease, in which a severe form of ulcerative stomatitis was followed by disease of the skin, and which sometimes, after a duration of several months, ended fatally. These cases are important by reason of their severity, from their close resemblance, in some instances, to syphilis, and from the fact that they are curable, for the most part, by one remedy only. On this latter point the author speaks with caution, because the evidence with regard to it is not complete. There appears, however, reason for believing that small doses of opium, frequently repeated, will usually cure the malady, which resists all other drugs, and tends slowly but surely to end in death. The author is not prepared to offer any suggestions as to the pathogenesis of this disease, but merely describes its clinical features. In all of the best marked examples of the affection seen by Hutchinson, the patients have been men, generally past middle life, living in the country, enjoying until the beginning of the attack, excellent health, and in positions which enabled them to secure all the comforts of life. In some less well marked cases the patients were residents of London. The writer considers it not improbable that the pathological condition of the system which gives rise to this form of stomatitis may be allied with that which is at the root of certain forms of skin disease, notably pemphigus, in which the constitutional symptoms are severe, and in which the mouth is occasionally affected. In pemphigus, however, the cutaneous manifestations always precede the affection of the mouth, whereas, in the form of disease under consideration the reverse is the case.

The first instance of the malady seen by the author

occurred in a master carrier of fifty-eight years of age, who began to be ill during the end of December, 1879, and died in about four months. His illness commenced with soreness of the month, which was quickly followed by swollen hands and feet "like chilblains." Later on a vesicular eruption appeared on his hand, with inflammation of the nails, and there was spontaneous pyalism with sore throat and lips. Then a bullous eruption extended over the whole body, and the nails fell off. Lastly large masses of granulation tissue developed on the excoriated surfaces left by the bullae and some of these masses became pedunculated. The man died from exhaustion, and the autopsy showed some recent broncho-pneumonia with pleurisy, on the left side, and also the existence of a large lympho-sarcomatous tumor situated in front of the spine, and embedding the pancreas and large vessels. The existence of this tumor was not suspected during life, and the writer is inclined to regard it merely as an accidental concomitant of the disease. The next case occurred in a gentleman whose age is not given, and began with a "very severe form of inflammation of the mucous membrane of the month, the whole interior of the mouth being intensely reddened, and exhibiting on the arch of the palate, on the tonsils and pharynx, patches of very delicate pellicular whiteness, which looked as if they had been produced by the application of caustic." In a few weeks there was developed pyalism which became constant, then appeared in the flexures of the joints, moist and warty growths, followed by suppurating inflammation of the nails, and by the development of a pemphigoid eruption over the whole body. After the illness had lasted five months the patient, who had become emaciated and weak, died from exhaustion. The post-mortem examination revealed no structural disease except recent hepatization of the lower lobe of the right lung. These two are the only fatal cases of the disease which have come under the author's own care, and in neither of them did treatment, principally by arsenic and quinine internally, have any effect whatever. In the second case, opium was given, but not until the very last stages of the malady. Two other cases, in which the stomatitis was severe, but in which the cutaneous symptoms never became formidable, have been also seen by Hutchinson. They both occurred in males, forty-six and fifty years of age respectively. They began with superficial ulcerations of the mucous membrane of the month, the margins of which were reddened, and the bases of which were covered by a distinct pellicle of a grayish color, the removal of which caused bleeding. In one case, after the affection of the month had lasted some three months, there appeared some patches of a sort of papillary psoriasis on the backs of the hands, his toenails became inflamed, and several of them were lost. In the other instance there was no affection of the skin except a lichenoid eczema of the left side of the abdomen, which had existed for some years. In both cases there was much weakness and loss of flesh, and in neither did the treatment by arsenic, quinine, iodide of potassium, the use of various mouth washes, and the application of caustics to the ulcers, have any effect whatever. Both cases recovered permanently under the use of small and often-repeated doses of opium. Another and very similar case, occurring in a farmer, sixty-six years of age, and who became very weak and much emaciated, recovered permanently un-

³ Jonathan Hutchinson. *Medico-Chir. Transactions*, Vol. lxx, p. 421.

der the administration of opium for several months. A sixth instance of the malady, the patient being under the care of another physician, was also seen by Hutchinson, but the treatment by opium was not resorted to until a late period in the disease, and the patient died. In this last case the affection of the mouth was coincident with an eruption of the skin, the exact nature of which is not stated.

These six cases are regarded by the writer as examples of the severer form of the disease. In three instances death resulted. In two the patient is known to have recovered under the opium treatment, and, to have remained well. All the patients were men, and none of them were under forty-five years of age. All had been in good health until the first symptoms of soreness of the mouth occurred. In all the three fatal cases, the inflammation of the skin which followed the affection of the mouth was extensive and severe, while in the three which recovered it was but slight, in two, indeed, being almost absent. In one of these three, although the eruption was but very limited in extent, affecting only the hands and feet, there was the peculiar feature of inflammation of the toenails, and from four of the toes the nails were shed. In none of the fatal cases had the opiate treatment been tried until within a very short period of death.

In the next group of similar, but less severe cases, the author mentions instances in which are still encountered the combination of sore mouth and an eruption on the skin, the soreness of the mouth taking precedence in point of time over the skin disease. In these cases, however, the disease showed itself much more amenable to treatment, and, indeed, the patients occasionally recovered without any definite treatment. The disease also showed a tendency to recurrence after a few years' interval. One of the patients in this group was a woman thirty-five years of age, and the other two were men, aged, respectively, thirty-six and forty-six years. In one of these, arsenic effected a definite, but temporary, cure on more than one occasion. In two of them the beneficial effect of opium was very marked, in one a rapid cure taking place under its influence. In none of these three cases was there any approach to the failure of health which took place in the cases included in the first group. The patients in this group being younger than the others, suggests to the writer that the age of the patient may have something to do with determining the severity of the affection. The cutaneous eruptions in these cases were of various kinds, in one instance consisting of dry and scaly superficial patches on the body, combined subsequently, with an abundant eruption of erythema multiforme upon the hands; in another, of patches of erythema upon the hands and feet, which vesicated, but without producing bullae. In all of these the affection of the mouth consisted in an acute stomatitis, attended with the formation of superficial excoriated patches, which were covered with a whitish, pellicular membrane, the removal of which caused bleeding.

In conclusion, the author remarks that none of these cases seem to throw any light upon the real cause of the disease. It may, however, be conjectured that it is allied to some of the severe forms of skin disease which are attended by failure of the general health, and which tend to a fatal issue. Examples of this are seen in pemphigus, of which the natural termination is death in six months, unless cured by

arsenic, and in which, as a further feature of resemblance, the mouth is in some cases affected, as well as the skin. Nor is pemphigus the only instance, for pityriasis rubra and certain rare forms of psoriasis and lichen ruber and planus, especially when occurring in the aged, show a tendency to end in death by exhaustion. The precise form of the skin eruption does not seem to be of much consequence, for whatever it is, if it become very extensive, the patient's strength may fail and death result. It is a very remarkable fact that these diseases, like the one described, almost always begin in those who, up to the time of the attack, have been in excellent health. The failure of health always appears to be due to the extension of the local disease. The features in which the cases described differ from those just referred to, is that the mouth became inflamed before the skin was affected, and suffered throughout with preponderating severity. The disease of the skin differed much in the several cases. In one it appeared to be a direct extension from the lips to the skin of the chin, which became greatly thickened and covered with papillary outgrowths. In others there was developed a bullous eruption, resembling pemphigus in appearance. In several instances, warty excrescences occurred in great abundance in the flexures of the joints, while in two instances a few eczematous patches on the hands and abdomen constituted all the skin affection that ever showed itself. In all the severe cases the nails became inflamed. It is impossible not to be struck with the apparently specific efficacy of opium and the uselessness of other drugs. The writer thinks it may be fairly asserted that in all the cases where opium was given early enough, it cured the patient, not only removing the local symptoms, but restoring perfect health, and he does not doubt but that this observation of the usefulness of opium may with advantage be extended to many chronic maladies affecting the skin in elderly persons.

A striking example of the beneficial effect of opium in this direction is given by Hutchinson at the close of the article. The patient was a woman sixty-one years of age, who had been in good health until her hands began to inflame. The disease took on the form of a sort of exfoliative dermatitis, which developed with exact symmetry on hands and feet, and gradually spread. All the nails were inflamed, and when the process invaded the scalp all the hair fell out. No treatment had any effect in arresting the progress of the malady. She was treated by Hutchinson for four months with arsenic, phosphorus, and other remedies internally, and various local applications, but with no better result. Things kept growing worse and worse, and her general health became visibly affected, the patient being bald, emaciated, and with hands and feet rendered quite useless by the malady. Opium was then prescribed. Improvement began immediately, and after about four months' continual use of this remedy the patient was in excellent health, her hands were quite well, and all her hair and nails had grown again. At the time the paper was read the opium had been laid aside for three months, and there was no recurrence of the malady, but subsequently there appeared some slight symptoms of a relapse.

— A training school for colored nurses is connected with the Spellman Seminary, Georgia.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.

H. L. BURRELL, M.D., SECRETARY.

ANNUAL meeting, Saturday evening, April 28th, at 19 Boylston Place, 8 P. M., DR. JOHN ROMANS, President, in the Chair.

Records of the previous meeting read and approved.

A list of the deaths and removals was then read.

The Secretary read a communication relative to the establishment of a hospital for the treatment of inebriates.

There was then read a communication from the Georgia Medical Society, in reference to the furnishing of medical and surgical supplies free of duty.

On motion of DR. J. J. PUTNAM, the matter was referred to a Committee, and the President referred it to the Committee on Supervision.

DR. J. J. PUTNAM read the paper of the evening, on DISEASE CAUSED BY MEDICINAL DOSES OF ARSENIC, WITH REMARKS ON THE DIAGNOSIS OF MULTIPLE NEURITIS.¹

DR. C. F. FOLSON said: I do not know that I have anything to add to the paper. I have been extremely interested in it, and certainly can second everything that Dr. Putnam has said in regard to the diagnosis of multiple neuritis. If I recollect correctly, the first case that I recognized as such was in 1881. It was then an extremely uncommon disease. There had been very few cases in the wards of the City Hospital, and scarcely any cases reported as such in the outpatient department. At the present time it is a very frequent disease, or else we are very often making the diagnosis where it does not belong. I think that it is undoubtedly frequent, but it is quite possible that we may be swinging the pendulum a little too far in that direction. A great many cases, as Dr. Putnam says, are obscure and difficult of diagnosis because the usual symptoms do not occur. In many cases, also, the etiology is extremely difficult, so that it seems to me, before settling on any one factor, especially an unusual factor, one should be extremely careful to exclude all other possible causes.

I remember a case, for instance, which Dr. Lyman was kind enough to send me some time ago, a thoroughly well-marked case of multiple neuritis, in which it was for some time quite difficult to get at the cause, but it finally appeared that the lady had had two small children with diphtheria, and that she had been present in the sick-room for a great part of the time. She did not know that she had diphtheria at that time, but, considering the peculiar character of the multiple neuritis, I have no doubt that it was post-diphtheritic. In the same way, we have cases which are diagnosed as locomotor ataxia, in which, if you give iodide of potassium, the symptoms disappear; that is to say the case was one of multiple neuritis of syphilitic origin.

Sometimes, for instance, patients deny syphilis, and you learn from the physician who has seen them before that they had some signs of syphilis, and got well under syphilitic treatment. I don't say this to throw doubt upon the diagnosis in this case, but to make prominent the necessity of being very careful to exclude all possible sources of error in diagnosis. The question arises in this case whether the multiple neuritis,

granting the diagnosis, of course, is due to arsenic given in the prescribed quantity, namely, five minims, *t. i. d.*, so long ago and for so short a time. If so, I should stop prescribing arsenic altogether, valuable as I consider it. In this case, it seems to me, there is doubt whether the arsenic given is the real cause of the disease, if, as I understand, the gentleman improved while taking an asthma remedy containing arsenic.

DR. PUTNAM: He was not taking that at that time.

DR. FOLSON: Even then, there are a great many other sources of arsenic. I recall a patient who has been under my care for between two and three years; that is to say, I am the only person who has prescribed for her during that time. During this past winter she had evident symptoms of arsenic-poisoning. Dr. Hasket Derby was kind enough to see her in consultation with me. We have never found the source of the arsenic. There was no question whatever what it was, and the lady got quite well by leaving the suite of rooms in which she was living. There was no question of its being arsenic-poisoning. There was no arsenic in the wall-papers, but we did not examine everything in the suite, carpets, etc. That case illustrates the difficulty of making a diagnosis, and in my mind it would throw doubt on the diagnosis of multiple neuritis from arsenic given in medicinal doses, unless all other sources of arsenic are excluded. It is one which, of course, would be followed with a good deal of interest. I have seen something like ten cases of arsenical neuritis reported in the medical journals in the last three or four years, most of them from large poisonous doses; a few of them were from smaller quantities taken into the system over a very considerable period of time. The fact that, in the case reported this evening, arsenic was found in the urine five months after it was given up as a prescription, I should think would throw doubt on its origin.

DR. P. C. KNAPP said that he had listened with great interest to Dr. Putnam's paper, for he had under his care at the present time a case of mild arsenical paralysis from poisoning from wall-paper. He could add nothing to Dr. Putnam's account of paralysis from medicinal doses of arsenic; certainly, as Dr. Folson said, five minims three times a day for six weeks was a remarkably small dose to produce neuritis. He had never given very large doses of arsenic, rarely exceeding eight minims of Fowler's solution, and in those doses he had never seen paralysis, although he had, of course, seen the ordinary symptoms of gastro-intestinal irritation and swelling of the eyes.

DR. F. C. SHATTUCK spoke of a patient now under his care and suffering from an unquestionable neuritis, thus far at least, of only moderate intensity. This patient is a young married lady, a niece of Dr. Putnam's patient, and has this winter been much shut up in the house. The neuritic symptoms first appeared about three weeks ago, and consist in constant dull pain in the arms and legs, with stiffness of the joints, particularly the knees, and well-marked tenderness on pressure, not only over the main nerve trunks of the extremities, but also over the muscles themselves. A week ago samples of wall paper were sent Professor Wood, who found the paper of the library, the room in which, next to her bedroom, the lady passes most time, to contain a dangerous amount of arsenic. A sample of urine was then sent, and Professor Wood

¹ See Vol. cxviii, p. 416, of the Journal.

has been so kind as to hasten the analysis that its result might be reported this evening. He finds a trace of arsenic in the urine. Have we here the cause of the neuritis? There is no other apparent causative agent operative in the case. The near relationship between the two patients is of interest, and suggests the question whether there is any constitutional sensitiveness to the metal common to them both. We are everyday struck by the remarkable difference between individuals in the toleration of, or resistance to, toxic influences of various kinds.

This difference in resisting power is shown, perhaps as well as by anything else, by the wide differences in the toleration of alcohol. Can we not explain in a similar way the fact—for Dr. Putnam certainly seems to give us grounds for holding it to be a fact—that in certain persons a comparatively small amount of arsenic produces marked changes in the peripheral nerves?

DR. WEBBER said: I have been very much interested in Dr. Putnam's paper, and think he has brought up a subject which it is well for us to keep in mind, that there is a possibility of persons being poisoned with arsenic when it is given in medicinal doses long continued. Whether six weeks is long enough to be poisoned I think is very doubtful, but I have had patients sent to me, children with chorea, who had been taking small doses of arsenic for what seemed to me an unreasonable length of time, much longer than seemed to me was safe; taking doses which were entirely insufficient to relieve the disease—three or four drops of Fowler's solution—instead of running the dose up to as much as the patient will bear. Dr. Putnam has mentioned one case from a journal in Canada where twenty or thirty drops were given. That seems to me a large dose, and could hardly be called a moderate or small dose. The fact that the pains are about the joints, and that the joints are chiefly affected, might lead to the question whether or not the muscles which are affected are not affected secondarily to the disturbance of the joint, as Charcot has shown that the joint affections are followed by a disturbance in the nutrition of the muscles; and in some of the cases where the electrical reaction is not very much disturbed, whether it may not be secondary to the pain in the joints, and not due to the direct disturbance through the nerves.

It is interesting to notice, as Dr. Folsom has mentioned, how neuritis has come forward prominently, and so many different causes giving rise to it, and the variety in the symptoms. It seems to me it is a subject still requiring investigation how these various remedies affect the nerves, what portion of the nerve structure is affected. It is a subject open to experimental investigation, I think, and might lead to important results. The neuritis from lead, from alcohol, from arsenic and sulphide of carbon, and other causes, the neuritis which follows disease, such as the various fevers. It would, I think, lead possibly to very important results if we could have that investigation.

I think that Dr. Putnam, in closing his paper, has made some very important statements as to the caution and care necessary in using arsenic, in the fact that arsenic may be cumulative. That we should bear in mind that if it is not eliminated, there is a chance for such an explosion as he has mentioned.

DR. BELLARD: I would like to ask Dr. Putnam one question, and that is whether every other possible

source of the arsenic was examined in this case, and whether it was simply supposed to have been the medicine.

DR. PUTNAM: I cannot say whether it might not have been so. The only thing there could have been suggested was the wall-paper and the carpets, and this was a house where he had lived many years. Still, that inquiry ought, of course, to be made.

DR. BUCKINGHAM: I would like to ask the question whether, when the multiple neuritis follows, we are to have any warning before the explosion occurs; any warning to enable us to stop the arsenic.

DR. PUTNAM: I only want to say a few words. It seems to me that I entirely agree with Dr. Folsom that it is unadvisable to make extraordinarily apparent the consequences of a familiar process unless they can be well proved. At the same time, I think it is fair, at least, to inquire from time to time whether there are a number of facts that come together and support a rather unfamiliar fact; and that is what I attempted to do here. Of course, we all know that we give five drops of arsenic, and many people are capable of taking more than that, not only for six months, but for an indefinite time without injury. What one can take indefinitely, another person cannot take even for a very short time. The peculiarities of the patient and the conditions of elimination may entirely alter the circumstances of the case.

Now, in regard to the question whether that dose is too small to cause paralysis, I maintain that, as a matter of fact, if we can believe the reports—of course they are open to doubt also—but there are pretty straight reports which tend to show that the small doses do cause serious symptoms. I refer again to the young woman who took three minims in seven days and became prostrated. Another patient had serious rheumatoid pains by taking two drops of Fowler's solution, and had to take to the bed. There was the man who took six drops for two months, and then a smaller dose for another month, in whom it produced symptoms of irritation of the stomach.

With regard to the question that Dr. Buckingham asked, we have the report of the case of a lady who took a course of arsenic under the observation of a London practitioner who had had great experience in the use of the drug, although it was in 1863, and he may have given very large doses. After a time she was suddenly attacked with paralysis of the hands and feet. In another case a patient took from three to five minims, and suffered paralysis of both arms and legs, and great weakness.

Another patient took arsenic for a time without any symptoms, and then suddenly the symptoms came on. These seem to indicate that we do not know all about the matter yet. It is perfectly fair to throw open the possibility, at any rate, that such results as I record to-night may occur. It is very well known that serious paralyses result from the action of arsenic in wall papers, and yet the amount taken in that way is generally considered pretty small. The person is breathing the air of the room only a certain time, and it may be that the arsenic becomes changed into vaporous form so that it may be absorbed, yet the quantity must be very small or more serious consequences would occur. As a matter of fact, the results are not severe.

With regard to the matter of elimination, it is perfectly true, as Dr. Folsom has said, that elimination is generally considered complete in six weeks, but it evi-

dently is not the case. This woman whom I speak of stopped taking arsenic six months before she died. I say she stopped, for the symptoms came on at that time. At least, we may say that she is not likely to have taken it; and yet, after death, traces of arsenic were found in the viscera, the liver and bones. With regard to the matter of rheumatic neuritis, of course it is perfectly possible that the person may have that disease, but I should be inclined to say that the rheumatic neuritis is about as rare as the arsenical neuritis, if we compare the number of persons who have the rheumatic neuritis in reference to the exposure. The rheumatic neuritis is an excessively rare thing in my experience. Moreover, this neuritis came on in the summer weather of June. So that, while I agree that the case is not by any means proved to be an arsenical neuritis, or that the arsenic found in the urine six months after the last therapeutic dose was taken is the remains of that therapeutic dose, still it seems to me that both of these hypotheses are admissible as such, as a basis for further investigation.

Dr. F. S. WATSON then showed the specimens from

A CASE OF TUBERCULOSIS OF THE BLADDER, PROSTATE AND KIDNEYS, ORIGINATING IN TUBERCULOUS EPIDIDYMITIS.²

Dr. JOHN HOMANS showed a piece of omentum, weighing some two pounds, removed during a McEwen operation for the radical cure of hernia.

Mr. H. R. HEYDECKER showed a new trocar which he had invented, for tapping ovarian cysts.³

The report of the treasurer, Dr. Buckingham, was then received, and an auditing committee appointed by the chairman. It was voted that an additional assessment of one dollar be made for the coming year.

Dr. DAVID W. CHEEVER presented the report of the majority of the nominating committee.

Dr. A. B. MOROZO presented a minority report. He said: I make this minority report with a little explanation. I differ from the majority of the nominating committee with reference to the nominations of the council only. I agree with them entirely in the nominations for the other officers. The reasons for my dissenting from the nominations that they have made are as follows: In the list passed round the Society will notice that only two changes have been made in the council over last year. One was an addition, necessitated by the increase in numbers, and the other was due to resignation on the part of the last year's incumbent. It will be remembered that in the October meeting of 1886, there was a discussion about more frequent changes. There was brought before the Society an amendment to the By-Laws in reference to the changing of the entire council every five years. After lying over six months until the April meeting, it came up again, and at a very full meeting of the Society a vote was had upon the amendment. It failed of adoption by a two-thirds majority by only five or six, a very large majority of those present voting for it.

Such being the case, I felt it my duty to urge changes which I deemed the majority of the Society desire. It came out in the course of the meeting that there were seven or eight members of the council of the previous year who had stayed away from more

than one-half the meetings. Now, in the absence of any rule which forbids any one from serving more than a certain length of time, it seems a fair basis to work upon, if changes were to be made without prejudice, to base our changes on the attendance. It was found that there was one member who had not been present through 1885, another person had been present at only sixteen meetings during his time of service; another, twenty-seven; another, forty-one; another, forty-five; another, forty-seven. There were seven or eight persons who stayed away, whatever the reason may have been; and it seemed to me, in view of the expression of the wish of the majority of the Society, that there should have been more changes, that we might at least have made seven or eight changes; and I have cast my vote in favor of what I deem to be the desire of the majority of the Society.

Dr. CHEEVER: May I be allowed to say one word in explanation of the committee's action; I have had the honor to be the chairman of the committee I think for three years. During that time twenty-five per cent. of the councillors have been changed. That is, one-fourth in three years. It seemed to the majority of the committee, after a full discussion the other evening, that it was time to call a halt for a short time, for this year at any rate, because, on looking over carefully the list of available candidates and of suitable persons, it seemed that if we went on the basis of changing as we have been doing, that very many of those gentlemen who have had experience in the Society, and who have been useful, would be left out; and that, moreover, the younger graduates, who have to take their places, would, in the course of five or ten years, have exhausted the list down to the very youngest graduates; so that, if the change were going on so rapidly as that, the council would hardly be considered the representative of the more mature members of the Society.

I admit, we all admit, that attendance at the meetings is very desirable. These councillors are delegates; they are elected to come here and attend to the business of the Society, and certainly they ought to come; and I am happy to say that out of the fifty-two only six or seven can be found who have not attended somewhere from sixty to seventy per cent. of the meetings. Some of the gentlemen, I think, are kept away from the meetings by their engagements, and occasionally, of course, cases of absence occur from sickness. Still, the percentage of attendance is very fair, and it seemed to the committee, that, inasmuch as they had made some pretty sweeping changes since they have come upon the field, it was best to pause for one year, and make only those changes which circumstances rendered necessary in the council this year, namely, one by resignation and one by death; and I think, perhaps, we were entitled to the additional member by the growth of the Society. This is an explanation, only, of our action, and should the Society, at any future time, order differently, of course the committee who may be appointed then, may feel at liberty to make any change which may be proper.

There is another point which I would like to speak of. There are some three or four gentlemen in the list of councillors, who have given a great part of their lives to the use of the Society. They are growing old and infirm. Unless there are especial reasons to the contrary, it seems rather inappropriate to dis-

² See page 4 of the Journal.

³ See Volume cxviii, page 601 of the Journal.

turb them in their relation, unless they wish to be left off. There were several instances of this kind which were considered in the committee and it was thought best to allow time, which very soon will make changes, to make them itself for the coming twelve months.

For President, John Homans; For Vice-President, George W. Gay; For Secretary, H. F. Vickery; For Treasurer, Edward M. Buckingham.

For Librarian, B. Joy Jeffries; For Commissioner of Trials, Charles W. Swan; For District Nominating Committee, George H. Lyman; For Committee of Supervision, F. Minot, H. M. Hodges; For Committee on Social Meetings, Vincent Y. Bowditch, Frank B. Harrington, Harold Williams, G. A. Leland; For Censors, Elbridge G. Cutler, Charles M. Green, J. H. McCollom, G. M. Garland, H. L. Burrell.

For Councillors, S. L. Abbott, J. Ayer, H. J. Barnes, H. J. Bigelow, C. J. Blake, H. I. Bowditch, E. H. Bradford, F. E. Bundy, J. S. F. Bush, A. T. Cabot, J. R. Chadwick, D. W. Cheever, J. W. Cushing, O. W. Doe, F. W. Draper, S. H. Durgin, T. Dwight, T. W. Fisher, R. H. Fitz, C. F. Folsom, M. F. Gavin, J. O. Green, F. B. Greenough, W. H. H. Hastings, W. C. Holyoke, J. Homans, W. Ingalls, G. F. Jelly, B. J. Jeffries, F. I. Knight, G. H. Lyman, A. E. McDonald, F. Minot, A. Post, C. B. Porter, J. P. Reynolds, W. L. Richardson, T. M. Rotch, G. B. Shattuck, G. C. Shattuck, B. S. Shaw, A. D. Sinclair, A. M. Sumner, C. W. Swan, G. G. Tarbell, O. F. Wadsworth, J. C. Warren, A. P. Weeks, J. C. White, E. N. Whittier, E. Wigglesworth, H. W. Williams.

The Society then proceeded to ballot, and it was announced that the foregoing list of candidates was elected.

MASSACHUSETTS MEDICAL SOCIETY.

COUNCILLORS' MEETING.

The annual meeting of the Council was held at the Medical Library, Boston, on the evening of Tuesday, June 12, 1888. One hundred and nine Councillors were present. The meeting was called to order by PRESIDENT GAGE, at seven o'clock.

The Secretary announced the names of eighty-seven Fellows who had been admitted during the year, and of thirty-three who had died.

FINANCES.

The Treasurer's report showed the year's receipts—including a balance of \$2,315.21 from the previous year's accounts—to be \$11,314.86. The disbursements amounted to \$8,799.15, leaving a balance of \$2,515.71. The invested funds of the Society amount, to \$23,420.17. The Society now bears upon its catalogue the names of 1,690 members.

The report further stated that assessment dues to the amount of \$190.00 have been remitted by vote of the Councillors, upon the recommendation of the Committee on Membership and Finances. Twelve members of the Society have lost their membership by removal from the State, and neglect of their assessment obligations. Since the last annual meeting the names of two Fellows have been dropped from the roll, with the approval of the Council, in accordance with the By-Laws, for five years' delinquency in assessments. Sixteen members have resigned their membership,

and four have been reinstated by vote of the Council.

In accordance with the recommendation of the committees on Membership and Finances, reporting through Dr. Minot, it was voted that one-half of the balance remaining in the treasury, amounting to \$1,257.85, be distributed among the District Societies.

On recommendation of the same Committee, dues were remitted to several Fellows, others were allowed to resign, and still others were permitted to become retired members.

DR. SHATTUCK reported for the Committee on Publications as follows:

The late Dr. George C. Shattuck, by his last will and testament, gave a fund to the Society, directing that the net income of the same shall be applied from time to time, in the discretion of said Society, or of its government, to the collection and publication annually by some suitable person, of historical or other essays on the climate of the Commonwealth, or on the diseases of its inhabitants, and on such other subjects as the said Society or its government may select.

In 1877 the Council directed the committee to offer prizes for essays from this fund; and the first year four essays were landed in, three of them of such merit that it was very difficult to select the one to the writer of which the prize should be assigned. Subsequently no essays worthy of a prize were offered. Three years and a half ago the Council authorized the Committee on Publications to offer a prize of one thousand dollars for an essay worthy of a prize, on the climate and its modifications as influencing health and disease, or on any of the diseases of the inhabitants of New England, or on any kindred subject; all essays to be landed in on or before March 1, 1888. Only three essays were received, and no one of them was deemed worthy of a prize.¹

From this experience, and from the experience of members serving on other committees for awarding prizes, the committee unanimously voted to submit the following resolutions to the Councillors:

Resolved, That the Committee on Publications be instructed to provide for a lecture, to be called the Shattuck Lecture, on some subject in accordance with what is specified in the will of the late Dr. Shattuck, the lecture to be delivered at the annual meeting of the Society, the honorarium for it and the publication of it to be defrayed from the income of the Shattuck fund.

Resolved, That the income of the Shattuck fund not required for the expenses of the lectureship shall be used for the printing of the Medical Communications of the Society.

It was voted that the report of the committee be accepted, and that the appended resolutions be adopted.

It was also voted that the committee be not restricted to members of the Society, but have full powers to select such lecturers as they see fit.

Reports were received from the Committee on By-Laws of the District Societies, and from the librarian, DR. E. H. BRIGHAM.

The following communication in behalf of the Committee of Arrangements was received from DR. J. B. SWIFT:

¹ The writer of either of these essays can have his paper returned to him by applying to Dr. G. C. Shattuck, 6 Newbury St., Boston, and giving the motto attached thereto.

"Your Committee of Arrangements has met with considerable difficulty in providing for the social entertainment of the Fellows of the Society at the annual meeting this year, and have been compelled to dispense with the annual dinner.

"The reason for this action was caused by their inability to procure a hall large enough to accommodate the Society; Winslow's Skating Rink, in which the annual dinner has been served for several years, having been taken by the City of Boston for an armory, could not be obtained, and the only remaining hall where a caterer would consent to serve dinner to so large a number is in the Mechanics' Building on Huntington Avenue. The committee, however, did not feel warranted in assuming the expense which would be necessary for this.

"After considerable discussion it was decided to hold a reception at the Hotel Vendome, hoping that by this means a suitable substitute would be provided for the dinner, and that the social element of the meeting would be given more prominence than has been possible in former years where so large a number sat down at the tables.

"Should the Society continue to grow, and the number of members attending the annual meeting increase at the present rate, some other arrangement will soon be necessary in order to accommodate the increased number.

"A proposition came before the committee this year which, should you decide to have the annual meeting hereafter devoted to sectional work, might well be carried out, to wit: Have the meeting held in the Mechanics' Building, using the smaller rooms there for the meetings of the Sections, and have the exhibit take the form of a health or sanitary exhibition, which would be open to the general public on the payment of an admission fee. In this way an immense amount of useful information might be disseminated, and a very interesting exhibition be made.

"The social feature of the meeting would in nowise be interfered with, for there would still remain the large hall for a dinner or reception as might seem best.

"Owing to the large number of Fellows who attend the annual meetings, and the difficulties which the committee encounter in arranging for the meeting, it was deemed advisable to bring the subject to your attention."

It was voted to refer the subject to the Committee of Arrangements for next year, with full powers.

THE NEXT ANNUAL MEETING.

It was voted that the next annual meeting of the Society be held in Boston, on the second Wednesday of June, 1889.

ELECTION OF OFFICERS.

The Committee on Nominations reported the following list of candidates for the offices of the Society for the ensuing year, and the same were elected by ballot: Dr. David W. Cheever, of Boston, President; Dr. George Jewett, of Fitchburg, Vice-President; Dr. Frank W. Draper, of Boston, Treasurer; Dr. Charles W. Swan, of Boston, Corresponding Secretary; Dr. Francis W. Goss, of Roxbury, Recording Secretary; Dr. Edwin H. Brigham, of Boston, Librarian.

Dr. Henry P. Walcott, of Cambridge, was chosen Orator, and Dr. James R. Chadwick, of Boston, Anniversary Chairman, for the next annual meeting of the Society.

APPOINTMENT OF COMMITTEES.

The President nominated and the following were appointed to constitute the Standing Committees:

Of Arrangements. — H. C. Ernst, O. K. Newell, V. Y. Bowditch, F. B. Harrington, H. L. Burrell, R. W. Lovett.

On Publications. — G. C. Shattuck, R. M. Hodges, B. E. Coting.

On Membership and Finances. — F. Minot, B. S. Shaw, J. Steedman, E. G. Cutler, L. R. Stone.

To Procure Scientific Papers. — H. P. Walcott, C. W. Cooper, E. H. Bradford, S. B. Woodward, C. M. Green, L. Wheeler.

On Ethics and Discipline. — G. J. Townsend, G. E. Francis, A. H. Johnson, C. Howe, F. C. Shattuck.

On Medical Diplomas. — W. L. Richardson, A. H. Cowdrey, E. J. Forster.

The President introduced the President-elect, Dr. D. W. Cheever, who made a fitting response.

At 8.30 p.m. the Council adjourned.

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON PEDIATRICS.

STATED MEETING, May 23, 1888.

PROF. V. C. VAGHAX, of the University of Michigan, Ann Arbor, read a paper on

EXPERIMENTAL STUDIES ON SOME POINTS CONCERNING THE CAUSATION AND TREATMENT OF THE SUMMER DIARRHŒA OF INFANTS.

The subject of summer diarrhœa, he said, he had studied rather from the standpoint of the chemist and physiologist, than from that of the practitioner, and without attempting any exhaustive consideration of it, he would express the views which his investigations had led him to adopt in a series of propositions.

The first proposition was, that the factor most frequently operative in summer diarrhœa is found in the food of the infant. Heat operated in two ways: In the first place, a certain degree of heat was required for the preparation of food before it is taken into the body; this facilitating marked and rapid changes subsequently. In the second place it depressed the nerve-centres, so that the tissues lost their tone, and the normal power of resistance to toxic influences was impaired.

The second proposition was, that the changes in the food which prove harmful are fermentative in character, or, in other words, due to the presence of micro-organisms. It was a universally accepted fact that infants nursed at the breast were very much less liable to summer diarrhœa than those fed upon the bottle. In examining the reasons for this, it was found that there were certain differences in the chemical composition of mother's and cow's milk; but this was not the most potent cause. It had been ascertained that milk taken directly from the healthy animal, whether the human being or the cow, contained no germs whatever, while after it had been allowed to stand for any length of time it invariably contained germs. Thus, he had found that milk taken fresh from the cow could be preserved indefinitely in a sterilized tube, while good market milk, purchased from a reliable dairyman, soon underwent coagulation when kept in the same way.

But if this was the case, why was it that infants nursed at the breast ever had cholera infantum or other diarrhœal disease at all? This might be explained in several ways. In the first place, while a healthy woman's milk contains no germs, an unhealthy one's does; so that if the mother was not in a sound condition, her milk might be affected in the same way.

as cow's milk after standing for a greater or less period of time. There were, in addition, many other ways in which germs might find their way into the infant's system; as, for instance, from the breast of a woman who was not cleanly in her habits or who was suffering from sore nipples or diseased breast. Again, few of the articles which infants in tenement houses were liable to come in contact with, were free from germs, and dirty floors were a common source of infection. Lastly, there was always the possibility that harmful germs might be inhaled from the air.

It was true, however, that when germs were contained in the food they were taken into the system in greater quantities than in any other way, and it was remarkable how quickly a few germs would render a large quantity of milk unfit for use. Thus, if half an ounce of contaminated milk were introduced into a gallon of pure milk, and the whole kept in sterilized vessels at the temperature of the body, in a short time the entire quantity of milk would be contaminated and filled with germs. Dr. Vaughan said that he had never seen anything to lead him to suppose that the germs of summer diarrhoea of infants were given off by the lungs and skin. There was abundant evidence, however, that they were excreted from the intestines and kidneys; the frequency of albuminuria offering confirmatory proof of their renal excretion. It was, therefore, highly important that the discharges of such infants suffering from diarrhoea, should always be promptly disinfected. Physiological investigations, he went on to say, showed that the digestion of milk was almost entirely carried on in the small intestines, the stomach having little to do with the process; and clinical observations confirmed the truth of this.

The third proposition was that the micro-organisms which produce simple catarrhal or mucus diarrhoea, are only putrefactive in character; but those which give rise to choleraform or serous diarrhoea are more than putrefactive, being essentially pathogenic. He did not believe in the unity of the microbic agents met with in all the forms of summer diarrhoea. The choleraform disease differed from the catarrhal in its symptoms and its pathology, and there was also good ground for regarding it as differing in its etiology. The poison of choleraform diarrhoea acted directly on the nervous system, probably more particularly on the sympathetic centres; while in catarrhal diarrhoea there was merely a local irritation. A study of the bacteria met with went to show, therefore, that there was more than one affection comprehended in the general designation, summer diarrhoea of infants.

The fourth proposition was that the bacteria prove harmful by splitting up complex compounds and elaborating chemical poisons. With our present knowledge of bacteriology we expected to find the germ of each infectious disease capable of producing its characteristic ptomaines; and he was convinced that the ptomaine of cholera infantum is tyrotoxin. While the germ producing this ptomaine had not as yet been identified, however, we know something of its characteristics. Thus, it did not act below a temperature of 60° Fahrenheit, and it was anaerobic. That the tyrotoxin was the ptomaine of cholera infantum was rendered highly probable by the symptoms and anatomical lesions produced on animal, by this agent. The following were among the reasons, then, for regarding it as the ptomaine of this disease:

(1) Tyrotoxin results from the putrefaction of

milk, and cholera infantum is almost entirely confined to milk-fed children and those subject to conditions favorable to the development of this ptomaine.

(2) Tyrotoxin has been found in milk taken by children just before an attack of cholera infantum.

(3) The symptoms of the disease continue to increase as long as the administration of milk is kept up.

(4) The symptoms of the disease are identical with those produced in animals by tyrotoxin.

(5) The post-mortem results are also identical.

The fifth proposition was that the most efficient preventive treatment will consist in giving attention to the preparation of food, the methods of feeding, and the sanitary surroundings of children under the age of two years. There could be no doubt of the fact that the infant digests the milk of the mother or wet-nurse better than cow's milk. It was also a fact that mother's milk contains more fat than the child can utilize. Artificially-fed infants were more likely to be overfed than those which were nursed, because in the case of the latter the supply of nourishment was limited and not so easily obtained. This overfeeding rendered the child more subject to harmful influences, and the proteids taken into the system which could not be assimilated were constantly liable to contamination by bacteria. Dr. Vaughan then went on to say that he objected to complete artificial digestion of food (1), because, if this were continued for any length of time, the digestive organs would become permanently enfeebled; and (2) because the too rapid absorption of peptones was harmful. The long-continued use of artificially-digested food was, therefore, irrational and unscientific. In order to protect children as far as possible from the danger of cholera infantum, great care was necessary in the preparation of their food, and he had elsewhere laid down certain rules for the preservation of milk which seemed to him of service towards this end. As to the need of attention to the sanitary surroundings of such subjects, it was scarcely requisite to say anything on this occasion, as all were so fully alive to its importance. The sixth proposition was that, in the curative treatment, the destruction of the bacteria which are causing the abnormal fermentation is essential. How, then, could this destruction be accomplished? One of the surest methods of destroying the life of any plant or animal was to completely withhold its food-supply. A radical change of diet, consisting of the entire withdrawal of milk, and the substitution for it of a meat diet, was, therefore, one of the most certain methods of relieving the system of these deleterious bacteria and curing the disease due to their presence. The struggle for existence was probably not without its effect even on micro-organisms. He had found that if contaminated milk was added to beef tea or to egg-albumen, and the liquid then kept in sterilized vessels at the temperature of the body, the number of bacteria was not increased, thus showing that they could no longer produce their chemical poison, tyrotoxin. In milk, however, these bacteria found the most favorable conditions for their development and the production of their ptomaine. In summer diarrhoea, and especially cholera infantum, the withdrawal of all milk from the child was, therefore, of the greatest importance.

In addition to this change of diet, various antiseptic agents might be employed in the treatment, and, in order to discover which were the most efficient, Dr. Vaughan had made a series of experiments for the

purpose of testing the action of different germicides or supposed germicides on tyrotoxicum; the drug under experiment being introduced into a bottle containing milk and the poisonous ferment. In this way he ascertained that one part of bichloride of mercury to 2,400 parts of water was efficient in neutralizing the poison. One part of naphthaline to 200 of water was wholly without effect, while one part of sodium salicylate to 200 of water was efficient. It seemed probable in the latter case that the constituents of the salt became separated, and that salicylic acid was, in reality, the active agent. Resorcin in the proportion of one part to 200 of water was, likewise, efficient, but it was inefficient when used in a weaker solution than this.

Dr. W. D. BOOKER, of the Johns Hopkins University, Baltimore, read a paper on

A STUDY OF THE MICRO-ORGANISMS IN THE STOMACH AND INTESTINES IN THE SUMMER DIARRHŒA OF INFANTS.

He said that it had been found that in the feces of all milk-fed infants in health there were constantly present, and in large numbers, two species of bacteria; namely, the *bacterium lactis arogenes* and the *bacterium coli commune*. They were designated as the obligatory milk feces bacteria, as distinguished from the inconstant bacteria which were found under various circumstances. These were aerobic for the most part, and, as a rule, were somewhat more numerous in the feces of infants fed on cow's milk than in the feces of sucklings.

When diarrhœal disease was present, a number of new species of bacteria appeared in the stools, and in a paper which he had read before the Section of Diseases of Children of the Ninth International Medical Congress, Dr. Booker said he had described eighteen varieties which he had observed in the feces of seventeen children, some of whom were suffering from cholera infantum, some from dysentery, and some from catarrhal diarrhœa, while one was in good health. During the past winter he had investigated the feces of two additional cases of catarrhal diarrhœa, and he had now to state that he had separated no less than twenty-three varieties of bacteria from the dejecta of nineteen children suffering, with one exception, from diarrhœal disease. Many of the varieties, however, bore a close resemblance to each other, both morphologically and biologically. The feces of two of the children who had cholera infantum each contained eight varieties.

Having described the microscopical changes and the changes in color produced by the introduction of the various bacteria into pure milk and milk mixed with small and large quantities of bile, Dr. Booker stated that none of the varieties produced diarrhœa in animals, whether introduced into the system by the mouth or rectum, or by intra-venous injection.

Dr. L. EMMETT HOLT read a paper on

MICROSCOPIC EXAMINATION OF THE STOMACH AND INTESTINES IN THE SUMMER DIARRHŒA OF INFANTS.

His observations, he said, included eighty-two cases, which he divided into three classes; namely, those in which the disease lasted four days or less; those in which it lasted from four to ten days; and those in which it lasted over ten days. The last class com-

prised fully one-half of the cases, and the average duration was about three weeks. He then went on to describe in detail the microscopical appearances in the three classes of cases, which were illustrated by a number of carefully prepared plates, and which went to show that the longer the disease lasted, the more profound were the pathological changes in the tissues.

In summing up the results of his researches, he said that in the first class of cases the microscopical examination was very unsatisfactory, and threw no light on the pathological nature of the disease, the appearances differing but little from the *post-mortem* changes often observed, especially in warm weather. In the second class of cases there were extensive enlargement and infiltration of the solitary follicles and sometimes of Peyer's patches, with marked degenerative changes. In the third class the lesions were still more marked, there often being deep ulcerations, and the character of the pathological changes clearly showed why it was that in protracted cases relapses were so apt to occur, and how necessary local treatment was for the cure of the intestinal ulcerations. He had not as yet made a careful study of the micro-organisms found in the inflamed intestines.

The Chairman of the Section, Dr. J. LEWIS SMITH, read the report of the microscopical appearances noted by Dr. Wm. H. Welch, now of the Johns Hopkins University, Baltimore, in a case of brief duration which had occurred in his service at the New York Infant Asylum. He then gave the results of an investigation, made at his request by a well-known chemist, of the relative digestive power of the various brands of pepsin now in the market. The same chemist had also made a series of experiments, he said, for the purpose of ascertaining what effect, if any, the different germicidal agents now coming into vogue in the treatment of summer diarrhœa had on the process of digestion, and it was a point of some practical importance to know that these agents do not appear to retard digestion to any extent that would lead us to hesitate on this account to employ them.

Dr. GEORGE B. FOWLER referred to the myriads of bacteria found in the intestines, and said that the pathological ferments were all organized, while the physiological ferments were all unorganized. Still, the latter were fully capable of developing active poisons as shown in the cases of xanthin, etc. He had always regarded the gastric juice as possessed of valuable antiseptic properties, so that it stood on guard, as it were, to render more or less inert such poisonous organisms as entered the system by the mouth. Many authorities also taught that the bile had an antiseptic value.

Dr. A. CAILLE said that the practical outcome of the evening's discussion was about as follows: If we admit the bacterial origin of the summer diarrhœa of infants, we must admit that its principal cause is to be found in milk; and if this is acknowledged, we are forced to the conclusion that the ordinary methods of preparing and preserving milk are altogether faulty. At the February meeting of the Section on Pediatrics he had called attention to the apparatus devised by Dr. Soxhlet, of Munich, by means of which the preparing and feeding of sterilized milk can be readily carried out in every family.

Since the February meeting a New York firm, at his suggestion, had prepared an apparatus (which they were now ready to supply in any desired quantity) similar to that of Soxhlet, consisting of a tray

holding ten feeding bottles with combination stoppers, and a pot to boil them in. These, together with extra bottles, rubber nipples, a cleaning brush, and a tin dipper for warming the milk immediately before feeding, were all packed in a box handy for transportation. In using the apparatus each bottle is filled to one-half inch of its neck with the food, properly prepared in accordance with the age and condition of the infant, and a perforated rubber stopper pressed well into the neck of the bottle. The bottles are then set in the tray, and the tray in the pot containing water up to the neck of the bottles, and the water is brought to the boiling point. After the water has boiled for ten minutes each bottle is hermetically closed by pressing a glass stopper down through the perforated rubber stopper. After the boiling has continued for ten minutes longer the tray is lifted out and set aside to cool, after which it should be kept on ice or in a cool place until all the milk has been used. Milk prepared in this way can be kept sweet and pure for any length of time required.

The apparatus, Dr. Caille went on to say, could be purchased for four dollars, but as this was probably too expensive for the poor, he would recommend that a mother who was unable to buy one should get six or eight bottles provided with the combination stopper, and boil the milk for her infant (as prepared for use) in them.

Dr. A. SEIBERT said that he had no doubt that the proceedings of this evening would constitute a stepping-stone towards the attainment of a really scientific knowledge of the origin of summer diarrhoea. He was gratified to find that Professor Vaughan had arrived at the same conclusion as himself, that 60° Fahrenheit was the boundary-line beyond which the fermentation of milk commenced.

Dr. J. E. WEEKS said that a year ago he had made a series of experiments in regard to the action of different autogens on the pus germ. He found that salicylate of sodium was inert, while salicylic acid was actively germicidal; and he believed, therefore, that Professor Vaughan was right in concluding that in his own experiments the salts became changed, and that its germicidal value was really due to the salicylic acid that was liberated. Naphthalin he found germicidal in rather strong solutions, while bichloride of mercury stood very high. Nitrate of silver also stood high.

Dr. VAUGHAN, in bringing the discussion to a close, said that in his own experiments it was probable that the lactic acid present set some of the salicylic acid free from the sodium salicylate. In Dr. Weeks's experiments, there being no such agent present, the salt would naturally remain unchanged. As to the practical use of germicides in the treatment of summer diarrhoea, the dose of the bichloride of mercury required would be about one twenty-fifth of a grain, and as this seemed rather large for young infants, it would, no doubt, be safer to give five grains of salicylate of sodium, which, according to his tests, was the dose of this agent required for the purpose desired.

Dr. SMITH having inquired whether it was a fact, as supposed by some, that calomel was changed into the bichloride of mercury after being taken into the system, Dr. Vaughan replied that this was undoubtedly the case with a certain proportion of the amount taken, and it seemed probable to him that the change was especially likely to take place when the calomel was given in small doses.

Recent Literature.

Atlas of Venereal and Skin Diseases. Edited by PRINCE A. MORROW, A.M., M.D. Fasciculi I, II and III. New York: William Wood & Co., 1888.

The scheme of this work, which is to be published in fifteen parts, each part containing five plates, with accompanying text, is an excellent one; namely, the selection of plates from different atlases, their reproduction and collection in an American edition. The principal sources of supply will be the well-known and standard atlas of Kaposi and Neumann. Additional specimens are to be contributed from their collection of original drawings by other distinguished dermatologists in this country as well as abroad. The conception of the work is good, since it means selection and combination of the best, and its execution, as represented by the first three numbers, is deserving of high praise. In these numbers are shown varieties of the local venereal ulcer, and of the initial lesion of syphilis, together with some of the earlier cutaneous manifestations of the disease. The plates are taken, for the most part, from Kaposi, a few figures being supplied by Hutchinson's collection. A careful comparison of the originals, so far as Kaposi's plates are concerned, with their reproductions, shows the latter to be faithful copies, and, if anything, better lithographs. The lithographic work also in the copies of Hutchinson's figures is particularly fine. The difficulty of doing this sort of work well is great, demanding time and attention to detail, and if the standard set by the first three numbers is maintained, an excellent atlas of cutaneous and venereal disease will be the result.

G. H. T.

Diseases of the Heart and Circulation in Infancy and Adolescence. By JOHN M. KEATING, M.D., etc., and WILLIAM A. EDWARDS, M.D., etc. pp. 211. Philadelphia: P. Blakiston, Son & Co.

This book is made up of a series of articles which appeared in recent numbers of the *Archives of Pediatrics*, and are now collected. The first question which naturally presents itself to the mind of the reader is: what special peculiarities, physiological and pathological, of the circulatory apparatus do infancy and adolescence present? The answer to this question is obvious. The chief and only important difference between children and adults in this respect lies in malformation of the heart and great vessels, and the consequences which this entails. Endocarditis and pericarditis are much the same clinically and pathologically at all ages, while primary degenerative changes of the heart walls are extremely, secondary comparatively, rare in the young subject.

Of the 211 pages in the book, twenty-seven, including three of a valuable bibliography, are devoted to the fetal circulation, congenital disease, and malformation; while thirty-two pages are given to diseases of the blood, comparatively rare in early life, and during that period in no wise peculiar. Haemophilia is an exception. The authors lay stress on the frequency with which this remarkable proneness to hemorrhage, with regard to the intimate nature of which we are so ignorant, is hereditary, and also on its rarity in females, but have forgotten to mention the very interesting peculiarity of hereditary transmission shared by haemophilia with color-blindness and pseudo-hypertrophic paralysis, that while the fe-

male members of a family escape in their own persons, they transmit the constitutional vice.

As far as the chapter on congenital disease goes, it is in the main clear and accurate enough. The authorities are not unanimous as to the relative value of the two factors — inflammation and malformation — in the production of congenital cardiac disease, but there certainly seems good reason to think that fetal endocarditis is especially apt to attack a valve which is malformed; that is, is often secondary.

The situation of the apex-beat higher and farther to the left in children than in adults, the heart being placed more transversely on account of the high stand of the diaphragm, is well brought out, and should be known by all.

The chapter on treatment strikes us as vague and unsatisfactory. The paper and print are good, but the printer has been allowed to take liberties with the names of continental writers. The photographs bound into the book do not seem to us to enhance its value. They are in marked contrast with the simple colored cut of the fetal circulation borrowed from Cazeau's and Tarnier's obstetrics.

A Manual of Medical Jurisprudence, with special reference to Diseases and Injuries of the Nervous System. By ALLAN McLANE HAMILTON, M.D. New York: E. B. Treat. pp. 390.

This book is the work of an author of wide experience as an alienist. He sets before his readers his views upon a series of subjects having most important medico-legal relations. Insanity, hysteria and "hysteroid" conditions, epilepsy, alcoholism, cranial and spinal injuries are discussed in a way to serve fairly the purpose announced in the preface — that the volume is "an elementary treatise and book of reference for lawyers and doctors." But the work, though interesting, seems to us to be lacking in those qualities which, if present, would give it permanent value. It is crude and unfinished. The effect of the various chapters and sections is that of patchwork. There is a want of symmetry and deliberation in the workmanship. The volume is a scrap-book rather than a treatise; its parts lack cohesion. The subjects pertinent to the scope of the author's design, as set forth in the preface and title, are not elaborated in such a way as to satisfy the discriminating reader, and matters not germane are interpolated without good reason. Many pages are devoted to malingering and feigned diseases, and a chapter is given to a discussion of the methods and post-mortem diagnosis of suicide; it is difficult to see the relation of these topics to diseases and injuries of the nervous system, or to comprehend the kinship of these latter matters to the question (page 194), "can persons be robbed while under the influence of chloroform?"

The work, too, shows considerable evidence of hasty and careless preparation. Besides the absence of proper method and arrangement in rhetorical construction, the pages are marred by numerous grammatical errors and heedless omissions, which are a serious and inexcusable blemish in a composition of this kind. The volume shows a stamp upon its cover to indicate that it is one of a series of "medical classics." The critical reader, however, will hardly fail to observe that much painstaking revision and reconstruction are required to bring the text up to a level that truly deserves the descriptive title "classical."

THE BOSTON Medical and Surgical Journal.

THURSDAY, JULY 5, 1888.

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94 BOYLSTON STREET, BOSTON, MASS.

ANNUAL REPORT OF THE BOSTON CITY HOSPITAL FOR 1887.

THE annual report of this Hospital shows a continued increase in the number of patients treated. The whole number under treatment in the Hospital during the year was 5,937, being 569 more than were treated during the preceding year. The largest number in the Hospital on any one day was 392, the daily average being 354. The average cost to the city for the board of each patient was \$7.41 per week.

Of these patients, 790 were accidentally injured, and the severity of the accident cases is shown by the fact that 185 patients died within forty-eight hours after admission. The growth of the Hospital work is illustrated by a comparison with the accidents of the first full year of the Hospital's existence — 1865 — when the admissions for accidents were 242. In addition, 14,318 were treated in the out-patient department. The statistics show a high death-rate, 10 $\frac{1}{2}$ per cent. If from the total number of deaths we deduct those brought to the Hospital in a dying condition, the annual mortality is reduced to 7 $\frac{3}{4}$ per cent., which is still high enough to provoke inquiry. The greatest mortality was due to diphtheria. According to the tables, there were on the medical side of the Hospital 105 cases of diphtheria, with 31 deaths; and on the surgical side 77 cases, with 57 deaths, a grand total of 81 deaths from that dread disease. The ratio of deaths to cases admitted is probably greater even than these figures show, as cases are occasionally admitted to the medical side and afterwards transferred to the surgical department for tracheotomy, and in such cases would be likely to figure twice among admissions and but once among deaths. These cases of diphtheria are undoubtedly the worst that the city affords, many of them being admitted simply because the hospital gives them a "last chance," and occasionally we believe a case is very properly forced into the hospital by the Board of Health, for the safety of its neighbors.

Where active interference has been necessary, tracheotomy and intubation have been the resort about an equal number of times. Intubation was done 30 times, with 22 deaths; tracheotomy was done for diphtheria 37 times, with 30 deaths, showing a little more favorably for intubation, but the figures are too small to give any reliable comparisons.

Phthisis pulmonum is credited with 55 deaths. These were probably hopeless, or nearly so on admission, many of them being admitted with a view simply to soothing their last days.

There were 256 cases of typhoid fever, and 43 deaths. During the last season the summer tent service was enlarged by additional tents, and medical cases, especially typhoid fever, were treated in them, but no exact data exist to show whether such cases did better than in the wards.

The tables of surgical operations have recorded against many of the deaths a word of explanation giving some facts as to the cause, and the absence of septicæmia and pyæmia is quite striking. The table of surgical diseases shows that a few such cases were admitted but as a sequence of operations the disease was practically unknown during the year.

The Hospital has added to its capacity by two new buildings for contagious diseases, which were not opened at the time the report was written. The two buildings are practically alike, differing only in a few details. They occupy space formerly vacant, on the medical side. Each building is 138 feet long by 42 feet wide, is one-storied in centre for 75 feet; the end portions (31 feet each) having two stories. In planning these buildings for the special use of contagious cases, it was intended to so arrange the wards that in each building there might be accommodations for each sex in open wards, and also in isolating or private rooms. Any satisfactory plan to meet this requirement involved a radical change in arrangement from any in the buildings now erected.

The buildings are entered on the main floor by three doors upon the side, instead of by one end door, as in the other one-story buildings. Each building may be said to be divided into five sections: the centre section contains the service or duty rooms; on either side is an open ward, 25 feet by 35 feet, intended one for either sex, and accommodating eight adult patients or ten children. At each end is a group of three isolating rooms on the ground floor.

At either end of each building in the second story is a small group of rooms, 42 feet by 31 feet, accessible by stairway, and so arranged as to be used as an annex to the ward, or they may be shut off from the ward, and be entered by an outer door leading to the lateral corridor. The arrangement is such that it may be used for private patients, to give increased accommodations in time of epidemics for convalescent patients from the main ward, or for cases of mixed contagious diseases. This group consists of three rooms, capable of accommodating six patients, having serving, toilet, and bath rooms, and the com-

plete outfit of a small isolating ward. These contagious wards were greatly needed.

The Trustees express the hope that the Hospital may be at some time in the near future endowed by the city with a much needed convalescent home.

The list of bequests to the Hospital shows that the last bequest was dated 1875.

HISTORY OF A MEDICAMENT.

UNDER this title, Jules Cyr, in a recent spirited and humorous publication (*"Scènes de la Vie Médicale"*) takes off one of the medical fashions of the times. Many old medicines have gone out of use and the confidence in others is shaken, but while in some quarters the materia medica is undergoing (as it deserves) a careful weeding, in others there is a rage for therapeutic novelties which often redounds more to the profit of the pharmacist (who knows how to turn to the best account the fleeting reputation of a new drug), than to that of the physician or his clientèle.

Ganivet and Lapozème had been fellow-students at the Ecole de Médecine. Both were located in the metropolis; the one was hospital externe, the other, interne in pharmacy; both were ambitious and impetuous. Ganivet had no notion of seeking for fortune and influence by patient waiting, or by the ordinary routine of dull toil; he aimed to find a "specialty" that would at once bring him fame and fortune. A happy inspiration seized him; he would discover a new medicament, have it duly tested physiologically and clinically, get the medical journals to trumpet it and thereby create a demand, patent it and thereby enjoy the monopoly of a lucrative and useful product, and the consciousness of having done something to lessen the sum of human ills. Where was he to look for the new pharmaceutical agent that was to so interest and arouse the medical profession in the old world and the new? Naturally in the "aromatic series" that "mine of specialties" from which so many new antiseptics and antipyretics had been derived, and which was doubtless yet far from being exhausted. His friend Lapozème, the chemist, could here render him valuable service. To him he communicated his plan. By a subtle combination of analytical and synthetical processes, all belonging to the domain of the laboratory, the new pharmaceutical wonder was to be teased out of the arcana of nature. There must be some physiological experiments by gentlemen holding an official position, to test its properties. Then would come the usual "notes" to the Society of Biology, "notes" to the Institute, experiments on hospital patients, experiments in private practice. Liberal trial samples would be sent to medical celebrities in different parts of the country, with printed circulars, containing the endorsement of the renowned clinical chief of the great Hôpital des Malades, etc.

To shorten the story, the "mine" of the aromatic series was "explored" with diligence, and by the skill-

ful combination of several rather complex organic radicals, the sought-for product was obtained. Gani-vet, by a little clever wire pulling, got the appointment of deputy preparator to the Laboratory of New Medicaments, where he had at his disposal a sufficient number of dogs, hares, guinea-pigs, and frogs for experimentation. The new drug was duly tested and found to have a marked action on the heart, in small doses increasing the vital properties of that organ; in large doses tetanizing it. It therefore received the appropriate name *Cardiosthenine*. "Notes" and "Communications" were at once sent to the learned societies. In the opinion of those who had experimented with the new chemical agent, it was far superior to digitalis, which it must eventually replace in the practice of progressive physicians.

Cardiosthenine was received with favor, and even with enthusiasm and furor, by the medical profession. The wary proprietors, who were careful to protect their own interests by patenting the name, were able without much difficulty to obtain the requisite clinical experimentation and a goodly number of emphatic testimonials. The celebrated Dr. Simon Levi, clinical chief of the Hôpital des Malades, who had had the honor of attending the late General B—— in his last illness, gave the weight of his influence in favor of the new medicament. He caused it to be thoroughly tested in five thousand cases, and with uniformly favorable results: elaborate reports of these trials were published under his own name, or embodied in theses by his pupils. Communications by other authorities were presented to the "Institute" and "Academy," and these were reproduced by all great medical journals, at home and abroad. In short, as has been the case with many other new medicaments whose *début* has been suitably trumpeted, *the results noted were always favorable at first*. It is needless to say that the demand for their product more than satisfied the most sanguine expectations of the proprietors, the sales being for some time unprecedented, and the profits accruing therefrom (all competition being rigidly excluded) being necessarily liberal.

To be sure, the ultimate results, it must be confessed, were somewhat disappointing, as the proprietors found after they had exploited their "*cardiosthenine*" for all that it was worth; and another melancholy fact was added to that long chapter of human history which tells how easily the best of men are sometimes imposed upon.

EXPERIMENTAL RESEARCHES RELATIVE TO THE ACTION OF MEDICAMENTS ON THE BILIARY SECRETION, AND THE ELIMINATION BY THIS SECRETION.

DRS. PREVOST and Binet have communicated a note to the Academy of Sciences relative to the cholagogue action of medicaments, and their elimination by the bile. These experiments were made on two dogs on which they had produced a biliary fistula, and which

were kept several months under observation. The following is a resumé of their studies:

(1) "In confirmation of the experiments of Rohmann, our animals with the biliary fistula have been kept in good health by excluding from their food fats which pass out almost in their entirety in the stools, where their presence is easily detected.

(2) "The quantity of bile augments somewhat with food, especially after the ingestion of peptones. Fats, on the other hand, do not produce any augmentation in the flow of bile. Cold or warm water only produce slight increase in quantities of 150 cc. to 200 cc. Copious lavements of cold water, recently recommended in jaundice, do not modify the biliary secretion.

(3) "As for the elimination by the bile of medicaments introduced into the organism; this is always inconsiderable.

(4) "There is no constant relation between the elimination of a substance by the bile and the effect which it may have in increasing the biliary secretion."

MEDICAL NOTES.

—The thirty-seventh meeting of the American Association for the Advancement of Science will be held at Cleveland, Ohio, from Wednesday morning, August 15, until Tuesday evening, August 21, 1888.

—Dr. Squibb gives the following list of the antipyretic drugs in common use, with the price per ounce, and the statement as to whether or not it is patented

Sulphate of quinine (best makers) about	\$0 40
Tartrate of chinoline	70
Resorelin	30
Salicylic acid, patented	20
Kairin, patented	2 00
Antipyrene, patented	1 25
Sulphate of thallin, patented	1 75
Antifebrin, 30c. per oz., or as acetanilide	15
Salol, patented	40

—A writer in the *Indian Medical Gazette*, of Calcutta, is publishing a medical history of our War of the Rebellion, in which occurs the following: "With reference to the disease called 'cholera morbus,' of which 26,347 cases, with only 305 deaths, are said to have occurred, it is doubtful whether they would not have been more appropriately placed under some other head of disease. I find numerous non-fatal cases of 'cholera morbus' recorded in the returns from the commencement of the war some years before the fourth 'invasion' of the disease occurred in America. It is hardly credible that the disease known to us as cholera would have occasioned so few deaths in so many cases."

—The son of a prominent citizen of Dublin consulted an eminent throat specialist for an affection of the larynx. A tumor was discovered, and portions excised for microscopic examination, the physician meantime assuring the patient that appearances pointed to the growth being entirely benign. But the patient had become so thoroughly demoralized by reading the newspaper literature of the late German Emperor's

case and by other quasi-medical reading, that he committed suicide in a fit of depression. Another instance of the possible ill effects of scattering detailed bulletins of the illness of the great, where ill-balanced minds cannot avoid seeing them.

—Recent explorations at the Island, of Cos have as we learn from the *Medical News*, unearthed the site of the renowned temple of Esculapins, the third in prominence in the mind of the Greek world. The only ones that were held in higher esteem were the temples at Epidauros and Athens. An altar has been found, and a marble serpent, the well-known attribute of the god of medicine. The description that Strabo gives of the temple at Cos would indicate the possibility of a rich harvest if systematic excavations are carried on at this site. He says that its shrines were full of votive offerings, including priceless works of art, and its walls abounded in inscriptions recording the cures wrought there, which Hippocrates is said to have studied, and from which he learned much of his medical lore. The excavations at the Asclepeion of Athens have yielded valuable results, but much remains to be learned concerning the cult and ritual of Greek medicine, which can be discovered only by the bright spade of the scholarly explorer.

—The *Medical News* chronicles the intended erection by the Jefferson County (N. Y.) Historical Society of a monument to the discoverer of chloroform, Dr. Samuel Guthrie. Dr. Guthrie was born in 1782, his father having been a physician of Brimfield, Mass.; he died in 1848. During the War of 1812 he was examining surgeon, and did chemical work for the military posts in northern New York. In 1817 he took up his residence at Sackett's Harbor. He published in *Silliman's Journal* for October, 1831, an article describing the preparation and properties of a "Spirituus Solution of Chloric Ether." The ether was made by distilling chloride of lime with alcohol. His paper was in the hands of the publisher as early as May 8, 1831, and was completed some months before that date. These data conclusively establish the priority of the American discovery of the world's great anæsthetic, since Liebig had not published his account until November, 1831, and Soubeiran's did not appear until January, 1832. The race between these three independent discoverers is a close one, but to Guthrie our contemporary awards the honor of first making and describing the substance which we now know as chloroform—a name originated by Dumas in 1835. It is a curious fact that Guthrie, during forty years of his life, devoted much time and thought to the improvement of gunpowder, and it is quite possible that both that destructive compound and the anæsthetic that was to be, were in hand at one and the same time.

BOSTON AND VICINITY.

—By a will lately made the Boston Medical Library Association will receive a bequest of \$10,000 at some future time.

—Mrs. Sarah Jane Robinson, the Somerville, Mass. poisoner, has, after the rejection of her motion for a new trial, been sentenced to be hanged in November next.

NEW YORK.

—On the 28th of June, Mr. D. O. Mills formally transferred to the city the new training school for male nurses which he has erected at his own expense in the grounds of Bellevue Hospital. The building, which is of Carlisle stone and red brick, with terra cotta trimmings, is in the form of an L, five stories and a basement in height, and has a frontage of 75 feet on Twenty-sixth Street, and 80 feet on the East River. The two upper floors are to be devoted to the hospital museum. On the occasion referred to the principal address was delivered by the Hon. Chauncy M. Depew, and at its conclusion he read a letter from Mr. Mills to Mayor Hewitt, making over the building and its appliances to the ownership of the city, in which the donor said: "In the great development of means for caring for the helpless sick which marks the present century no want has been more felt than that for trained nurses. . . . The Training School for Female Nurses was a great gain. Personal observation of the good it had done led me to think that an equal service might be rendered by an institution for the training of male nurses. The humane work of the physicians in charge of Bellevue and other city hospitals could thus be efficiently supplemented, and the sufferings of the poor under their care alleviated, while the community would gladly employ all the male nurses the hospitals can spare, and so enable the students thus trained to make the vocation of nursing their life-work." The total cost of the building as completely equipped and furnished by Mr. Mills was about \$100,000.

Miscellany.

CONTINUED AND REMITTENT FEVERS.

THE following circular has been issued from the office of Supervising Surgeon-General, Marine Hospital Service:

To Medical Officers and Acting Assistant Surgeons: With a view of formulating a more precise symptomatology of the "continued" and "remittent" fevers; from and after July 1, 1888, you are directed to take full and accurate notes of all cases of "continued" and "remittent" fevers treated by you among patients of the Marine-Hospital Service, and to make special semi-annual reports of all such cases to this office.

The cases of fever should be classified, as far as practicable, according to the symptoms in each case, into simple continued, enteric, remittent, etc., and every symptom noted.

The presence or absence of the following symptoms relative to enteric fever should be carefully noted, together with the dates of their respective appearance: eruptions; diarrhœa; tympanites; intestinal hemorrhage; perforation of intestines; peritonitis; necropsy; temperature range; enlargement of spleen; delirium (character); mode of onset (gradual or sudden); presence or absence of initial chill; presence or absence of intestinal lesions, and if present, give exact location.

CASCARA SAGRADA IN RHEUMATISM.

H. T. GOODWIN, M.D., Assistant Surgeon, United States Marine Hospital Service, writes as follows in the *New York Medical Journal*, under date of June 9, 1888.

The effect of cascara sagrada in rheumatism I discovered by accident. About three months ago, I was attacked with severe rheumatic pains in my shoulder, the slightest motion causing intense pain. The third day of the attack, I commenced taking as a laxative ten drops of the cascara, t. i. d. The first morning after taking it the pains were so much less severe that I could move my arm freely. The day following I was entirely free of all discomfort.

Although, as I have intimated, I had not taken the cascara with any idea of relieving the rheumatism, it occurred to me a few days later that possibly the sudden subsidence of pain might have been due to the drug. There being a few cases of rheumatism in the wards, I determined to try to verify my suspicions. Discontinuing the salicylates, iodides, etc., which these patients were taking, I substituted ext. carcase sagrade fl., i. c. c., t. i. d. The result astonished me. Within twenty-four hours there was marked improvement in every case. One case is especially worthy of notice: The patient was a Swedish sailor, who had been admitted three months previously. He suffered intensely, and although almost everything had been given from which relief might be expected, his suffering was not allayed. For a day or two after admission he improved on large doses of salicylate of sodium, but subsequently the pains returned as badly as ever, and the salicylate had no further beneficial effect. Iodide of potassium was given several different times, but, owing to an idiosyncrasy, could be continued only two days at a time, a profuse rash making its appearance over the patient's entire body, the pains remaining as acute as ever. They were not confined to any two or three joints, but felt in all, being more severe, however, in the wrists, finger-joints, and ankles, all of which sometimes became oedematous. On the evening of February 5th, I commenced the exhibition of fifteen-drop doses of cascara sagrada three times daily. The following morning he was about the same; the second day he was much better; on the seventh he was so far recovered that he asked and obtained permission to walk out. From this on he continued to improve steadily, and on the 17th of February was discharged, recovered.

I have since used the cascara in fully thirty cases, some ten of which were in out-patients, and, with the exception of three or four in which there was a syphilitic taint, I have obtained the most satisfactory results. I commenced with 1 c. c., t. i. d., and have never had to increase it beyond 1.5 c. c., and even to this extent in but two cases. I have seldom had to wait beyond twenty-four hours for beneficial effects. In two cases I had to stop it temporarily, owing to its opening the bowels too freely. In such cases I would suggest that one of the preparations of iron be given (separately) at the same time. I usually combine it with syrup of glycerine in equal parts, and instruct the patient to take from thirty to forty drops in water. In one case in which neither it or the salicylate of sodium appeared to give much benefit, I combined the two with good effect.

It is but seldom the bowels are opened too freely by

it, the cases above referred to being the only ones I have so far observed.

I am not able to explain the action of the drug in relieving rheumatism; I leave that to other observers. I write this in the hope of inducing other medical men to use the cascara, report their experience, and indicate, more particularly, in what class of cases they have found it of most benefit.

EARLY RUPTURE OF A TUBAL GESTATION
SAC: OPERATION.

An interesting case is described by Dr. J. Zucker, of Berlin (*Centralblatt für Gynäk.*, No. 15, 1888, and *London Medical Recorder*, May 21, 1888). Dr. Zucker was called in on February 17, 1888, to an indigent woman, aged 32. She was suffering from severe pains in the loins and hypogastrium. She had borne two children, and had had one miscarriage; but the date of her last confinement was not stated. The last period was "in December or in January." On February 12th severe abdominal pains set in and lasted for two hours, passing off after purgation by drugs. The patient resumed work, but the pains returned on the 17th. The pulse was weak, the tongue dry. The abdominal walls were very tense, but an indistinctly circumscribed soft mass could be felt to the left of the cervix. The parts were very tender. Symptoms of severe intraperitoneal hæmorrhage set in during the night, and much time was lost in transferring her to Dr. Veit's wards. At 2 p. m. on February 18th Dr. Veit operated. The patient was pulseless and slightly delirious. Even under chloroform no circumscribed tumor could be felt. On opening the peritoneum blood spouted out freely. Nearly four litres of fluid blood had to be rapidly cleared away. The left appendages were carefully explored but found normal, and the right fimbria floated freely in the peritoneal cavity. On prolonged scrutiny the bleeding was at last found to proceed from a rent, two inches long and three-fifths of an inch wide, at the junction of the inner and middle third of the right tube. Fortunately, in clearing away the mass of clots around the rent, an entire minute ovum was discovered. The tube was speedily ligatured on each side of the rent, and the pedicle encircled by a transfixing suture (*rings umnäht*). The abdominal wound was then closed, and about a litre of bloody fluid was left in the peritoneum, the operator hoping that it would be absorbed. A compress was applied to the abdomen, the patient rallied for awhile, but died rather suddenly twenty-one hours after the operation. The ovum was found to be perfectly fresh, and could not have exceeded the third week of its development. The tubal sac was "at the most" not larger than a hazel-nut. No disease of the adjacent tubal mucous membrane could be found. The very early rupture and the profuse hæmorrhage from so small a rent were remarkable features in this case. Dr. Veit has operated in ten cases of tubal pregnancy. In three rupture had taken place, only one of these recovered; all the seven cases uncomplicated by rupture recovered. That abdominal section should be undertaken as speedily as possible when acute symptoms of intraperitoneal hæmorrhage occur after a distinct history of sudden cessation of the catamenia for two or more months, there can be little doubt.

Correspondence.

POSTURAL TREATMENT OF CONSTIPATION.

PAWTUCKET, R. I., June 30, 1888.

MR. EDITOR,—The essay on "Postural Treatment of Constipation" did not, I think, exhaust his theme. The seat of the water-closet should be low, and made to fit the parts anatomically. Through a board of proper thickness make a circular aperture of suitable dimensions, and then thin down laterally for some two inches, and scarf off on the under side, in front and rear, leaving the hole, when seen in profile, circular. That plan of a seat is comfortable, and it will give all the advantages of the "squat." In regard to a woman in travail, more than thirty years ago an "obstetrical chair" was offered in this market, which had all the aids to expedite labor claimed for the device brought to notice at the late medical meeting of the Massachusetts Medical Society. No one piece of carpentry is

more awkwardly done than making water-closet seats. Why, within a short time, in a first-class house in Providence, the aperture I noticed is like the section of a goose-egg, and it must be very uncomfortable to defecate sitting upon it.

Yours truly,

J. O. WHITNEY, M. D.

—The Board of Health of New South Wales has reported adversely upon the proposition to rid Australia of its pest of rabbits by the introduction of the fowl-cholera, according to the proposition of M. Pasteur. They fear that the remedy might "get away" from them, and, like a prairie fire, prove to be entirely beyond the control of its originators. As far as concerns such remedies, they prefer to bear the ills they have than fly to others that they know not of.

REPORTED MORTALITY FOR THE WEEK ENDING JUNE 23, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrheal Diseases.	Diph. & Croup.	Scarlet Fever.
New York	1,526,081	801	389	30.55	11.70	13.26	6.63	4.29
Philadelphia	1,016,758	389	156	17.16	13.52	7.80	2.60	.26
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	700,000	338	3	19.14	10.44	6.09	5.80	.87
St. Louis	449,160	222	122	39.35	9.90	28.35	2.70	—
Baltimore	437,135	195	104	30.69	26.01	24.48	1.02	—
Boston	407,024	164	50	8.54	18.81	1.61	1.27	—
New Orleans	248,000	135	53	29.60	11.10	21.46	—	—
Cincinnati	325,000	178	—	19.04	8.40	14.00	1.12	.56
Washington	225,000	144	86	37.35	5.52	25.22	2.07	—
Pittsburgh	210,000	166	100	33.00	6.60	30.00	.60	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	26	15	46.20	7.70	30.00	—	—
Charleston	60,145	48	25	16.84	8.32	14.36	—	—
Portland	40,000	10	3	—	10.00	—	—	—
Worcester	76,328	24	8	12.43	12.48	4.16	8.32	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	16	6	12.50	12.50	6.25	6.25	—
Fall River	61,203	—	—	—	—	—	—	—
Lynn	51,467	10	0	20.00	10.00	10.00	10.00	—
Lawrence	40,175	10	7	20.00	10.00	—	—	—
Springfield	33,332	14	3	14.28	14.28	—	11.28	—
New Bedford	36,298	16	3	6.25	18.75	—	6.25	—
Somerville	33,307	8	2	12.50	25.00	—	12.50	—
Holyoke	32,887	14	9	28.56	7.14	14.28	7.14	—
Salem	28,781	6	0	—	16.66	—	—	—
Chelsea	27,552	12	3	—	8.33	—	—	—
Haverhill	24,979	10	1	—	20.00	—	—	—
Taunton	24,736	—	—	—	—	—	—	—
Brockton	24,784	7	3	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	2	1	—	—	—	—	—
Malden	18,932	6	1	—	16.66	—	—	—
Fitchburg	17,534	4	1	—	—	—	—	—
Waltham	16,651	4	2	—	25.00	—	—	—
Newburyport	13,899	9	1	—	33.33	—	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 2,998; under five years of age 1,154; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 7 consumption 321, acute lung diseases 238, diarrheal diseases 427, diphtheria and croup 112, scarlet fever 38, measles 24, typhoid fever 28, whooping-cough 25, malarial fever 24, cerebro-spinal meningitis 20, erysipelas five, perneural fever five, small-pox two. From measles, New York 25, Chicago, St. Louis, and Washington two each, Baltimore, New Orleans and Lawrence one each. From typhoid fever, Chicago five, Cincinnati four, St. Louis, Boston and New Orleans three each, Baltimore and Washington two each, Pittsburgh, Nashville and Lawrence one each. From whooping-cough, New York 10, Chicago five, Washington four, Boston three, Baltimore, Cincinnati, and Pittsburgh one each. From malarial fever, New Orleans seven, St. Louis six, Baltimore four, New York three, Washington two, Nashville and Charleston one each. From cerebro-spinal meningitis, Chicago five, New York and Washington four each,

Pittsburgh and Nashville two each, St. Louis, Cincinnati and Holyoke one each. From erysipelas, New York three, Chicago and Baltimore one each. From puerperal fever, Chicago four, St. Louis one. From small-pox, New York and St. Louis one each.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending June 9th, the death-rate was 16.2. Deaths reported 2,915; infants under one year of age 68; acute diseases of the respiratory organs (London) 185, whooping-cough 81, diarrhoea 42, measles 40, scarlet fever 36, diphtheria 31, fevers 34, small-pox (Sheffield six, Preston four, Bristol one) 11.

The death-rates ranged from 12.5 in Birkenhead to 25.0 in Manchester; Birmingham 19.5; Bradford 14.3; Brighton 15.7; Hull 14.7; Leeds 15.5; Leicester 16.4; Liverpool 11.8; London 14.9; Newcastle-on-Tyne 12.8; Nottingham 12.9; Portsmouth 15.0; Sheffield 18.0; Sunderland 18.2.

In Edinburgh 17.7; Glasgow 20.9; Dublin 21.7.

The meteorological record for the week ending June 23, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, June 23, 1888.	Barom- eter.	Thermometer.				Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Direction, Hrs. & Min.	Amount in Inches.	
Sunday, ... 17	29.80	71.0	75.0	65.0	70.0	66.0	70.0	69.0	N. E.	S. E.	S. W.	4	9	8	C.	C.	C.			
Monday, ... 18	29.81	78.0	89.0	64.0	63.0	49.0	63.0	58.0	W.	W.	N.	15	8	10	C.	O.	C.			
Tuesday, ... 19	29.98	68.0	75.0	64.0	57.0	45.0	66.0	56.0	N. E.	S. E.	S. W.	12	6	12	O.	F.	O.			
Wednesday, ... 20	29.89	65.0	71.0	61.0	67.0	81.0	76.0	75.0	W.	N.	E.	12	5	8	O.	O.	O.			
Thursday, ... 21	29.91	59.0	63.0	56.0	86.0	89.0	82.0	89.0	S. E.	S. E.	S. W.	6	6	1	O.	O.	F.	3	.07	
Friday, ... 22	29.72	76.0	88.0	55.0	89.0	64.0	85.0	79.0	S. E.	S. W.	S. W.	1	11	9	G.	O.	F.	3	.01	
Saturday, ... 23	29.67	55.0	56.0	69.0	72.0	46.0	80.0	66.0	W.	W.	W.	12	16	10	G.	C.	O.	3	.21	
Mean, the Week.	29.84	72.0	79.0	62.				70.0											5½	.29

† O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 22, 1888, TO JUNE 29, 1888.

MCPARLIN, T. A., colonel and surgeon, U. S. Army. Granted leave of absence for one month with permission to apply for an extension of one month. S. O. 52, Department of the Platte, June 20, 1888.

BROWN, J. M., major and surgeon. Will take charge of the office and duties of the Medical Director, Department of the Platte, during temporary absence of Col. McParlin. S. O. 52, Department of the Platte, June 20, 1888.

OWEN, WM. K., Jr., captain and assistant surgeon. Ordered to Fort Leavenworth, Kansas, for duty. S. O. 148, A. G. O., June 27, 1888.

WOODHULL, A. A., major and surgeon. Granted leave of absence for three months to take effect about July 10, 1888. S. O. 148, A. G. O., June 27, 1888.

WOOD, MARSHALL W., captain and assistant surgeon. Ordered to Fort Randall, D. T., for duty. S. O. 147, A. G. O., June 26, 1888.

SHANNON, WM. C., captain and assistant surgeon. Ordered to Fort Meade, D. T., for duty. S. O. 147, A. G. O., June 26, 1888.

MCCRERY, GEO., captain and assistant surgeon. Ordered to Fort Warren, Mass., for duty. S. O. 147, A. G. O., June 26, 1888.

So much of Paragraph 3, S. O. 112, A. G. O., June 20, 1888, as relates to Captains George H. Torney and George McCreery, assistant surgeons, is revoked. S. O. 147, A. G. O., June 26, 1888.

GANDY, CHAS. M., first lieutenant and assistant surgeon. Granted leave of absence for three months to take effect on or after July 5, 1888. S. O. 145, A. G. O., June 23, 1888.

POINDEXTER, J. D., first lieutenant and assistant surgeon. Granted leave of absence for one month. S. O. 55, Department of Dakota, June 18, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING JUNE 30, 1888.

MOORE, A. M., surgeon. Ordered to Naval Station, New London.

AUSTIN, A. A., passed assistant surgeon. Detached from "Gedney" and wait orders.

OWINGS, THOMAS, assistant surgeon. Detached from Naval Station, New London, and to Coast Survey Steamer "Gedney."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING JUNE 30, 1888.

VANSANT, JOHN, surgeon. Granted leave of absence for ten days, June 25, 1888.

MEAD, F. W., passed assistant surgeon. Granted leave of absence for thirty days, June 28, 1888.

APPOINTMENTS. BOSTON CITY HOSPITAL.

The trustees of the Boston City Hospital have made the following appointments: J. Orne Green, M.D., Visiting Aural Surgeon; E. D. Spar, M.D., and George A. Leland, M.D., Aural Surgeons to Out-Patients; Henry W. Kilburn, M.D., Assistant to the Ophthalmic Surgeon.

BOOKS AND PAMPHLETS RECEIVED.

Nineteenth Annual Report of the State Board of Health of Massachusetts. Boston, 1888.

Food Laws. By Henry Leffmann, M.D. Philadelphia, 1888. Medical Publications; Harvard Medical School, 1887.

Morrow's Atlas of Venereal and Skin Diseases, No. 5. New York: William Wood & Co.

Massachusetts College of Pharmacy. Twenty-first Annual Catalogue. 1887-88.

The Relation of Alimentation and Disease. By J. H. Salisbury, A. M., M.D., Member of the Philosophical Society of Great Britain, etc. New York: J. H. Vail & Co. 1888.

Contributions to Clinical and Practical Medicine. By A. T. H. Waters, M.D., Fellow of the Royal College of Physicians of London, etc. London: J. & A. Churchill. 1887.

The Electric Illumination of the Bladder and Urethra as a Means of Diagnosis of Obstructive Vesico-Urethral Diseases. By E. Harry Fenwick, F.R.C.S., etc. With thirty illustrations. London: J. & A. Churchill. 1888.

The Physician's Leisure Library, No. XI. The Disorders of Menstruation. By Edward W. Jenks, M.D. Detroit: George S. Davis. 1887.

A System of American Obstetrics. By American Authors. Edited by Barton Cooke Hirst, M.D., Associate Professor of Obstetrics in the University of Pennsylvania, etc. Volume I. Illustrated with a colored plate and 329 engravings on wood. Philadelphia: Lea Brothers & Co. 1888.

The Alcohol Habit. By L. W. Baker, M.D., Member American Association for the Cure of Inebriates; Corresponding Member Medico-Legal Society, New York, etc. Baldwinville, Mass. Reprint. St. Louis: 1888.

Stricture of the Urethra; Urethrotomy under Cocaine Anesthesia. By Henry J. Reynolds, M.D., Professor of Dermatology in the College of Physicians and Surgeons; Professor of Skin and Genito-Urinary Diseases, Chicago Polytechnic, etc. Chicago. Reprint. 1888.

A New Way of Training Nurses. By A. Worcester. A.M., M.D., Fellow of the Massachusetts Medical Society, etc. Boston: Cupples & Hurd. 1888.

Dissolution and Evolution and the Science of Medicine: an attempt to coordinate the summary facts of pathology, and to establish the first principles of treatment. By C. Pittfield Mitchell, M.R.C.S. England, etc. London: Longmans, Green & Co. New York, 1888.

A Manual for Hospital Nurses and Others engaged in Attending on the Sick. By Edward J. Donville, L.R.C.P. London, M.R.C.S. England, etc. Sixth edition. Philadelphia: P. Blakiston, Son & Co. 1888.

The Language of Medicine: A Manual giving the Origin, Etymology, Pronunciation and Meaning of the Technical Terms found in Medical Literature. By F. R. Campbell, A.M., M.D., etc. New York: D. Appleton & Co. 1888.

Original Articles.

A CASE OF GENERAL PARALYSIS OF TEN YEARS' DURATION; DEATH FROM HEART DISEASE.¹

BY G. F. JELLY, M.D.

FORMERLY the duration of general paralysis of the insane was stated to be from two to three years, and the average residence of cases in an insane hospital was nearer two than three years, as the hospital rarely received them till the disease was quite advanced. An earlier recognition of the symptoms has extended the average time, as has been clearly shown by Dr. C. F. Folsom in a recent paper. Much depends upon the acuteness of the observer, and much upon the surroundings of the patient and the care which he receives, nothing being so favorable as a quiet and well-regulated life, and nothing so unfavorable as excitement and confusion. Probably the average duration of the disease in the better class of patients is from four to five years. Cases of much longer duration are known to have existed, but those which have lived nine or ten years are very rare.

The following case is interesting, as showing a fair degree of intelligence after, at least, ten years' duration, through nine of which he was more or less under my observation. For portions of the history of this patient I am indebted to the records of McLean Asylum:

A. G. B. was admitted to the McLean Asylum, May 22, 1875. He was forty-five years of age, a graduate of Harvard College, and a lawyer by profession, whose chief business had been the care of estates and investment of funds for other people, in which he had shown good ability, and had been considered reliable and honest. He had made for himself a competency, and lived freely and rather luxuriously. In early life he had been a private secretary to the historian, Prescott, and was a man of literary tastes, and also well versed in the modern languages. After coming to the Asylum and being put under guardianship, it was found that he had lost much of his property through unwarranted extravagance and foolish purchases, especially through the payment of exorbitant sums of money for land adjoining his home estate, which was in the country, and that his trust accounts were in a state of chaos for a period of from one to two years previous to his commitment. Indeed, could it not have been clearly proved that he had been mentally unsound during that time, he would probably have been arrested by those whose property had suffered. His friends stated that one of his brothers died insane, and that for six years he himself was quite intemperate, but for the six years just previous to 1875 he was temperate, though fond of wine and champagne. They had recognized no disease till about ten weeks prior to his admission to the Asylum, when, while in Boston and very busy, he had some kind of an ill turn, in which he complained of severe pain in the back of his neck, and seemed dazed. He was very restless that night, and the next day was excited and forgetful of the names of his family, and able to see only one-half of an object. Two days afterwards they noticed a staggering gait, thickness of speech, tremor of the hands, and a tendency to talk continually. He improved somewhat for a week, but, finding himself un-

able to sign a check, became very much excited, was extravagant, talked of his great wealth, wanted everything, and, if refused, was very angry. He finally became abusive and uncontrollable, and was brought to the Asylum. When admitted, he walked with an unsteady and feeble gait, was excited, and there was considerable difficulty in articulating words. He was very angry when he found where he was (his friends had not told him), and made many threats.

May 26th, four days after admission, the record states, he is in a very chaotic state, does not remember the names of people which he has been told within ten minutes, and does not know his own room.

June 1st. Continues about the same, with slight increase of his unfavorable symptoms. Thinks that he goes to walk and sleeps in various rooms, is extravagant, and offers large sums of money for his discharge.

June 20th. There is no improvement. Is becoming filthy.

July 13th. He has had several congestive attacks from vaso-motor disturbance, one of which was very severe, confining him to his bed for several days, and rendering him utterly incoherent and oblivious of passing events. When he rallied, it was found that his memory was much more impaired than it had been.

August 6th. He is somewhat clearer mentally, and there is some physical gain. He is more quiet, though always exasperated.

August 30th. His ideas of great wealth continue, and he still confuses persons, talks all the time when he can find an audience.

He has four children, but insists that he has six, giving names to the two extra ones, and describing their appearance. He says that he is going home to make their number an even dozen. He is now easily controlled, and his wife removed him from the Asylum a little more than three months after his admission.

He was taken at once to his home. He made search for the two imaginary children, but was soon convinced of their unreality. He gradually became more quiet, and before the end of a year his extravagant delusions concerning his wealth left him, but his exhilaration, his difficulty in articulation, the tremor of his tongue and lips, and his ataxic gait continued. Owing to the ravages he had made in his property, he lost his home, which had been one of affluence, and was reduced to comparative poverty. He moved to Cambridge a year or two after leaving the Asylum, and spent much time in the College library. His memory for past events and for what he read was comparatively good, but for the minor matters of ordinary life it was unreliable. He could, for instance, never do the marketing unless his wife wrote down for him every article needed. He passed much time in translating Italian and Spanish, I understand, with accuracy, and prepared a book of Proverbs which he had translated from the Spanish. During this whole time he became poorer and poorer, but this gave him little or no anxiety. His wife was at work, and he had enough to eat and drink, and could continue his reading and translating. All other things seemed of no importance. He was almost uniformly good-natured and tractable, recognizing in a degree his condition, but hopeful and full of schemes for the future. He was subject to periods of confusion and partial unconsciousness, after which he would be less clear for a time.

¹ Read before the Boston Society for Medical Observation, April 2, 1888.

In 1881, after living in Cambridge three years, he moved to Boston to a poorer home and greater poverty. He and his family would have actually suffered had they not been helped by richer relatives. His children were poorly clothed, his quarters were small, his wife hard at work, but he was complacent and comfortable. He still continued his translations, and some time in 1881 was asked to translate for a lawyer friend a paper relating to an Italian patent. The validity of the patent, as I understand it, turned upon the rendering of a certain word. With his usual self-confidence, he allowed himself to be put upon the witness-stand in the United States Court, bore himself well, and his opinion was sustained. For this service he received ten dollars, which he spoke of to me with great glee, and immediately made many plans to increase his wealth by similar work.

It was then over six years since he had left the Asylum, one year of which he had been very much impaired, and the other five comparatively clear and comfortable. In the early part of 1882 his mental condition became worse. He was more forgetful, less attentive to reading, and more careless in his appearance. He was more subject to periods of dullness and confusion. He now conceived an animosity to his oldest son, a quiet and well-behaved boy of sixteen, and abused him roundly. He began to drink occasionally, a small amount of liquor making him very irritable and quite drunk. He was very penitent after these indulgences, but they were often repeated.

In September, 1882, he came to me and asked to be sent to the Danvers Hospital, giving as his reasons that he was not so well as he had been, that he could not resist drinking, and that his children disturbed him. It was very evident that he was losing mental strength. He seemed to enjoy the process of being committed, especially an interview with the judge of probate, very much. He remained at Danvers two months. On his return, though he was more quiet, his memory had failed, he was often dazed, and frequently lost his way in the street. He had a good deal of difficulty in going down stairs. It was arranged, soon after his discharge from Danvers, that he should go to McLean again, and he was readmitted there November 9, 1882. The certificate of the physicians at this time was:

"He has never been well since he was first discharged. He is in a state of almost constant exhilaration, is sometimes irritable, and easily excited. There is tremor of the lips and tongue, and his gait is impaired."

He remained willingly at the Asylum, spending most of his time in reading, and as was the case while at Danvers, became more quiet under the influence of a regulated life and proper food. He was allowed a good deal of freedom, made several visits home, and was discharged much improved May 1st, after a residence of about six months. From that time till the autumn he continued quiet and comfortable, but there was a deterioration in his mental power and physical strength. He could write very little, his handwriting was sometimes almost illegible, and he read mostly works of a lighter character than formerly.

In October, 1883, he again came to me and wanted to go to the McLean as a place of refuge and quiet, realizing fully that he was losing ground. He was sufficiently clear to be admitted as a voluntary patient, and it was thought best not to go through the for-

malty of a regular commitment. He was received October 23d. I again quote from the Asylum records: "It is thought that he has failed mentally since he was here before, as well as physically. Now he frequently asks his way to his room, and could not go about town alone. He has an idea that he can go into a law office and do clerical work, or may go into a partnership with some one." At the same time, his memory was a good deal impaired and his handwriting was tremulous, and in his letters the words were misspelled or omitted.

These periods of hospital life were always of benefit to him, and he always came away less excitable and in better physical condition.

After leaving the Asylum in December, 1883, he continued to fail mentally and physically. His gait was more enfeebled, his steps were of unequal length, his articulation worse, but he never lost his hope or his confidence in his future prospects. He became less cleanly and more irritable. He could converse intelligently and continued his reading, but in a desultory fashion. It was no longer safe to permit him to go any distance from his home alone.

While in this condition, in the spring of 1884, he suddenly died with symptoms of angina pectoris. He was not in Boston, and I did not see him at the time. The physician who was called detected valvular disease of the heart. Nothing had called my attention to his chest, and I had not examined it for a long time. He had no disease of the kidneys. He had, to my certain knowledge, suffered from general paralysis of the insane for more than ten years.

With the exception of the case of another gentleman, who is still living and in pretty good mental and physical condition, who is also suffering from general paralysis, I have never been able to follow a patient with this disease for so long a time.

The case which I have related seems to me remarkable, not only from the fact that the patient lived so long, but, also, that after a period of utter incoherence and great prostration, he rallied so far that there were four years when the disease was apparently stationary, during which he lived very much as sane and well people do, and that he preserved such a good amount of intelligence and physical strength to the end. I think there is every reason to believe that he would not have died from the effects of general paralysis for some time longer.

During all the years of my acquaintance with him the diagnosis of his disease was unmistakable, and there was no difference of opinion among all the physicians who saw him, who were accustomed to observe similar cases. There was no reason to suspect that he had ever had specific disease. The knee-jerk was always diminished, and latterly, entirely lost. The pupils were sluggish and small, but equal in size.

From the time that I first saw him there was loss of mental power, difficulty in articulation, an unsteady gait, either excitement, extravagance, or a comfortable sense of well-being, even under the most trying circumstances, and, with the exception of the four years in which there was little apparent change, his progress was steadily downwards, with occasional short improvements.

—The International Ophthalmological Congress will be held at Heidelberg, from the 9th to the 12th of August next.

ONE, POSSIBLY TWO, CASES OF GRAVES'S DISEASE.¹

BY FRANK E. BUNDY, M.D.

I TRUST that you will pardon me if before reporting the two cases which have come under my observation I recall briefly to your minds the symptoms and somewhat of the history of a disease which, by some, has been styled Graves's disease, by others Basedow's disease, according as the writers have regarded the Englishman or the German, the first to group and call attention to these cases, and by others exophthalmic goitre.

The three cardinal symptoms of this disease are palpitation of the heart, enlarged thyroid, and protrusion of the eyeballs, and these occur usually in the order named. A fourth symptom, first pointed out by von Graefe, and regarded by some as almost an essential feature, but which, if I am not mistaken, does not occur in a majority of the cases reported, is a want of harmony between the movements of the eyelids and the eyeballs, by which, on looking downward, the eyelid, instead of following the movements of the eyeball, stops half-way, or on a line with the horizon. Associated with these is a long list of other symptoms, not all occurring in the same subject, but made up from the various cases reported, such as a small, rapid, and often weak pulse, ranging from 80 to 160, sometimes uncountable, strong pulsation of the carotids in the neck, an aneurismal thrill and a bellows-murmur in one, sometimes in both lobes of the thyroid, occasionally organic disease of the heart, tenderness over the region of the cervical sympathetic, emotional disturbances, great irritability of temper, sudden changes from excitement to depression, a mild form of mania, insomnia, loss of appetite, diarrhoea, increased body-heat, elevation of temperature, profuse perspiration, tremor of the hands, partial loss of motility, alteration in the color of the skin, cutaneous eruptions, and, in women, disturbed menstruation.

To fairly come under the head of Graves's disease, a case should show, at least, two of the cardinal symptoms, one of which should be palpitation of the heart. Cases are reported in which the exophthalmos was wanting, others with no enlargement of the thyroid, but none, so far as I know, where the heart was unaffected. One eyeball only may protrude, one lobe of the thyroid be enlarged, and these deformities may occur on the same or on opposite sides.

Of the etiology of the disease not much can be said that is satisfactory. Sex, age, a neurotic disposition and heredity are regarded as predisposing causes. Twice as many women as men have the disease.

The age at which the disease is most common is between fifteen and forty. The cases of a boy at eight and a woman at sixty are on record. In quite a number of cases a history of insanity or nervous disease has been detected in the family. The immediate cause may be some great mental emotion, or overtaxing of the brain, and one case is reported in which the disease developed rapidly, after a severe blow on the head. There seems to be a great diversity of opinion as to the seat of the lesion (if, indeed, there be a lesion) which is the cause of these symptoms.

The number of autopsies is small. Aside from the abnormal conditions found in the orbit and the thyroid

gland, the cervical sympathetic and its ganglia seem to be the tissues most frequently found diseased. Dr. Hammond and others claim that it is a disease not of the sympathetic, but of the brain and medulla oblongata.

Just twenty years ago a case was reported to this Society by Dr. Knight, in which an autopsy, made by Dr. Webber, disclosed the sympathetic, with its ganglia more or less altered in appearance, and this corresponds with the results of a majority of the post-mortems made.

The prognosis should be extremely guarded. Some recover, a few are rapidly fatal, others linger on for years, to die of some intercurrent disease.

Of the treatment I shall speak later on. The list of remedies is long, varied, and even contradictory.

My first case is as follows:

On May 16, 1887, I saw at my office, Miss A. E., who called with her mother to consult me with regard to her condition. She was nineteen years old, five feet four inches tall, and weighed about one hundred and forty pounds. In complexion she was brunette, with brown hair and eyes, and was fairly well nourished. She had graduated from the high school in the town where she lived, in June, 1886, and the following September entered Bryant and Stratton's Commercial College in Boston. The school rooms were in an upper story, and reached by four flights of stairs. It was her custom to run up the first three and take the fourth leisurely. She continued in this school six weeks, and was then obliged to give up on account of what her physician called nervous prostration, a prominent symptom of which was palpitation. Later she made two unsuccessful attempts to resume her studies.

From Mrs. E. I learned the following facts. The daughter is an only child, two children having died in early childhood, one from measles, the other from scarlet fever. Both she and her husband are strong and well. Her own father and one sister died with phthisis, also her husband's mother and one sister. In neither her own family nor her husband's is there any record of insanity or nervous disease. She has never regarded A. as a strong girl, and yet never as sickly. She was always of a nervous temperament, easily excited, and subject to severe attacks of palpitation. She began to menstruate when thirteen years old. Until her present illness she had always been regular as to time and quantity of discharge, but with more or less pain. For the last eighteen months the quantity has been diminishing. She was unwell two weeks ago.

There was no perceptible change in A.'s health until some time after she began her school work in Boston. Then her mother noticed that she was becoming restless and unhappy. She could not sleep, and was losing her appetite and strength, and suffering from palpitation and rapid breathing. In December, 1886, about five months before I saw her, the swelling in the neck was detected, and four months later the prominence of the eyeballs was first noticeable. The greatest change was apparent in her disposition. From being pleasant, amiable, easy to influence, she became nervous, exceedingly irritable, hard to manage, and on the slightest provocation very lachrymose. "I know that I am very ugly, mother, but I cannot help it," was an expression she frequently used.

For several weeks she has been having diarrhoea, from three to five discharges daily, small and generally

¹ Read before the Boston Society for Medical Observation, April 5, 1888.

natural in appearance, but occasionally clay colored. Urine normal, except when excessive in quantity and pale. Sleeps badly; is very restless, constantly turning from side to side and throwing off the bed clothes. She complains at times, of great heat and sweating of different parts of the body, especially the hands.

Physical examination: the action of the heart was very rapid and its force much augmented. The impulse could be seen and felt over an increased area of the chest wall. The organ was not enlarged, nor was its rhythm irregular; there were no abnormal sounds. The pulse was 140, weak, soft and difficult to count. Both lobes of the thyroid glands were equally enlarged to about an inch in diameter, were soft and yielding and over the right could be distinctly felt the aneurismal thrill, and heard with each systole of the heart the loud bellows-murmur peculiar to this condition. The size of the neck over the thyroid body was 14 inches. The eyes were large and somewhat prominent, the pupils normal; there was no defect of vision. The lids completely covered the eyeballs and the movements of the eyeballs and the eyelids were properly associated. The skin was hot and moist, the temperature was 99½. A tremor of the hands was quite noticeable as was also the loss of grasp power. She was unsteady on her feet, and walked as if she had just recovered from a severe sickness.

She was neither anemic nor chlorotic. She had a severe cough, the result of a cold. She was greatly agitated by the examination and often a flood of tears was the only answer I could get to a very simple question.

I visited A. E. for the second time at her home about twenty-five miles from Boston, June, 18th, and recorded the following: She cannot walk as well as four weeks ago; prominence of the eyeballs is more noticeable; the cough is better; she takes more nourishment; the measure of the neck over the thyroid is 13½ inches, instead of 14 inches; sleeps more but is still very restless; three dejections each day, small and of better color; pulse, 150; temperature above normal.

Under date July 2d, my notes read: There is a decided improvement in general appearance; is more quiet; her mother says, "She is better in her mind." She sleeps well and has no cough; size of neck 13 inches; eyes less prominent.

July 21st. Looks better, less anxious, more cheerful and quiet; size of neck 12½ inches. Since my last visit, three weeks ago, she has lost the power of walking; cannot take a step alone. When lying in bed, she can draw her limbs up or push with them quite forcibly, but cannot lift them perpendicularly from the bed. Sensation but slightly if at all impaired; there is tenderness of the cervical sympathetic at both angles of the jaw. The color of the skin especially of the limbs is a dark brown, almost a bronze. The knee-jerk is absent in both limbs and tickling the soles of the feet elicits no response. The legs and feet are large and heavy; there is some œdema of legs.

From this date, July 21, 1887, to my last visit, February 11, 1888, I saw Miss E. on an average once in three weeks, and in December, 1887, she spent two weeks in town, when I saw her every day, and once in consultation with Dr. Webber.

There has been a slow but steady improvement in all respects except the rapidity of the heart's action. The ability to walk returned gradually. For a long time

after she could walk without assistance, she could not get up from the side of the bed or a common chair without help. She now uses a high chair from which she can get to her feet unaided. At the time of my last visit I made the following entry in my note-book: Has gained flesh, eats well, sleeps quietly, ocular prominence hardly noticeable. I find that the size of the thyroid is subject to frequent change. The thrill and bellows-murmur in right lobe of the glands is less marked; pulse 140, temperature 102½, increase of temperature due to a severe cold, from which she is suffering. She is less annoyed by heat of skin and sweat; has walked to a neighbors (about thirty rods away) and back without help. She is decidedly more cheerful, hopeful and amiable; knee-jerk in both limbs preceptible and she responds quickly to the least irritation of the soles of her feet. The color of the skin and the shape of the legs has improved and the little œdema that has existed from time to time has entirely disappeared. She has menstruated twice since last May, the last time ten days ago. With regard to the treatment I would say, that almost every remedy that has been recommended in this disease has been tried faithfully or otherwise. I began with ergot and the bromides, and followed with aconite, belladonna, nux vomica, veratrum, several forms of iron, wine of cocoa, and arsenic. Quinine she has taken almost constantly and for the last six months electricity by the faradic or the primary galvanic currents together with massage has been used. The battery employed was the Barrett chloride of zinc battery, one pole placed at the nape of the neck or the angle of the jaw, the other at the epigastrium. It was also applied to the spine and limbs. The strength of the current was what she could bear without great inconvenience.

As I review this case I am persuaded that there is at present no specific for this formidable disease and that benefit has been derived only from those remedies which tend to quiet the nervous system and to aid nature in restoring the general health, and that if Miss E. ever fully recovers, it will be by treatment along this line, and that it will take more than one summer. The moral treatment is as important as the medical. Confidence should be established between patient and physician, all forms of excitement banished, a proper diet, and much out-door exercise prescribed, everything done to inspire hope, and then there should be a patient waiting for the glad fruition. I presume that no one will question the genuineness of the above case.

My possible case of Graves's disease is as follows:

Mrs. Lizzie M., age forty, has been married five years; no children; has never had any uterine disease; is five feet three inches tall, and weighs about one hundred and thirty pounds; complexion fair; father living and well, at seventy years of age; mother died at thirty in childbirth. She has one brother and two sisters living and in good health. Several brothers and sisters died in infancy. One of her father's brothers died insane, and a cousin of her mother is now an inmate of an insane asylum.

Until she was twenty-four she had no sickness except the diseases incident to childhood. At that age she had a severe attack of urticaria, the result, her doctor told her, of eating "moostuck fish," although two others, who partook more freely of the fish, escaped. For eight years after this attack she frequently noticed in the morning a patch of swollen skin, of

natural color, about the size of a half-dollar, on her forehead or face, and what seemed strange to her was that invariably on the arm, hand, leg or foot, of the opposite side was a patch of skin of the same character. This would last for a few hours and then disappear. With this exception she was well up to 1879, when she became my patient at St. Elizabeth's Hospital, first with typhoid fever, then with pneumonia.

In the fall of 1878 she was engaged in doing general housework in a large city house, and feeling well, was in the habit of going from the bottom to the top of the stairs on the run half a dozen times a day. It was at this time that she began to suffer from severe attacks of palpitation, and that her friends noticed that her eyeballs were bulging out. The ocular prominence continued to increase gradually for about four years, since which time it has remained stationary.

In the winter of 1882-83 she had an attack of erythema of both legs. In August and October, and again in March, 1887, she had attacks of erysipelas of the face.

In the early part of September, 1887, I was called, and found her recovering from what proved to have been pemphigus. It began in her face, and then appeared in the left hand, which was still red, stiff and painful. Before the left hand was well the disease broke out afresh in the right, and from that time until the last of December, nearly four months, she was a great sufferer, and was confined a greater part of the time to her bed. She has not yet fully recovered the use of her right hand, but is slowly improving in her general health. Her eyes are very prominent, so much so as to attract attention on the street. The eyelids fail to cover the eyeballs by at least the eighth of an inch. By gentle pressure the globes can be pushed back, but immediately return when the pressure is removed. There is no want of agreement between the movements of the eyelids and the eyeballs. While there are no physical signs of heart disease, she has frequent attacks of distressing palpitation.

The question, why I regard this case as one of Graves's disease may be very properly asked, and I must confess, that I did not so regard it until the case of Miss E. came under my observation. The immediate cause of the disease seems to have been the same in both cases, and in each the first symptom was palpitation. With Miss E. the other two cardinal symptoms followed in their regular order, but with Mrs. M. the enlarged thyroid was absent, an omission by no means rare. During Mrs. M.'s more recent illness from pemphigus there was a peculiar nervousness, a tremor of the hands, frequent palpitation of the heart, and an unsteady gait, which, to a greater degree, existed in the case of Miss E.

Two cases of undoubted Graves's disease, associated with urticaria, have been reported by Dr. Bulkley, of New York.

Erythema, pemphigus, and urticaria are now classed under skin diseases which may have a neurotic origin.

After preparing this paper I heard incidentally of two other cases of Graves's disease which had never been reported, and wrote to the gentlemen who had them in charge for such information as they could furnish.

The facts are not as complete as I could wish, but are, I think, of sufficient interest to warrant my giving them. Dr. Milton Jay, of Chicago, very kindly sent me what he could recall of the history in the case of

Miss R., who died about eleven years ago. His notes, taken at the time, were accidentally destroyed.

She was a school teacher, twenty-four years old, of dark complexion and nervous temperament. Her father died by suicide, insane. One sister was very eccentric.

The immediate cause of the disease was great sorrow, followed by nervous prostration. The symptoms were palpitation, enlarged thyroid, marked protrusion of the eyeballs, the eyelids failing to cover them, a want of harmony between movements of eyeballs and eyelids, increased heat and high temperature, colligative sweats, great nervous and mental irritability and diarrhea. During the last two weeks of her life she had peritonitis and metritis, and she died with inflammation of the brain and spinal cord. No autopsy.

I am indebted to the courtesy of Dr. W. Scott Hill, of Augusta, Me., for the following facts in the case of Miss S., who came to him in 1885 as an office patient: She is twenty-nine years old, has brown hair and eyes, nervous temperament, and belongs to a family in which there is no history of insanity, but of which several members have been regarded as extremely nervous. The only known cause of the disease was insomnia, the result of hard study and the excitements incident to social life, her father being United States Consul at a foreign port.

The disease appeared in 1881. She had the best advice that could be obtained abroad, but came home in 1885 with all the principal symptoms well marked. She had palpitation, enlarged thyroid, very large and prominent eyeballs, over which the lids would not meet, and a decided want of agreement in the movements of the eyelids and eyeballs. The pulse ranged from 140 to 150, and she complained of excessive heat, a constant feeling of extreme nervous tension, great restlessness, and loss of sleep. In walking, she had an unsteady, wriggling gait. I know from another source that, as the disease developed, Miss S. experienced that remarkable change of disposition which is almost pathognomonic, and was so prominent a symptom in the case of Miss E. Dr. Hill writes that, after a year's treatment, the thyroid enlargement had entirely disappeared, except what is due to thickening of the tissues, and that his patient regards herself as perfectly well. He attributes the cure to the use of the third decimal tincture of nuxvomica. I know that he will pardon me if I suggest that, from my standpoint, more credit should be given to the moral treatment, which I do not doubt he enjoined, than to the much attenuated drug.

Since the meeting of the Society, at which this paper was read, Dr. Frederick W. Johnson has at my request very kindly sent me the following notes of a case in which he was professionally interested: Mrs. E. K., aged forty-seven at time of death, had been married twenty-four years; of dark complexion and nervous temperament. She had been sick ten years. So far as known no history of insanity or neurotic disease in either branch of the family. At the age of twelve she had acute articular rheumatism; never well afterwards, and suffered severely from chronic rheumatic arthritis. The cause in this case is supposed to be heart disease, the result of rheumatism.

The cardinal symptoms were present. The action of the heart was exceedingly violent and the pulse rapid, ranging from normal to 120. There was mitral regurgitation. The thyroid gradually increased

in size, for seven years, and then remained stationary. The protrusion of the eyeballs was very marked for eight years. At times, the lids failed to cover the globes. For some time before death, the lids did not follow the eyeballs on a downward glance. The patient had hysterical paralysis of the œsophagus, numbness of right hand and arm, with inability to use them. She was very irritable, had sudden attacks of dyspnoea, was unable to sleep, on account of restlessness, and at times talked as if greatly confused.

There was increase in the secretion of sweat with cold hands and feet. There was great tremor of the hands and lips. The cause of death was œdema of the lungs, the result of heart disease.

Twice in the course of the disease, when the life of the patient seemed threatened, great benefit was derived from Dr. Weir Mitchell's plan of treatment, a month's rest in bed, frequent feeding, massage and electricity. At one time the action of the heart was reduced from a pulse of 120 to 90 by the use of aconite.

A CASE OF LABOR WITH THREATENING SYMPTOMS.¹

BY EDWARD REYNOLDS, M.D.

Mrs. B., a large and strong woman, with a previous history of exceptionally good health, placed herself under my charge in the sixth month of her second pregnancy. She was at that time very little troubled by the disorders usual to her condition, and a routine examination of the urine detected nothing abnormal. She remained comfortable in every way until about the middle of the eighth month, when she began to complain of a constant pain in the lower abdomen, referred, for the most part, to the symphysis pubis, and due probably to distension from the rapid increase of the uterus, which was already of the size usual at term. Abdominal palpation, made at this time and frequently repeated, established the probable presence of a single, rather large fetus, and an excess of liquor amnii. Two weeks later (at about eight months) her feet, hands, and eyelids became decidedly œdematous, and remained swollen, though to a varying amount, during the whole of the remainder of her pregnancy.

During the last six weeks she was troubled at different times by frontal headache, disturbed vision, a slight recurrence of the nausea of pregnancy, and by a constant ringing in the ears. The urine, which was examined repeatedly, was light-colored, of low specific gravity (1010-15), and was always passed in very large amount, usually three quarts in the twenty-four hours. It contained a very slight trace of albumen, but no casts were ever found. The patient stated that from early girlhood she had passed habitually a very large amount of urine, and that she thought the present amount was no more than was usual with her.

Treatment consisted of tr. ferri chlor., grt. xx, t. i. d., regulation of the diet, and general hygienic precautions. The distension steadily increased, and by the end of pregnancy amounted to a distinct, though not excessive hydrannios, but she kept about the house, and was, under the circumstances, very active.

During the ninth month she was twice threatened with premature labor, and on both occasions the

cervix was much shortened and the os dilated to the size of a ten-cent piece, by regular and intermittent uterine contractions, but with each attack, rest in bed and the moderate use of opiates resulted in the disappearance of the pains.

True labor set in at 1 A. M., October 26, 1887, and the patient reports that at 4 A. M. the membranes ruptured and a large quantity of water escaped. On my arrival, at 5 A. M., I found her in a state of intense, unintermittent pain, with apparently but slight exacerbations, although examination proved that the uterine contractions were strong and regular and fairly intermittent. The head was high and movable, O. L. A., well flexed. The os was of the size of a dollar, the caput already fairly large. The foetal heart distant, but regular. The woman, who was usually calm and easy-tempered, was in a state of great excitement and irritability, alternately caressing and scolding her husband and nurse, throwing herself about the bed, screaming, and demanding instant relief. After watching her for a few minutes, I pushed up the head and allowed the gradual escape of about a quart of liquor amnii. The pain almost at once became intermittent, and the patient gradually returned to a more rational mental state.

During the next two hours she behaved well, and the pains were very strong and regular, with good intermissions. Under their influence the head became firmly engaged at the superior strait, but was delayed by bony resistance, and did not as yet bear against the os, which lunged away from it, thick and rigid, and still no larger than a dollar. By 8 A. M. the patient was again becoming tired and irritable, and the moderate administration of ether was tried, but as this only increased the excitement, it was carried to the point of surgical anesthesia for rest. Under ether, the os was soft and dilatable. On recovery from the ether the patient was somewhat more quiet, and at 8.30 A. M. the head made a slight advance and rested against the os, apparently with its greatest diameter just through the superior strait, but in spite of magnificent pains the os remained rigid, and no further advance occurred, while the patient's irritability steadily increased, until she reached a state of almost maniacal excitement, and at 10.30 A. M., during the acme of a pain, a marked twitching of the hands and eyelids was observed.

Ether was at once administered and forceps applied. The extraction of the head was slow and rather difficult, and the size of the shoulders caused a somewhat long delay. The child was a girl, living, 10½ pounds in weight, naked. Its delivery was followed by the escape of about a quart and a half of liquor amnii.

The uterus, though firm, was very large, and a moderate hemorrhage at once started up. The placenta was extracted manually, and the uterus was found to be in a condition of firm contraction, with but little retraction; that is, the uterine walls were firm and thick, the anterior and posterior walls lying in contact, but the intra-uterine space was more than large enough to contain the expanded hand. Moderate hemorrhage continued, and a piece of ice was passed into the uterus; but, as this was not expelled, a corrosive douche at about 110° F. was substituted for it, with an equal absence of effect. The uterus was then freely massaged between the hands, one being applied to the abdomen externally, and the

¹ Read before the Obstetrical Society of Boston, April 14, 1888.

other inserted into the posterior cul-de-sac. Under this treatment the uterus slowly and gradually shut down and the hæmorrhage ceased, after lasting about ten minutes, the loss of blood being considerable (perhaps from twelve to fifteen ounces). This condition is rare, and was, I think, undescribed until Matthews Duncan reported a case in the *London Lancet* for October 15, 1887. It is probably associated, as a rule, with previous extreme distension.

The patient recovered from the ether in fair condition, and did thoroughly well till the fourth day, when she became rapidly oedematous, the swelling of the eyelids in especial being so great as to almost close the eyes. She complained of intense frontal headache, and the amount of urine had suddenly fallen from three, to one and one-half quarts in the twenty-four hours. It was rather dark, specific gravity 1020, albumen a trace, no casts detected. The skin was moist and the thirst great.

She was ordered to drink large quantities of water, to take an ounce of Epsom salts in divided doses during the evening, and to promote sweating by warm coverings, and, if necessary, by heaters. During the night she sweat profusely, had ten watery dejections, drank two quarts of water, and passed about a quart of much lighter colored urine, and by morning the headache had disappeared, the oedema was greatly diminished, and she said that she felt well. Free ingestion of water was kept up, and a saline was occasionally administered, and by the seventh day of the puerperium the oedema had disappeared, and the urine had returned to its usual quantity of three quarts, and to its usual light color and low specific gravity.

The remainder of her convalescence was rather slow, and was marked by several slight and transient attacks of oedema, which yielded readily to mild treatment, but at the end of six weeks she appeared perfectly well, and has enjoyed really perfect health from that day to this.

The case seems to me to possess several features of considerable interest. The constant and almost unbearable pain, evidently due to over-distension, and promptly relieved by the escape of a moderate quantity of liquor amnii; the rare and peculiar condition of the uterus post-partum; and finally, the occurrence of marked uræmic symptoms in the presence of a normal and even rather large amount of urine, and this in the case of a woman who is the subject of a habitual and apparently physiological polyuria, with the ready relief afforded by mild treatment, all seem to me to be points well worthy of record.

REPORT ON OBSTETRICS.

BY C. M. GREEN, M.D.

LAPAROTOMY IN EXTRA-UTERINE PREGNANCY.

BREISKY¹ (Vienna) reported a case in November, 1887, which is of great interest as being the only one so far as known, in which, with the child living, the entire foetal envelopes were successfully removed. The child was asphyxiated, but was resuscitated. The sac was found to proceed from the right broad ligament, from which it was separated by numerous ligatures and removed; it was also attached to the mesocœcum,

from which it was peeled off. In extra-uterine pregnancy, the fetus being dead, Breisky advises against too long postponement of operation, lest the foetal sac becomes too firmly attached and therefore more difficult to remove.

TRIPLET-LABOR.

Among 14000 deliveries in the Lying-in Hospital of Brussels there have been three cases of triplets. All three children of the first case remain alive: in the second case the delivery was premature (5 months), and the fetuses macerated. MOERLOOSE² now reports a third case, in which the children were born alive, nursed, and were discharged in very satisfactory condition. The diagnosis of triplet-pregnancy was not made. After rupture of the membranes of the first child, the size of the presenting head seeming smaller than would be expected from the size of the uterine tumor, the presence of twins was suspected, and the detection of several large parts confirmed that suspicion. After the birth of the first child, two others were found in the uterus. The first child weighed nearly three pounds, the second four pounds and the third three and one-sixth pounds.

MORPHIA IN PUERPERAL ECLAMPSIA.

G. VEIT³ (Bonn) recommends the exclusive use of morphia (by subcutaneous injection) in the eclampsia of labor, and ascribes the hitherto inefficiency of the drug to the much too small doses in which it has been given. Beginning with half a grain, one should boldly increase in twenty-four hours up to a grain and a half or even three grains. The apparent success of this treatment, by which during a series of years Veit lost no cases of eclampsia, made him so confident that he announced in his lectures that no one should ever allow a patient to die in eclampsia. But in the last year Veit lost two cases, and he therefore advises in severe cases to make use of hot baths (110° F.) with subsequent wrapping in blankets. Speedy delivery, so far as can be practiced without undue injury to soft parts is always indicated.

[The experience of Veit is interesting, and shows that the morphia treatment, to be successful, must be pursued heroically. It is a fair question, however, how far Veit's success was due to morphia and how far to the "speedy delivery" which he says is always indicated. Certainly speedy delivery under anæsthesia, with subsequent treatment directed to the skin and kidneys, is almost invariably successful; and it is difficult to see how morphia can save a case which does not respond to the above treatment.—REP.]

THE RELATION BETWEEN THE PUERPERAL PSYCHOSES AND PUERPERAL INFECTION.

HANSEN⁴ (Copenhagen) has written a monograph on this subject for the purpose of showing that puerperal infection, to which most modern authors ascribe only an occasionally predisposing significance in common with other causes of the puerperal psychoses, possesses a far greater causal importance. During his service as hospital-assistant, partly in the psychiatric, and partly in the obstetric departments, Hansen collected 49 cases of puerperal psychosis, of which num-

¹ Journal d'Accouchements, 1887, No. 11.

² Centralbl. für Gynäk., 1888, No. 15.

³ Volkman's Sammlung Klin. Vorträge, No. 304.

⁴ Centralbl. für Gynäk., 1888, No. 17.

⁵ Copenhagen, 1888. Centralblatt für Gynäkologie, 1888, No. 20.

¹ Centralbl. für Gynäkologie, 1888, No. 20.

ber he himself observed 21. In these 49 cases there was evidence of puerperal infection in not less than 42; and of these 42 cases not less than 12 terminated fatally. Among the seven cases in which the existence of infection could not be proved, there were two cases of eclampsia with hallucinations of short duration; the remaining five cases were of another nature, pure melancholia, hysterical mania, etc. With the exception of eclampsia the author ascribes to other ætiological factors no great significance, and lays the greatest stress on puerperal infection. The importance of the subject with respect to prophylaxis is evident.

THE EFFECT OF ERGOTIN ON THE INVOLUTION OF THE UTERUS.

BLANC⁵ (Lyon), to test the effect of ergotin in promoting the involution of the uterus *post partum*, took a hundred cases of spontaneously delivered women, and divided them into three groups. To one group he gave ergotin for five days, to another group for ten days, and to the third group he gave no ergotin at all: in all cases the uterus was accurately measured every day. As the result of his observations Blanc concludes that the use of ergotin does *not* accelerate the involution of the puerperal uterus.

THE CÆSAREAN OPERATION AND ITS RELATION TO INDUCED PREMATURE LABOR, VERSION AND PERFORATION IN CONTRACTED PELVES.

LEOPOLD (Dresden) and his assistants have published a monograph on this subject,⁶ based on the rich material of the Dresden clinic.

In Part I, KORN treats of the induction of labor, and gives the statistics of 45 cases in which labor was induced on account of pelvic contraction. In 35 cases the mothers convalesced without fever; in 9, there was fever for from one to three days; there was one death from sepsis. Korn is of the opinion that in the generally-contracted flat pelvis down to 3 inches in the true conjugate, and in pelves without transverse contraction down to 2.8 inches c. v., the indication is to induce labor, and that in the 32–36 week: if this time has passed, the case is to be left to nature, and, if the natural forces are ineffectual, resort should be had to podalic version and extraction (by forceps if necessary, and failing thus by craniotomy to the after-coming head).

On this last point Löhmann writes at length, from a material of 5,916 cases, in which internal version was performed 107 times. In cases wherein the conjugata vera of the brim does not fall below the measures above given, that is, 3 inches in the justo minor, and 2.5 inches in the simple flat pelvis, Löhmann advises leaving the case to the natural forces, if the child is of only medium size. If operative interference is found to be necessary, then version, manual extraction, forceps or craniotomy, as may be necessary. If the child is lost by this method of procedure, the next time he would induce premature labor.

PRÄGER reports 71 craniotomies performed in the Dresden clinic within the last four years, and is persuaded that craniotomy performed under rigid asepsis has shown far better results than the antiseptic Cæsarean section.

LEOPOLD contributes the section on the Cæsarean operation, and critically describes the 23 cases performed in his clinic in the last four years. He then raises the question whether we are to-day justified in putting this operation before and in place of perforation of the living child, or in what cases this is necessary. He would have it believed that laparotomy is, and must remain, a serious operation, even in the most practised hands: and while it is a great thing to save both mother and child, still if all the conditions of success are not fulfilled, one ought to resort to early perforation. The following table shows the results in Leopold's clinic of each of the methods under consideration:

Operation.	Maternal Mortality.
Induced premature labor	2.2 per cent.
Version and extraction	4.8 "
Craniotomy	2.8 "
Cæsarean operation	8.6 "

The mortality from sepsis alone was:

After induced labor	2.2 per cent.
" version and perforation	0.0 "
" perforation	0.0 "
" Cæsarean section	4.3 "

The percentage of living children discharged from the clinic was,—

After induced premature labor	66.6 per cent.
" version and extraction	59. "
" Cæsarean section	87. "

[Leopold's teaching is eminently conservative and will tend to check, it is hoped, a growing *favor operativus* in favor of the Cæsarean operation. Leopold has done much to bring this operation to its present high state of success, and reports a maternal mortality of only 8.6 per cent.; as 4.3 per cent. of fatality is attributable to sepsis, it is probable that this per cent. will be considerably reduced. It should be remembered, however, that Leopold's cases were carefully selected, and operated on in a well-equipped hospital, with all the conditions of success fulfilled. To undertake the operation after long delay, and after futile attempts at delivery by other means is reprehensible, does not deserve success, and seldom attains it. It is the duty of the obstetrician to acquire the art of accurate pelvimetry, and thereby establish the probabilities of success by different operative measures. When cases are seen sufficiently early, the induction of premature labor (with the modern improved methods for the care and feeding of premature infants) holds out gradually increasing prospects of success. In cases not seen until full term, while version and extraction succeed in very many cases of moderate pelvic contraction, the operator occasionally has to choose between the Cæsarean operation and the perforation of a living child. It is proper in such cases to let the patient and her friends decide; but the imperative duty of the medical attendant is *not to lose time*; to recognize early the probabilities of the case and to perform early the elected operation before conditions arise that jeopardize success by any operation. Cæsarean section is not a difficult operation, and if performed *early*, with rigid asepsis, and with accurate uterine suture, it ought to be successful in careful hands in a large per cent. of cases; but, as Leopold points out, it is a serious operation, and should not be undertaken, even by practised hands, unless the patient elect to run a greater risk herself rather than to acquiesce in the destruction of foetal life. — REP.]

⁵ Lyon Mediale, 1877, August 7. Centralblatt für Gynäkologie, 1888, No. 17.

⁶ Stuttgart, 1888. Centralbl. für Gynäkol., 1888, No. 19.

Clinical Memoranda.

A CASE OF PURULENT, PUERPERAL PERITONITIS, SUCCESSFULLY TREATED BY INCISION AND DRAINAGE.

BY SAMUEL B. WOODWARD, M.D., WORCESTER, MASS.

Mrs. M., a young American woman, had a short and easy labor with her second child early in November, 1887. A chill, four or five days later, was the first sign of impending trouble. For several weeks there was continual fever, profuse sweating followed by dryness of the skin and progressive emaciation, and towards the end of that time, abscesses appeared in the lower left arm, all nourishment was vomited, and the general condition became desperate.

Late in the evening of December 7th, she complained of sudden sharp pain in the abdomen, and showed signs of collapse. Dr. T. H. Gage was called in consultation by the attending physician, and on examination found a largely distended abdomen, which was flat on percussion with the exception of narrow spaces in each flank and below the ensiform cartilage. The left side of the abdomen was much larger than the right. Fluctuation was marked, the wave reaching entirely across the belly. Near, and to the left of the umbilicus, was an irregular prominence which suggested the pointing of an abscess.

The lateness of the hour, and the condition of the patient, prevented action at that time, and as Dr. Gage could not attend to the case the next day, he advised that I should be called in to aspirate the abdomen. I therefore saw the woman for the first time the next afternoon.

She was extremely emaciated. The tongue and teeth were covered with sordes. The skin was dry and harsh, and peeling from the body in large sheets (I was shown almost complete casts of the fingers and palm). The odor in the room was something to remember. The pulse was 130, and very weak; the temperature, 103°. The bowels were constipated; a small amount of bloody discharge flowed from the vagina. The uterus was with difficulty reached by the vagina being pushed far forward. Its size could not be determined. There was no marked bulging in the posterior cul-de-sac. The abdomen was irregularly distended, the left side being much more prominent than the right. Flatness on percussion extended over the entire left side, reaching to an imaginary line drawn from the pubes to the ensiform cartilage, about an inch and a-half to the right of the median line. There was no diminution of dullness in the flanks. Fluctuation was marked over the dull area. The right side of the abdomen was abnormally tympanitic with the exception of the flat area above noted near the median line, and another in the right flank. In the region of the cæcum, and along the descending colon could be felt several of the so-called "lymph cakes." There was little or no abdominal tenderness. No nourishment had been retained since the previous day, the patient vomiting at frequent intervals.

Little or nothing was to be gained by aspiration in this state of affairs, and laparotomy was advised. I was obliged to wait until the next day when Dr. Gage could be with me. December 9th, he examined the patient with us, noted the changes that had taken place, and agreed to a moderate incision, to be enlarged if it should seem advisable.

Accordingly, an incision two inches long was made, some four inches above the middle of Poupart's ligament, on the left side, and over three quarts of extremely offensive pus evacuated. As far as possible the operation was made aseptic. The abdomen was scrubbed and disinfected, as were the operator's hands and instruments. All hemorrhage (which was rather free), was checked before the peritoneum was opened, and the abdominal cavity was washed out with large quantities of a saturated solution (1-1100) of hydro-naphthol, after which a rubber drainage-tube was carried down, as far as possible, behind the uterus, and the abdomen dressed with bichloride gauze and absorbent cotton.

I was, however, obliged to operate with the patient in bed, where she had been, almost without change, for several weeks, and in a room thoroughly saturated with septic matter, and was also obliged by her condition to suspend the washing out of the abdomen, while the wash-water was still turbid with pus. That night the temperature was 102.2°, the pulse 120. The dressings, which were saturated with pus, were changed. The patient was too weak to be further disturbed.

December 10th. The temperature was, in the morning, 99.5°. The abdomen was thoroughly washed out with several quarts of boiled water. Estimated amount of pus one pint. The patient had slept well. There had been neither nausea nor vomiting. The evening temperature was 100°; pulse 104. Everything was soaked with purulent fluid. The abdominal cavity was washed out as before.

December 11th. There was a very slight discharge at the morning washing, and about two ounces at night.

For the next five days the abdomen was washed out once daily, the amount of discharge being at the end of that time insignificant. During this time the temperature was normal; the patient began to take nourishment and to gain in strength; Constipation, which had been obstinate was relieved, to be followed by relaxation of the sphincters and involuntary movements.

December 18th. The temperature rose to 100°, and a small abscess was found in the left labium majus, and another in the left lower arm. After these were opened, the temperature fell to normal, and was not again elevated. The tube was retained in place seventeen days, perhaps several days longer than was necessary. The patient is now, five months later, in good health.

Circumscribed collections of pus in the peritoneal cavity after confinement, have been frequently found and successfully evacuated, but rarely after attaining the size here noted, and still more rarely after invasion of the general cavity of the abdomen. This invasion undoubtedly dated from the sudden collapse of Wednesday, and it was not until thirty-six hours later that the operation was performed. Abdominal examination showed so much diminution in the size of the abscess that much purulent matter had evidently escaped into the general cavity, but in the patient's almost moribund condition had probably started up but a subacute inflammation there.

The patient's condition at the time of the operation was so poor, that systematic laparotomy was rejected, and it was only as a last desperate resort that anything was attempted.

AN APPLIANCE TO PREVENT MASTURBATION.

BY EVERETT FLOOD, M.D., BALDWINVILLE, MASS.

ONE patient, a bright youth of seventeen, turned up this year at our Hospital Cottages, who kept himself from masturbation when not asleep, but often awoke to find himself accomplishing the act, much to his chagrin. He was an epileptic, presumably from this excess, which had become fastened upon him four years before. There was no other cause known. He was having thirty or forty seizures some days, the most of them being an ectasis of from ten to forty seconds' duration. He clinched his hands tightly, sometimes raising them above his head, and again pressing them tightly into the bed on which he sat, assumed a broadly smiling expression, but with mouth closed and eyes open, trembled a little just as a person often does as he finishes a gape raised his feet from the floor a few inches both together, and suddenly resumed consciousness and his natural position.

Under treatment, dietetic and medicinal, he improved; and after his masturbating was entirely ended, the spasms did not recur, and have been absent for nearly three months.

The mechanical appliance used to assist his resolution was a plaster bandage applied as follows: A sheath of oil-silk was first made, to cover the penis and project an inch beyond, the limp organ hanging down straight between the thighs; then a layer of cotton wadding covered in the scrotum and buttocks, leaving a triangular opening, three inches on each side, for defecation. The plaster bandage then covered all, and went down around the penis and up about the waist, making, when hard, a complete casing, so that the boy's genitals might have been in the next county for all the sensation his hands could communicate.

He managed very well at stool, suffered no chafing from the edges between the thighs, walked freely enough (though he could not take full-length steps), and urinated while standing and holding the vessel under the projecting oil-silk. He surely did not masturbate.

He soon acquired a confidence that was comforting, and his self-respect began to improve. After a few weeks he felt tolerably safe; and, as the bandage had become soiled in places, and was rather disagreeable in consequence, it was removed, and has not yet been reapplied.

There seems to be no reason why such cases may not wear a similar appliance any length of time and with perfect protection. The writer trusts that this method, if not already in use or condemned as useless, may prove of service to others.

Therapeutical Memorandum.

ANTIPYRINE AS AN ANALGESIC.

BY RUFUSE L. FIBBE, M.D.

FOR the past six months, observations upon the use of antipyrine have been made at the Adams Nervine Asylum.

In twenty-six cases its value as an analgesic or hypnotic has been more or less fully demonstrated. Headaches of a purely neuralgic character have been

wholly or in part relieved. Those dependent on digestive disturbances have failed of any noticeable improvement from its use.

Patients with sensation of heat and fulness in the head, flushing of the face, and headaches preceding or attending catamenia, have been benefited.

Of twenty-two cases of headache, eleven were relieved, seven partially, and four not relieved, three of the latter class having but one exhibition of the drug.

Intercostal neuralgias, pain about the joints and heart, have also been relieved. In some patients, antipyrine, by diminishing the intensity of the pain or relieving it, allowed them to sleep, while in others it seemed to directly induce sleep.

One patient, having used morphine before admission for headache, received considerable benefit from antipyrine as a substitute, so that the use of the morphine was wholly given up. Unlike morphine in its after-effects, antipyrine also does not require increasing doses, and in many cases of headache or moderately severe pain nearly as satisfactory results can be obtained, but in extreme cases it is less reliable. No unpleasant effects, like cardiac depression or collapse, have occurred in any case.

Some patients prefer antipyrine to any other remedy, partly because of relief from pain, and partly because of its agreeable effect. One patient enjoying the slight sweating which followed its use.

When first used, ten to fifteen grains in solution were given, and occasionally repeated in a few hours, if needed. Later, fully as good results have been obtained from four or five grains every half-hour till three to five doses are taken, as required. A few patients take it at evening when needed, one in particular every night. Another obtained immunity from pain on two grains, *i. e.*, and preferred it to any thing else. No hypodermics were given.

Thus, from the above, we seem to have in antipyrine a partial substitute for morphine in relieving pain without deleterious effects, and one whose action is more or less certain.

Reports of Societies.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

C. M. GREEN, M. D., SECRETARY.

APRIL 14, 1888, the President, DR. WILLIAM L. RICHARDSON, in the chair.

DR. EDWARD REYNOLDS reported

A CASE OF LABOR WITH THREATENING SYMPTOMS.¹

DR. BOARDMAN pointed out the distinction between contraction and retraction, believing it to be imperfectly understood and appreciated. The patient is not safe from hæmorrhage until the uterus has been reduced to its proper size by retraction of its musculature.

DR. J. C. MUNRO, a guest, raised the query whether the process of retraction may not have been interfered with by an hydramic infiltration of the uterine muscle. May not a serous infiltration of the uterus exist to such a degree that retraction cannot take place until many contractions of the uterus, in-

¹ See page 30 of the Journal.

duced by massage or otherwise, have expressed the fluid?

DR. J. P. REYNOLDS did not see why any distention of the uterus might not make it difficult for retraction to take place, even without any infiltration. He is always impressed by the alarm felt by some men at the rhythmical contractions and relaxations of the uterus *post partum*: such phenomena are quite normal and essential to the process of retraction.

DR. C. P. PUTNAM, a guest, asked the reader if in this case the uterine wall felt oedematous. The reply was in the negative: the walls felt firm, and the uterus ultimately became hard and globular, and was below the symphysis on the tenth day.

THE PRESIDENT asked what symptoms there were of uræmia. The reader replied that oedema of hands and eyelids, frontal headache, return of nausea, changed temperament and vision, and twitching of the eyes and hands when the pains came on certainly suggested that condition.

The President did not recognize oedema as in any way pointing to uræmia. He would not have been concerned at that semblance of symptoms, if the urine was abundant. He had seen cases of convulsions in which the urine was said to be abundant, but had found on catheterizing only a slight amount. He had never seen eclampsia occur when there was any amount of recently secreted urine in the bladder; but it should be remembered when in an eclamptic urine is found in the bladder, that the patient may not have passed water for some time, and that no urine may have been secreted for some hours. Hydræmia is not an uncommon cause of eclampsia from pressure; and the urine always shows some disturbance of the kidney.

DR. BLAKE queried whether convulsions might not occur from intensity of pain, with no concomitant uræmic symptoms.

DR. J. P. REYNOLDS quoted a case in which the patient had eight convulsions, and yet her urine had been ample. He would not feel easy with such an array of symptoms as the reader's case presented, as the amount of urine might suddenly fail. Moreover, with eclampsia threatening, any sudden shock, even a sharp word, may serve to induce the convulsive seizure.

DR. ROTCH reported

A CASE OF NOMA,

and presented for the inspection of the Society a photograph of the disease taken on the last day of the patient's life.

A girl, aged four years, entered Dr. Rotch's service at the City Hospital, July 5, 1887, with measles. Up to within two weeks of entering the hospital the patient had had an attack of pertussis of rather long duration. When convalescent from the measles, about July 7th, the child began to lose her appetite and to have a cough, which soon developed into an acute catarrhal pneumonia. The urine was reported as normal at this time.

July 24th there was found to be very little improvement in the pneumonia, and the child was very weak and emaciated.

July 25th the right cheek began to swell, and a bad odor to come from the mouth, but nothing especial could be found in the mucous membrane of the buccal cavity.

July 29th the swelling of the cheek had increased, there was oedema of the lips and eyelids, so that the right eye was partially closed: the swelling was semi-fluctuating: the right nostril was apparently closed. The temperature at this time varied from 102 to 103. The cough was much lessened.

July 30th, a bluish-black patch the size of a cent was found at the right corner of the mouth, and this rapidly increased during the day.

August 1st, the dark-colored area had increased considerably in size, and presented a circular outline, with a clearly marked line of demarcation: the child was stupid, and had a profuse greenish diarrhoea.

August 2d. Extreme emaciation and rapid extension of the colored area, which involved the whole of the right cheek, right side of mouth, and right nostril, but no loss of tissue. Died suddenly.



Radical treatment of the case was deemed inadvisable on account of the hopeless condition of the patient at the time when it was possible to make a diagnosis.

In answer to questions from the members, Dr. Rotch stated that the disease was very rare, that it occurred in girls much more frequently than in boys, and was most apt to develop in a moist climate: that it is not known to occur in nurslings; and most frequently is found between the ages of two and twelve: that it was essentially a disease which developed in children reduced by, or convalescent from, severe diseases: that mercury probably had nothing to do with the etiology of true noma: that the disease was almost always unilateral, and was apt to start at the corner of the mouth: finally, that purulent and even gangrenous infiltration of the lungs and a catarrhal condition of the intestines, apparently caused by the offensive discharge in the mouth, and posterior nares, are frequently found.

Dr. Rotch also spoke of the difficulty of making an early differential diagnosis from cases of gangrenous

stomatitis, where, if the case was one of real noma, the actual cautery was indicated at once.

DR. C. P. PUTNAM, a guest, expressed his interest in so rare a case, he never having seen a case in America, nor heard of one in this vicinity. He saw one case in Vienna; in that case the slough dropped out and left a hole in the cheek.

DR. SINCLAIR remembered a case that Dr. Perry had reported thirty years ago, following scarlet fever.

DR. ELLIOT had recently seen a case at the Massachusetts General Hospital: there was a greenish patch on the side of the child's mouth. The patient was in fairly good condition, and was to be operated on. He believed that Dr. R. H. Fitz regarded noma as of parasitic origin.

DR. HENRY JACKSON, a guest, had found reported in Dr. J. B. S. Jackson's cases two cases of noma, both following acute exanthemata.

DR. ABBOT had had one case of noma following measles, in a child under two years of age. The disease began on the gum on the right side, and the child died in a week. It had been thought at the time that the disease was consequent upon mercurial treatment; but there was no other evidence of mercurial poisoning, and he could not believe in such an origin of the affection.

DR. GREEN reported the following case of a

FOREIGN BODY IN THE FEMALE BLADDER SIMULATING STONE.

The patient was a young woman of previous good health, who for some time past had suffered with frequent and painful micturition. There was almost constant pain through the bladder, which was increased by motion, especially in riding, or in walking on uneven surfaces, as in stepping from the sidewalk to a street-crossing. Occasionally particles of gravel were voided, and rarely, minute clots of blood. Examination of the bladder proved very difficult, as the urethra was exquisitely sensitive; but a silver female catheter was passed, and the urine thus obtained found to be alkaline and of strongly ammoniacal odor. On manipulation the catheter was felt to pass over a gritty mass, which on subsequent bimanual examination appeared to be about the size of a hen's egg. No click was elicited by the impact of the catheter; but from the symptoms and other facts mentioned, a diagnosis was made of vesical calculus. After some preliminary treatment the patient was etherized and a lithotrite passed into the bladder to crush the suspected stone; but repeated attempts failed to enable the operator to grasp the stone, for on closing the lithotrite it seemed to grasp only the bladder wall, and finally the operation was abandoned. Thorough washing of the bladder, however, brought away much sand and several small pieces of calcareous substance, and it was decided to wash the bladder daily with a solution of boracic acid and await further developments, in the belief that what had been taken for a stone must be one or more masses of calcareous matter adhering to the bladder wall.

For four days the patient was much better, and daily washings continued to bring away gritty particles. The next day, however, the urine was very offensive and contained blood and mucus: the patient was unable to sleep on account of pain and vesical tenesmus. It was then decided to dilate the urethra and explore the bladder with the finger: this being

done, the originally suspected stone was found to consist of a soft rubber catheter, coiled up to the size of a hen's egg, and thickly coated with calcareous deposit. This it was which was caught in the lithotrite and gave the sensation of catching the bladder wall. No incontinence followed the dilatation of the urethra, and the patient made a very satisfactory recovery. She denied all knowledge as to how the catheter came to have been left in her bladder, and expressed great indignation that some doctor should have been so unskillful; but from my observation and subsequent knowledge of the patient I have no doubt that the catheter had been used either by herself or by an abortionist for the purpose of interrupting a supposed pregnancy, and had been ignorantly passed into the bladder and lost there.

DR. ELLIOT spoke of a case in which, having dilated the urethra, he had found calcareous masses plastered over the bladder wall, and which he was unable to remove with the finger. He therefore crushed off the masses with the lithotrite, but had great difficulty in washing out the bladder: he finally found that the evacuator was clogged with pieces of twisted paper which proved to be fragments of a paper lamplighter. The lamplighter had evidently been passed into the bladder by the patient and had become the seat of calcareous deposit and subsequently adhered to the bladder wall.

Dr. Elliot suggested that for purposes of digital examination the female bladder should be empty of urine, the finger can then palpate the whole surface. In regard to the use of the lithotrite in such cases, the instrument should be held in a perpendicular position, otherwise it hits the uterus.

In the case alluded to, recovery was speedy, and there was no incontinence: he had used for dilating the urethra, first, Hank's dilators and then the finger.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

CHARLES F. STRONG, M.D., SECRETARY.

MEETING, April 2, 1888, Dr. F. C. SHATTUCK in the Chair.

DR. BUNDY presented a paper upon

TWO CASES OF GRAVES'S DISEASE.¹

DR. VICKERY expressed his pleasure at hearing the favorable result of these cases as in his experience the prognosis was very unfavorable.

DR. G. L. WALTON said that he quite agreed with Dr. Vickery as to the ultimate prognosis of these cases; they recur in all their severity and at short notice, even when improvement has been continuous and steady. Excitement, or any cause such as tends to bring on neurasthenia and other neuroses, will often outweigh the most painstaking and temporarily successful therapeutic efforts. Still, even temporary improvement in the symptoms is grateful, and sometimes the improvement is persistent enough to almost give promise of permanent relief. We are therefore impelled to make every effort. He was pleased that Dr. Bundy had mentioned electricity as one of the apparently effective means among those employed, for its application had seemed to him very valuable. The

¹ See page 27 of the Journal.

galvanic current, not very strong, nor with long-continued sittings, but regularly and continuously applied, he had found most effective. Rapid changes in the current were to be especially avoided, since these patients were even more susceptible to disagreeable cerebral effects of sudden galvanic shocks than the average patient, resembling in this respect the neurasthenic, who is liable to become dizzy and to suffer from headache after comparatively small doses of galvanism, when applied to the head or sympathetic. In this connection he was glad to notice that Dr. Bundy had laid stress on the neuropathic history, and nervous tendency of these patients. This is a feature of Basedow's disease, liable to be overlooked in making the diagnosis; we look for the rapid pulse, the exophthalmos, and the enlargement of the thyroid, of which not all are in every case present, while the nervous irritability is often, at least, as well-marked a symptom as either of the other three. He remembered a case which he had at first mistaken for neurasthenia: the patient was a thin spare man with an anxious expression, and with quick, almost choreic movements; he complained of sleeplessness, inability to work or think, loss of memory, and general mental irritability and depression. The eyes were not noticeably prominent: the pulse was rapid, 120 to 130, but this did not attract especial attention, as it is not infrequent in neurasthenia, to find such a pulse during the excitement of an examination by a new physician. The enlarged thyroid was discovered later, which changed the diagnosis and modified the treatment materially. This patient showed marked improvement under the use of galvanism. The coincidence of mental irritability and other cerebral symptoms with the thyroid enlargement may throw some light on the pathology of neurasthenia, inasmuch as the thyroid enlargement is manifestly due to vaso-motor disturbance. It seems therefore, that the neurasthenic symptoms may, perhaps, depend on similar disturbances in the brain. It is true that the terms cerebral hyperæmia and anæmia have fallen justly into comparative disuse, but it seems not unreasonable to suppose that a weak and irritable sympathetic may cause functional cerebral disorder by impairing the regularity of blood-supply to the nerve-centres.

Dr. F. C. SHATTUCK alluded to a case of complete recovery spoken of by Flint, in his "Practice of Medicine," and said that though he had never been so fortunate as to encounter such a favorable result he had seen marked and very gratifying improvement. The constant current applied to the cerebral sympathetic he has seen exert marked effect on the exophthalmos, but of no service for the cardiac symptoms.

Of late, it has been stated by Vigouroux, that an early symptom of Graves's disease is a marked diminution of the resistance of the body to the electrical current; if this observation prove to be correct we shall thus acquire a valuable diagnostic sign of early and improperly-developed cases.

The theory that the pathology of the disease consists in an irritation of the sympathetic, does not seem tenable; while this theory may explain the rapid action of the heart and the prominence of the eyeballs, the dilated vessels of the thyroid gland are indications of a paralysis rather than an irritation by the sympathetic.

The reader spoke of the bruit heard in his case over the thyroid, as systolic at times; in those cases which

have come under the observation of the speaker, the murmur has been continuous. It seems probable that a number of cases in which only two of the three cardinal symptoms are present, and those not very strongly marked, escape recognition. A patient recently under observation had suffered for years from recurrent attacks of acute and subacute articular rheumatism, resulting in disease of both the aortic and mitral valves. About a year ago she had an hemiplegic attack, presumably due to embolism, and since then has presented a variety of vaso-motor symptoms. The eye balls are prominent and the innervation of the heart is much more seriously impaired than the condition of the valves and cardiac wall would seem to warrant.

Dr. JELLY referred to the case of a lady of twenty-five, coming from an insane family, who presented typical symptoms, but for the last eight years she has been well; the eyes are still slightly prominent, but the heart gives no trouble and the thyroid is all gone.

Dr. JELLY reported

A CASE OF TETANY; A CASE OF GENERAL PARALYSIS OF TEN YEARS' DURATION; DEATH FROM HEART DISEASE.²

Dr. WALTON said that he was especially interested in the case of tetany as it showed an analogy between this disease and hysteria. That such an analogy existed was already evident from the character of the convulsions, their approach on mental excitement, their complete disappearance without further sequelæ than the lameness of the muscles affected, and by the manifest absence of organic disease of the central nervous system. The allied nature of the hysterical convulsions and those of tetany, was brought out with striking force, however, in Dr. Jelly's case, by the appearance later, in the same patient, of typical hysterical seizures. The spasms, which were the principal feature in the case, could certainly not, however, be named hysterical, the biting of the tongue alone would almost preclude that diagnosis, to say nothing of the typical contractures, which corresponded perfectly with those of tetany.

PROCEEDINGS OF THE GERMAN MEDICAL SOCIETY OF PHILADELPHIA.

CHARLES L. WEED, SECRETARY.

MAY 14, 1888, VICE-PRESIDENT LAWRENCE WOLFF in the Chair.

Dr. CARL SEILER read a paper on

HYPERTROPHY OF THE TONSILS.

He opened his remarks by stating that as yet we did not know whether the tonsils performed any physiological function or not, but that the view was prevalent that these organs were residuary, and of no use in the economy. He stated, further, that in the normal condition they were invisible, and became visible only by a hypertrophy of their tissue. This view had lately been forcibly expressed by Dr. Daly, of Pittsburgh, and found a proof in the fact that even when slightly hypertrophied in youth, they usually disappeared at the age of twenty-five or thirty years. They had no connection whatsoever with the genito-urinary apparatus, as had recently been asserted.

² See page 25 of the Journal.

After briefly describing the minute anatomy of the tonsil, the lecturer entered upon the subject proper, and said that we could recognize three distinct varieties of hypertrophied tonsils: first, the ordinary soft hypertrophied tonsil, most commonly met with in childhood and early youth, and rarely found in adult age. This variety is characterized by simple enlargement of the tonsillar tissue, with a corresponding increase in the size of the crypts, which latter mostly contain plugs of white, cheesy secretion. This secretion in some cases becomes putrid, and emits an extremely disagreeable odor. This simple hypertrophied tonsil is frequently the seat of periodical, acute inflammation, which may or may not produce parenchymatous suppuration. Coexisting with this chronic tonsillar hypertrophy, we usually find a chronic nasopharyngeal catarrh, and more or less hypertrophy of the pharyngeal tonsil. These conditions give rise to a variety of symptoms, the most prominent of which are interference with proper vocalization and articulation, insufficient aeration of the blood, gastric disturbances, and frequently, catarrh of the middle ear.

The second variety is the so called scirrhus tonsil, first mentioned by Dr. Jarvis, of New York, which is characterized by a smooth, exterior surface and a hard, cartilaginous feel to the touch of the finger or probe. The crypts are usually not enlarged, and, if so, rarely contain the cheesy secretion. This variety of hypertrophied tonsil is met with usually in young adults, and is rarely, if ever, the seat of acute periodical inflammation. The hardness is imparted to it by a deposit of connective tissue between the cellular elements, and particularly around the bloodvessels, canalizing them and thus depriving them of their contractility. They interfere by their presence with vocalization and articulation, and naso-pharyngeal catarrh, as well as chronic laryngeal inflammation, frequently coexist with them.

The third variety may be called the ragged, hypertrophied tonsil, and is nothing but the result of the first variety having been the seat of frequent tonsillar abscesses, which have caused parts of the tissue to slough away, leaving a ragged mass of tonsillar tissue between the faucial pillars. It is usually found in young strumous adults, and is, perhaps, the most dangerous to the general health, inasmuch as it gives lodgment to septic material, and thus in many cases produces chronic septicæmia.

Dr. Seiler then entered into the consideration of the treatment of hypertrophied tonsils, and said that in all cases the offending masses should be removed, but that the method by which this was to be accomplished should be carefully considered and adapted to the requirements of each individual case. All chemical caustics applied to the surface of the tonsil were worse than useless, as their application gave rise to a great deal of pain, and had to be kept up for a considerable length of time to produce any results at all. In the ordinary soft variety, the tonsil was best removed by ablation with the tonsillotome. Care should, however, be taken not to wound the edge of the anterior pillar, because a small branch of the tonsillar artery runs close to this edge, and, when cut, gives rise to hæmorrhage difficult to control. If the anterior pillar is adherent to the tonsil it should be loosened, and if this is not possible, owing to the bands of fibrous tissue connecting the pillar with the tonsil being too strong to be torn, the tonsillotome cannot be used with any

degree of safety, and the galvano-cautery knife should be used. After the projecting portion of the tonsil had been ablated, the cut surface should be brushed over with a sixty-grain solution of nitrate of silver to cause contraction of the capillaries and to cover the wound; and any secondary hæmorrhage, which, however, rarely occurred, should be controlled with a strong solution of tannic and gallic acid used as a gargle. The old method of removing the tonsils with the volcillum and bistoury, the lecturer said, was unsafe, as the edge of the anterior pillar, even when not adherent, was too easily wounded by the heel of the knife. Total extirpation and enucleation was also dangerous, besides being unnecessary, except in the extremely rare cases of cancerous growth in the tonsil.

The safest and only applicable method of removing hypertrophied tonsils in cases of ragged tonsil was the galvano-caustic. In applying this method, the galvano-cautery knife should be heated to a bright-red heat, and should then be pressed into the tissue of the tonsil by entering one of the crypts and cutting with it from within outward, so that the eschar resulting from the burn can easily fall off, and does not become impacted in the tissue of the tonsil. This procedure, Dr. Seiler said, did not give rise to any pain, and should be repeated at intervals of a week or ten days, and from four to six applications usually sufficed to reduce the tonsils to a size compatible with health and comfort of the patient. Under no circumstances should any operation for the removal or reduction of hypertrophied tonsils be undertaken while the organ was in a state of acute inflammation. In the case of the ragged tonsil, scraping the tonsillar tissue from the capsule with a sharp curette had been recommended, but this method was not only very bloody, but also painful, and on that account the galvano-cautery was to be preferred.

For the removal of the scirrhus tonsil, Dr. Seiler recommended the Jarvis snare as the best and safest instrument. The steel-wire loop should be laid around the enlarged tonsil, and by turning the screw, should be gradually decreased in size until the portion encircled by the wire was cut off. If done slowly, the operation occasioned very little pain, and time was given for the edges of the rigid vessels to become agglutinated, so that little or no hæmorrhage resulted. The best way, he said, was to start the snaring process and then let the patient turn the screw himself, trusting to him that it was not done too quickly; for the patient would tighten the loop until he felt the pain, and would then stop, to begin again when the pain had ceased. The time occupied in thus removing a scirrhus tonsil was from two to three hours.

DISCUSSION.

DR. MUEHLECK suggested that many of the supposed cases of hæmophilia were cases of scirrhus tonsil, in which the canalization of the vessels caused profuse and persistent hæmorrhage after ablation. For this reason he asked the lecturer to definitely state the diagnostic differentiation between the soft and fibrous forms.

DR. VANSANT desired the judgment of Dr. Seiler upon the use of alkalis in acute tonsillitis, especially of sodium bicarbonate and borax. He inquired furthermore whether, after repeated attacks of inflammation, the resulting hypertrophy ever spontaneously disappears. In the matter of diagnosis, it should be

borne in mind, that other tissue changes than simple inflammation and hypertrophy may have their seat in the tonsils. It is a question whether the initial lesion of syphilis would be likely to lead to such error. The cases he had observed presented a mere superficial ulceration without induration. In none of the cases reported by Tchisbriakoff, Peterson, Tomasheosky and Sevek within the past year, was the fact of induration mentioned. He would like to know whether this peculiarity is constant in a lesion in this location.

DR. WOLF had had considerable success in aborting acute tonsillitis by Dr. Seiler's method; namely, by pencilling with a twenty-five per cent. solution of silver nitrate. The attacks were, however, aborted only when the application was made within the first twenty-four hours. Nevertheless, even a later application was generally successful in preventing suppuration, besides giving great comfort to the patient by reducing the tension and pain.

DR. FRIEBIS noted the frequent association of tonsillar hypertrophy and otitis media, but was not clear in his mind whether the same is to be attributed to impeded nasal respiration (mouth breathing), or to the septic influences from the crypts, or to mechanical obstruction of the mouth of the Eustachian tube by the swollen gland.

DR. MILLER, in using the cauterizing knife, had frequently had it stick in the tonsillar tissue, and had caused pain and hæmorrhage by its violent removal. This difficulty was due to a too early shutting off of the current and could easily be avoided. The knife should be hot when applied and removed. He had used the galvano-cautery more often than the guillotine, even in the soft variety, owing to an unconquerable prejudice on the part of the patient against any cutting operation. For the same reason the blade must be heated after it is in the mouth so that the patient may not see it. If both tonsils were treated at one sitting, deglutition would be rendered unnecessarily painful. He treats them, therefore, in alternation, with two sittings per week. He reduces them so that they do not project beyond the pillars, and leaves the rest to cicatricial contraction. A most useful battery for the purpose is that of Dr. Seiler. The method of gouging out the growth with the finger is not only barbarous but dangerous. He would not agree with the lecturer that the tonsils are necessarily in a pathological state when they fill the space between the anterior and posterior pillars, and do not extend beyond them.

DR. WEED quoted the two cases reported by Croly, of primary sarcoma of the tonsil, in both of which, incisions were made to evacuate the supposed abscess. Such an affection might be mistaken for a hypertrophy even more easily than for quinsy, and the guillotine might evoke a dangerous hæmorrhage. In cases of acute tonsillitis the diagnosis is rendered difficult by the fact that a variety of affections have here their local manifestations. Le Gendre considers the tonsil the site of the initial lesions of scarlatina and diphtheria, and Fraenkel calls attention to other varieties of septic infection from this gland. Le Brun looks upon all tonsillitis as infectious, and regulates his therapeutics accordingly. On the other hand, Frœlich reports a group of cases in some of which the tonsil seems to have been the seat of local lesion, although not the point of original inoculation. The first case was one of so-called follicular tonsillitis followed by a fatal

suppurative peritonitis. At the autopsy, Frœlich and his assistant sustained slight wounds with a resulting follicular tonsillitis. A number of the household developed similar symptoms. In addition to the cases quoted by Dr. Vansant, of syphilitic inoculation, are a number collected by Dr. Delavan in the "Annual of the Universal Medical Sciences," just published. There being, therefore, so many varieties of acute tonsillar inflammation, it is idle to vaunt any one remedy as being suited to all cases. The strong solution of nitrate of silver had in the speaker's hands seemed to abort the attacks of recurrent quinsy, or had at least modified the process, but had failed in other forms of inflammation. He was unable to state whether the virtue of the silver salt was in its astringency or in its germicide power. In tonsillotomy for hypertrophy, it is, according to the experiments of Zuckerkandl, impossible to wound the internal carotid without cutting the wall of the pharynx.

DR. SEILER, in closing the discussion, said that the differentiation between the soft and scirrhus varieties of hypertrophy was easily made by the sense of touch, the former being soft and doughy, while the latter was hard and cartilaginous and never occurs before the age of puberty. He believed that an initial lesion of syphilis upon the tonsil was never indurated. This was owing to a poverty of submucous connective tissue. An early diagnostic sign is glandular involvement at the angle of the jaws. The much vaunted alkaline treatment of acute tonsillitis with bicarbonate of soda or borax, had in his experience given no results greater than a temporary alleviation of the pain. The only abortive treatment with which he had had success, was that mentioned by Dr. Wolff. There is no doubt that hypertrophy of the tonsil does sometimes disappear with the advancing age of the patient. This is due to a physiological atrophy of the glands. The periodical attacks of acute inflammation may be prevented by a proper tonic treatment, attention to hygiene, and particularly by ablations of the neck and chest morning and night.

Recent Literature.

Organic Analysis: A Manual of the Descriptive and Analytical Chemistry of Certain Carbon Compounds in Common Use. By ALBERT B. PRESCOTT, Ph. D., M.D., Director of the Chemical Laboratory in the University of Michigan. New York: D. Van Nostrand. 1887.

This volume fully maintains the high standard characteristic of Dr. Prescott's works. The statement in the preface that "for certain common carbon compounds, it has been undertaken to furnish first, systematic chemical description, and thereupon the methods of analytical procedure, qualitative, quantitative, and for proofs of purity, all with liberal citations of the authorities for convenience of further reading," gives but an inadequate idea of the large amount of valuable material which has been brought together in this volume. The following is a partial list of the subjects and compounds treated by the author:

Alkaloids (general article); Alkaloids of Aconite, Cinchona, Coca; The Midriatic, Opium and Strychnos Alkaloids; Ptomaines; Coloring Materials; Ele-

mentary Organic Analysis; Glycerine; Fats and Oils; Plant Analysis; Phenol; Teas of Commerce; and several important Organic Acids, as Acetic (including vinegar), Tartaric (including baking powders), Salicylic, Tannic Acids, etc. All the subjects are treated at considerable length and in the most thorough manner. The sections on fats and oils, and those on the various alkaloids, are worthy of mention in these respects.

To give some idea of the method of treatment adopted by the author, we insert the following table of contents, taken from the article "Opium Alkaloids." List of alkaloids, with description of those of minor importance; chemical constitution. Morphine, yield in opium; crystalline form and heat reactions of the alkaloid and its salts; physiological effects; solubility of the alkaloid and its salts; color tests and limits of each, precipitations; separation from tissues in cases of poisoning, with limits of recovery and organs of deposition; estimation, gravimetric and volumetric, in opium by the several pharmacopœial and other methods, and in tincture of opium by authorized standards; impurities by the pharmacopœial standards in different countries. Narcotine; Codeine; Apomorphine; description, analysis and tests for purity.

Subjects which have not received such thorough treatment in the text are supplemented by references to the most valuable literature on the subject, for convenience of further reading. The bibliography is in fact a characteristic feature, and is so extensive as to add much to the value of the book. The book is not entirely a compilation, however. There is much in it which is the result of the author's own researches and of his many years of experience.

We realize the difficulty in doing justice to a work of this kind in a brief review. The volume certainly represents a vast amount of labor on the part of the author, and is very creditable to him and a distinctly valuable addition to chemical literature. An exceptionally complete index covering thirteen pages accompanies the book. The publishers deserve a word of commendation. The book is well printed, in large type, and on paper of good quality. W. B. H.

The Pathology, Diagnosis and Treatment of the Diseases of Women. By GRAYLY HEWITT, M.D., London. Edited with notes and additions by H. MARION SIMS, M.D., New York. New York: E. B. Treat, 771 Broadway. 1887.

This is the same book which was published in 1883 by Berringham & Co. The only changes which can be discovered are that it now appears in three volumes, and has two short additions to the appendix, one describing a pessary, the other a tube for drainage after laparotomy. Even the American editor's preface is identically the same, except that it is dated April, 1886, instead of April, 1883. The reader must, therefore, not expect anything new; but as the book is a standard one, its purchase may be safely recommended. It was noticed in detail at its first appearance, so that nothing need be added now.

Quiz Compend, No. 4. A Compend of Human Physiology. By ALBERT P. BRUBAKER, A.M., M.D. Fourth edition, revised and enlarged. Philadelphia: P. Blakiston, Son & Co. 1888. pp. 174.

A "quiz" book which has reached a fourth edition doubtless meets a demand among students at least

equal to its merits. This particular compend, despite its brevity, is in general fairly exact, and will not seriously mislead those who have drunk freely from some larger and fuller spring of knowledge. We must, however, express the hope that, at no distant day, a newer edition will revise the description of deglutition (p. 27); drop or explain the "pneumic acid" theory of respiration (p. 60), which has long since disappeared from most text-books on physiology outside of Philadelphia; put the formation of urea (p. 75) in its true light, and state more accurately the nervous relations of the sweat secretion. *Kathellectrotonic* (p. 90) appears to have escaped the keen eye of the proof-reader.

Druett's Surgeon's Vade-Mecum: A Manual of Modern Surgery. Edited by STANLEY BOYD, F.R.C.S., Eng. Twelfth edition with three hundred and seventy-three wood engravings. Philadelphia: Lea Bros. & Co. 1887.

In its new form this well-known work is enlarged to 985 pages. It has been changed from the last edition so extensively that "scarcely a paragraph of the latter remains unaltered." The chapter on the Eye has been replaced by a short description of the injuries of that organ, by Silcock of "Moorfields." Pathology is more conspicuous than in previous editions and a copious index is appended. The chapter on Arteries is more complete than is usual in works of this class, and is quite satisfactory. Seventy-three new cuts have been added, forming an almost complete series illustrating the subject of arterial ligation and representing the wound of operation. Aseptic surgery is advocated but no especial attention is paid to its details except at time of operation. The book is an excellent text-book on general surgery and will prove a valuable one to the student or general practitioner, but a careful perusal fails to show that it possesses any greater value than the best works on this subject now at the disposal of the profession.

The Modern Treatment of Pleurisy and Pneumonia. By G. M. GARLAND, M.D. Being No. 7 of the Physicians' Leisure Library. Detroit: George S. Davis. 103 pp.

The authorship of this brochure is a guarantee that it is well written and doctrinally sound. For the portion which treats of pleurisy we have no word of criticism. Of the forty pages given to pneumonia, only twenty deal with treatment. On page 85 we find: "Cold baths are unquestionably a thing of the past. Even in typhoid fever . . . they have fallen into desuetude." We cannot agree with Dr. Garland here; certainly, as far as typhoid fever is concerned, and if the term cold is inclusive of cool, whole baths have never been very generally used in this country in the treatment of acute febrile disease, and even this limited use was curtailed. We believe that now, however, a slow revival of their use is going on, and that they will be more used in the future. In Europe they have held their place much more firmly than with us. Formerly, they were employed too exclusively with reference to the reduction of febrile temperature, at the door of which all evils were laid.

In so small a book, it would seem to us better not to refer to so many writers, some of whom are by no means authorities. F. C. S.

Guide to the Health-Resorts in Australia, Tasmania, and New Zealand. Edited and compiled by LEUWIG BRUCK. Centennial edition. The *Australasian Medical Gazette* Office, Sidney. London: Bailliere, Tindall & Cox. 1888. pp. 183.

This cannot fail to be a very useful work to Australasians and to travellers from without. Of course, its practical usefulness to us in this country is small, but it is of considerable interest, nevertheless. We Americans are inclined to think that ours is the country, *par excellence*, of material prosperity and rapid growth. Such a book as this is a reminder of what the Anglo-Saxon race is doing to advance civilization at the antipodes. F. C. S.

A Guide to the Practical Examination of Urine. For the Use of Physicians and Students. By JAMES TYSON, M.D. Sixth edition, revised and corrected, with a colored plate and wood engravings. Philadelphia: P. Blakiston Son & Co. 1888.

This admirable manual is too well known to require an extensive notice. The present edition has been carefully revised and has received a few additions rendered necessary by recent advances in the chemistry of the urine. Previous editions of Prof. Tyson's book have been very favorably received, and we predict for the present one an equally cordial reception. It is without exception the best work of the kind in the English language.

Chemical Analysis of Healthy and Diseased Urine, Qualitative and Quantitative. By T. C. VAN NÛYS, Professor of Chemistry, Indiana University, with 39 Wood Engravings. Philadelphia: P. Blakiston, Son & Co. 1888.

This book is devoted especially to the chemistry of the urine, including sediment and calculi. The quantitative part is exceptionally complete for a small manual. The preparation of the standard solutions required for quantitative work and the methods for the estimation of the various constituents of the urine are explained very clearly and with unusual attention to detail. The book is in all respects an excellent one, and as a guide to quantitative urinary analysis has no superior among the smaller works on the urine.

The Student's Guide to Diseases of the Eye. By EDWARD NETTLESHIP, F.R.C.S. Third American from the fourth English Edition, with a chapter on Examination for Color Perception. By WILLIAM THOMSON, M.D., Professor of Ophthalmology in the Jefferson Medical College of Philadelphia. pp. 475. Philadelphia: Lea Bros. & Co. 1887.

This treatise has passed through three editions in this country and four in England and is familiar to most medical students of recent years. It is a most excellent work for the purpose for which it is designed, but in the process of the compression of a large subject into a small space has suffered somewhat, as for instance, when the author entirely omits from his description of Blepharitis any mention of the causative influences of errors of refraction in this disease.

The Refraction of the Eye: A Manual for Students. By GUSTAVUS HARTTRIDGE, F.R.C.S., with ninety-six illustrations. Third edition. pp. 240. Philadelphia: P. Blakiston, Son & Co. 1887.

Perhaps the best criticism we can make on this work is that the third edition has been called for with-

in three years of its original publication. For a practical hand-book of refraction for students it is a most excellent work. Some chapters have been partly rewritten for this edition and the chapter on Retinoscopy has been notably improved.

A Practical Treatise on Diseases of the Eye. By DR. EDOUARD MEYER, Prof. à L'École Pratique de la Faculté de Médecine de Paris, etc. Translated by FREELAND FERGUS, M.B., Ophthalmic Surgeon, Glasgow Royal Infirmary, etc., with two hundred and sixty-seven illustrations and three colored plates. pp. 647. Philadelphia: P. Blakiston, Son & Co. 1887.

This well-known hand-book of ophthalmology which was first published fifteen years ago, has now for the first time been translated into English. The work has passed through three French and four German editions and has besides been translated into Italian, Spanish, Polish, Russian, and Japanese. This book adds another to the already large number of excellent manuals in the treatment of diseases of the eye. The chapters to be especially commended are perhaps those treating of plastic operations about the lids which are carefully and clearly written and profusely illustrated. The colored plates are reproductions from Liebreich's well-known atlas.

Handbook for Young and Old Opticians. A concise and comprehensive treatise on the theory of the optical trade and its mechanical manipulations. By W. BOHNE, Optician, with illustrations. 108 pp. New Orleans, La. 1888.

This book strives to teach the optician the theory and practise of his trade: how to test lenses, cut them, and set them in the frames; how to fit the frames to the face, and to modify the frames according to the use to which they are to be put; how to centre and decentre lenses, etc. Unfortunately, the majority of opticians are sadly in need of just this information. The book is judiciously written and covers its subject very well, and deserves a wide reading among the opticians, as it is the only work of the kind that we have seen. There are several appendices on various topics that could have been omitted without injury to the main work. In one of these the author's picturesque style comes prominently to the front, and affords some diversion after the more serious topics preceding, as the following quotation will show:

"A close observer of the facial expressions of different individuals will find the greatest variety in their delineation, based upon the direction of the axis of vision. In children, this axis is almost constantly parallel, producing the impression of thoughtlessness or of the childish, innocent look. With increasing intelligence, the eyes lose their parallelism by being fixed upon objects of investigation. All the affections of the mind are now manifested by certain motions and positions of the eyes, which become more convergent. The lurking look of the convict on trial, the watchful scrutiny of the over-suspicious, the piercing gaze of anger, the lustful look of the libertine, the rude gaze of the ruffian, and the fearful glare of the maniac, are all modifications of the same act, produced by an increasing convergency of the axis of the eyes."

— An International Congress of Dermatology is to be held in Paris in August, 1889, with Ricord as Honorary President.

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Medical and Surgical Journal.

THURSDAY, JULY 12, 1888.

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VISCERAL DISEASE AND INSANITY.

ACCORDING to Spitzka in a recent communication on the subject,¹ diseases of the gastro-intestinal tract and the appended glands bear a far more important part in the causation of insanity than is usually admitted in text books on the subject. The existence of a so-called "sympathetic insanity" was acknowledged by the ancients; some modern authorities have denied it. Spitzka thinks that the reaction against the view held by the ancients has overstepped the bounds of truth. He cites cases where the visceral disorder and the mental state have clearly had the relation of cause and effect. The stomach is responsible for no little mental depression and alienation. There are, says Spitzka, patients in the practice of every physician, who are as bright and cheerful on peptonized milk as they are unhappy, wretched and tired of life, on fried potatoes and pork cutlets. Many a testy hypochondriac has no other discoverable cause for his mental disorder than a protracted gastric catarrh, and his mental state is a veritable barometer of the better or worse condition of his stomach.

The liver, erroneously regarded as related to melancholia by the ancients, sometimes appears to occupy an etiological relation to mental disorder. In a case referred to by De la Mettrie, the only lesion found after death was an hepatic abscess. Cyr, (as quoted by Spitzka), has reported a number of cases where attacks of hepatic colic were followed by a stupor which almost approached a coma in degree, and acute yellow atrophy of the liver is often accompanied by furious delirium.

Diseases of the peritoneum are exceptionally enumerated among the causes of mental disease, and Bergmann and Barry have published cases where such etiological connection seems to have existed.

Instances have been reported in which rectal disease (as hemorrhoids, cancer, prolapsus), or rectal combined with gastric disease, has produced severe

mental symptoms. "In one such case," says Spitzka, "there was abnormal narrowness of the rectum, and a radical cure followed dilatation of both sphincters." "In another, where the ingestion of hard meat infallibly provoked the attacks (of terror with impulsions to suicide), it was observed that very severe seizures were followed by a diarrhoea which the patient had come to regard as critical."

Cases of hysterical anorexia are cited as instances of a peculiar, perverted, mental condition, coming on about puberty, which, if not caused, is, at least, intensified and modified by the state of the stomach. "A patient of this class develops a slight dyspepsia, and rendered morbidly sensitive by the existing predisposition to nervous disease usually present in the families of such patients, and doubly so by pubescence, she contracts a positive dislike for food. Improper food causes distress, the tonics, appetizing cordials, and chalybeates with which a mistaken therapeutics drenches her, aggravate the trouble, and dislike is metamorphosed into a belief that food is injurious. All the patient's energies are devoted to the end of resisting the introduction of food, and the morbid concentration on self ultimately leads to the development of a full-blown delusion that God has forbidden her to eat. Meanwhile, the stomach, originally, perhaps, but very slightly diseased, ceases to present any signs of gastric catarrh, yet the patient does not resume eating, but goes on living for months and months on an occasional sip of water, tea, or broth, and is visited by crowds of the marvel-loving majority as a so-called 'fasting girl.'"

Much interest attaches to the influence of intestinal parasites on insanity. "That these," says Spitzka, "are competent to provoke a variety of nervous troubles, such as chorea, eclampsia, and epilepsy, is well known; but that there are well-established cases in which actual insanity ensued, is ignored by the majority of recent writers. The rapid cure of the mental disorder following the expulsion of the parasites is the significant proof that the etiological assignment was correct."

The clinical characteristic of insanity due to chronic disease of the digestive tract is depression, but this depression has rarely the emotional depth of typical melancholia. The true melancholic, says Spitzka, is horrified at life, the dyspeptic melancholic is disgusted with it.

Another characteristic of the mental disturbance due to visceral disease is its rapid change in remarkable parallelism with the somatic state.

But the operation of visceral disease in the production of mental disease, Spitzka thinks, is extremely limited if not nearly nil, in persons of previously sound mental health and sound antecedents. But it plays an important rôle as an exciting cause in many neurasthenic and hereditarily predisposed patients. Proper attention to the somatic disturbance is—often, therefore, attended by results which strike the patient as magical. The relief of a gastric catarrh causes the

¹ Medical and Surgical Reporter, June 30, 1888.

disappearance of anxious terrors; a constipation, of morbid fears; the expulsion of worms, of a distressing convulsive or maniacal disaster.

TREATMENT OF CHRONIC DIARRHŒA.

DEBOVE in a recent communication to the Medical Society of the Hospitals, claims great success in the treatment of chronic diarrhœa, especially the tuberculous form, generally so little amenable to therapeutic agents, by silicate of magnesia. This remedy he administers in massive doses, half an ounce to an ounce and a half a day suspended in a quart of milk. As a result of this treatment the diarrhœa disappears completely, and give place to an obstinate constipation.

The silicate of magnesia is known under the name of *talc* or *steatite*. The powder of talc is insoluble, inert, and has not heretofore been supposed to have any medicinal properties whatever. According to Debove, it has sedative properties on the digestive tube similar to those of bismuth, than which it is safer—it promotes the healing of intestinal ulcerations, but seems only to be efficacious by its presence in massive quantities. This substance, Debove says, is readily and rapidly eliminated from the intestines.

MEDICAL NOTES.

—The United States Marine Hospital Service in a bulletin, under date of July 6th, announces, that about the middle of June yellow fever reappeared at Plant City, Florida, and there was one death therefrom, June 22d. Another case in the vicinity, four miles and a half from Plant City, died on the 26th. There have been several mild cases in the village, which contains less than 300 inhabitants, but for the present trains will not stop at Plant City, and it is understood that mails will be delivered at Cork Post Office, five miles west of Plant City. In the meantime, by direction of the Governor, the most active measures are being taken by the president of the county board of health, Dr. J. P. Wall.

—A correspondent writes feelingly to the *New England Medical Journal* of the difference in the facilities for performing operations in city and country. He says: "These men, teaching in the great hospitals here, are great men and great teachers, and far be it from me to take one jot or tittle from their merited honor, but oh, how great are their opportunities! If a big operation is to be done in New York, the surgeon can familiarize himself with the parts by immediate dissection. He is supported by able counsel, aided by trained assistants, and last, but by no means least, he goes into the operation without feeling, if his patient die, he will be looked upon as a sort of semi-murderer; for, if an unfortunate result follow, it is quickly forgotten in the hurry and innumerable death-rate of the great city. But with us, how different!

A great emergency arises—a serious operation must be done immediately, and, at best, one can rarely obtain more than one professional assistant. Oft-times the assistant will be a common laborer, the best light obtainable a pine-torch or a kerosene lamp minus a chimney, and with a paucity of instruments, because too poor to buy a complete outfit, the surgeon gropes his way through delicate tissues till the work is done and the life of his patient is saved. I recall to mind now a case of successful laparotomy done for gunshot wound of the abdomen, and reported at the last meeting of our medical society, in which I am reliably informed the operator had only the assistance of a negro field-hand, and worked solely by the light of a pine-torch."

NEW YORK.

—The Board of Health on the 29th of June, appointed forty-one physicians on the special summer service of the Department, which went into operation on the 5th of July. They are engaged for two months at a salary of \$100 per month, and each physician is expected to spend at least eight hours a day in visiting the tenement-houses of his district. This work is under the direction and supervision of Dr. Moreau Morris.

—On the 5th of July, Sanitary Superintendent Day, sent to the Board of Health a list of twelve tenement and lodging-houses on Mulberry Street, which are overcrowded in violation of law requiring that there shall be at least 600 cubic feet for each occupant; and the Board decided to at once notify the lessees of the tenements mentioned to make the requisite reduction of inmates within five days. It is a misdemeanor to violate the provisions of the law against overcrowding, and the offenders may be punished by both fine and imprisonment. The lessees are also liable, in a civil suit, to a fine of \$10 per day for each day that the overcrowding continues.

—The fifteenth National Conference of Charities and Correctives commenced its Sessions at Buffalo, on July 5th, when the President's address was delivered by Dr. Charles S. Hoyt, Secretary of the New York State Board of Charities. In it the subject of insanity as related to pauperism received extended attention, under the heads of dependence induced by insanity, the elimination of certain insane poor institutions, and immigration and intemperance as sources of pauperism and crime. He expressed the opinion that European countries had been systematically sending paupers and criminals to America, and as a preventive, recommended the examination of immigrants by our counsels and commercial agents abroad, the revision of the Federal immigration law, and its enforcement to prevent the landing of all such paupers and criminals.

—The faculty of the New York Polyclinic have decided to increase the clinical facilities of this institution by establishing a spacious hospital, immediately connected with the College building. It will be opened for the reception of patients in October next.

Miscellany.

PETTENKOEFER AND CHOLERA.

THE *Sanitary Engineer* for July 7th, contains the following excellent criticism on Pettenkofer's last cholera report:

"Under certain conditions of disease, or under the influence of certain drugs, all objects appear to the eye as if seen through yellow or green spectacles. Usually this abnormal vision is only a temporary matter, and soon passes off, but there are cases in which the person never sees colors as others do, and is, therefore, said to be color-blind. It is, of course, not easy to convince a color-blind person that it is his vision that is abnormal, and not other people. The same is the case with regard to other modes of action of nerve-tissue, and especially in mental operations.

"No more striking illustration of this can probably be found than the teachings during the last ten years of Professor von Pettenkofer, of Munich, with regard to the modes of propagation of cholera. Here is a man who has done excellent scientific work, has made elaborate investigations, devised new apparatus, performed complicated and difficult experiments, and is everywhere recognized as a leader in sanitary science, but whose praises, even from his own pupils, are always qualified by the remark: 'But he is cranky about cholera.' He has just published an elaborate review of the epidemiological part of the report of the German Commission on Cholera, from which it appears that his view is the same that it was twenty years ago, that he does not believe that cholera is due to a micro-organism, nor that it is spread by drinking-water, nor that it is any way contagious. His review makes a handsome, large, octavo volume, it is ingenious and interesting, but it is the brief of an advocate who is on the wrong side. . . . It is still best to assume that cholera is spread by a living organism through the discharges of the sick; that when it is epidemic it is usually through an infected water-supply, and that it may be prevented, or its spread in a place stopped, by attending to the prevention of the entrance into a country of persons suffering from the disease, by disinfection of baggage, bedding, excreta, etc., and by special attention to the purity of the water-supply."

PRACTICAL HINTS ABOUT CHILDREN.

DR. JACONI gives in the *Archives of Pediatrics* the following suggestive hints about the management of children. "Always teach a nurse that a child cannot swallow as long as the spoon is between the teeth; that it is advisable to depress the tongue a brief moment, and withdraw the spoon at once, and that now and then a momentary compression of the nose is a good adjuvant. Syrup will turn sour in warm weather, glycerine and saccharine keep. The taste of quinine is corrected by coffee, chocolate and 'elixir simplex.' Powders must be thoroughly moistened; unless they be so, the powder adhering to the fauces is apt to produce vomiting. Inunctions require a clean surface, and are best made where the epidermis is thin and the net of lymph-ducts very extensive on the inner aspect of the forearm and the thigh. Babies after having taken opiates for some time, demand larger, and sometimes quite large doses to yield a suf-

ficient effect. Febrifuges and cardiac tonics, such as quinia, antipyrin, digitalis, strophanthus, sparteine, convallaria, etc., are tolerated and demanded by infants and children in larger doses than the ages of the patients would appear to justify. Mercurials effect the gums very much less in young than in advanced age. The rectum of the young is straight, the sacrum but little concave, the sphincter ani feeble, and self-control gets developed but gradually; for these reasons a rectal injection is either allowed to flow out or is vehemently expelled. Therefore one which is expected to be retained must not irritate. The blandest and mildest is a solution of six or seven parts of chloride of sodium in a thousand parts of water, which serves as a good vehicle for medicine unless incompatible with the latter. The injection must be made while the child is lying on its side (preferably the left side) not on the belly over the lap of the nurse, for in this position the space inside the narrow infantile pelvis is reduced almost to nothing. In many cases of intense intestinal catarrh, large and hot (104° to 108° F.) enemata will relieve the irritability of the bowels and contribute to recovery. They must be repeated several times daily. When there are many stools, and these complicated with tenesmus, an injection, tepid or hot, must or may be made after every defecation, and will speedily relieve the tenesmus."

ECTOCARDIA CURED BY A PLASTIC OPERATION.

PROFESSOR LIANNELONGUE, of Paris, recently presented to the Académie des Sciences a very remarkable case of deformity of the chest-wall, with ectopia of the heart, which he had dealt with successfully by operation, and which we find described in the *British Medical Journal*, May 26th: The patient was a female child, six days old, well formed in every part, except the thorax. On the front of the chest, over the middle of the sternum, there was a circular ulcer, rather larger than a franc-piece, the base being formed by a yellowish membrane, which appeared to be becoming gangrenous. It was already detached from the edges of the ulcer at several points, and thus only imperfectly closed the aperture into the chest. Each beat of the heart pushed it forwards, and on applying the finger during systole, the hardening of the ventricular walls as they contracted could be distinctly felt. The inner ends of the clavicle articulated below with the first rib, and appeared to be free internally and above: the sternum was entirely wanting between them. This gap in the osseous wall of the chest extended downwards in the middle line, the sternum appearing to be represented on each side only by a narrow strip of bone running downwards and obliquely inwards, and finally joining the corresponding piece below the median ulcer already referred to. The deficiency in the bony chest-wall was, therefore, of the shape of an isosceles triangle, the apex being below at the ensiform cartilage, and the base above at a line joining the inner ends of the two clavicles. The side of the triangle measured four, and the base three centimeters. The circular ulcer was, as it were, inscribed in this triangle. On inspiration, the chest-wall corresponding to the malformed part of the skeleton was drawn in, so that a hollow half-an-inch deep was formed at the upper part; in expiration, on

the other hand, it bulged markedly forward. A few days after the little patient was first seen, the remains of the "obturator" membrane at the bottom of the ulcer disappeared; the pericardium was seen to be entirely wanting; the apex of the heart projected outside the chest, and the whole anterior surface of the ventricles was exposed. The hole in the skin became gradually smaller, owing to the formation of large, fleshy granulations, which pressed on the apex and ventricles of the heart, and it was obvious that immediate surgical interference was necessary to prevent most serious disturbances of the circulation. M. Lannelongue, therefore, made two vertical incisions on each side, one and one-half centimeter to the outer side of the ulcer; the flaps thus formed were sufficiently loosened to allow of their internal edges being brought together over the opening in the chest-wall, where they were fixed by three hair sutures. Only a few drops of blood were lost; the operation was not followed by any constitutional disturbance, and the wound was entirely healed in twenty days. Two months after the operation the child was in perfect health. M. Lannelongue points out that in this way he transformed the case from one of "ectocardia" into one of "subcutaneous ectopia." He thinks it possible that the ectopia, which is at present extra-thoracic, may in time, as the heart develops, become intra-thoracic. Professor Verneuil, in presenting M. Lannelongue's communication to the Academy, remarked that this was the first time such a procedure had ever been attempted.

OVARIOTOMY AND MARRIAGE.

At a recent meeting of the British Gynaecological Society the question was discussed by Mr. Lawson Tait and others of the effect on the sexual instinct of the removal of the ovaries and testicles, and of the nubility of persons who have lost those organs, contrary to what might be supposed, that question seems to be not perfectly clear. The *Medical Press and Circular*, commenting on the discussion, says that it has always been assumed in the case both of women and of men—and especially in the latter—that the removal of organs so essential to the carrying out of the sexual act in its integrity, is attended with loss of the desire for a function which no longer admits of being performed properly. The belief, however, is one of those which has been handed down as a tradition and re-edited without being put to the test of experience, an experience which for many reasons is best carried out on a third party. This lapsus Mr. Tait has done something towards rectifying. After diligent search, however, he has only been enabled to discover one adult man whose testicles had both been removed, and in this particular case, it is satisfactory to learn that after a period of depression, both the desire and the ability for sexual intercourse have returned in their plenitude, although even Mr. Tait, probably, would not expect such intercourse to be fertile. As regards women, the prevalence of operation for removal of the ovaries permits of the fullest and most conclusive information. Not only does removal of the appendages not destroy the appetite, but in certain cases it even seemed to increase it, a result possibly less desirable than its abolition. Even when the uterus, as well as the appendages, were removed

from virgins, married life does not appear to have been other than satisfactory. The inquiries, however, suggest another question, possibly of more practical interest, and that is as to the legal status, as regards marriage, of women without ovaries and men without testicles. As concerns the latter, the deficiency is one which it would not be easy to conceal or explain, but women may and do marry without the husband being necessarily aware of the hiatus in the anatomical arrangements of his better half. A marriage contracted under such circumstances would from any point of view be immoral, and contrary to public policy, and when one of the parties to the contract is left in ignorance of the facts of the case it becomes a fraud of the most cruel description. Moreover, except with the assistance of the surgeon who was instrumental in removing the superfluous organs, it would be difficult for the outraged husband to prove his case, should he be tempted to resort to the law to relieve him of a mutilated and infertile conjoint. In years gone by the question was one which might well be left to the debating societies to discuss, but in view of the extension which the practice of extirpating ovaries has taken of late years, it becomes one of practical interest. If it be hard on the man to give him a wife minus her appendages, it is adding insult to injury to give him for a wife a woman who has not even a uterus to call her own. Yet Mr. Tait was enabled to record the cases of three young women, wombless and appendageless, who had subsequently reported favorably on the matrimonial condition. Where the operation in the case of either conjoint has been performed subsequently to marriage, no difficulty occurs, since each party to the contract has solemnly consented to accept the other for better or worse, but just as lepers are only permitted to marry *inter se*, so the only fit spouse for the woman without ovaries would be the man without testicles.

THE WEAR AND TEAR OF THE MEDICAL PROFESSION.

An interesting abstract of the recent report by Dr. J. H. Rauch of Illinois, on "the Wear and Tear of the Medical Profession" is given in *Science*.

The author finds that the previously reported favorable statistics on this point have been largely based on obituaries of the more eminent men who achieved marked professional success, and had reference very largely to city physicians, and of the men who, in the smaller towns, are in a position to select their practice and adjust their labors with some regard to regular hours of sleep, meals and relaxation. Comfortably housed at home, properly protected from the weather when making visits, free from the harassing cares of the *res angusta domi*, and beyond the torturing anxiety which too often besets the struggle for practice, — the conditions of life in these cases are undoubtedly favorable to longevity. But these are the fortunate few, who bear no more numerical relation to the rank and file of the profession than the general officers do to the rank and file of an army.

Compared with these biographical subjects, upon whose length of honorable and successful years is predicated the assertion that the wear and tear of the profession does not prevent its members from attaining a high average longevity — compared with these,

Dr. Rauch has, as the result of an extensive correspondence and systematic record, obtained data which show that the average age at death (in Illinois, at least) is not much over fifty-two years; and that only about eleven instead of thirty-five in every one hundred attain the scriptural limit of threescore years and ten.

An examination of the tables shows, that while the death-rate of physicians in Illinois for the first few years after entering upon the practice of medicine is lower than that of all males in Illinois, and greatly less than that of the whole population of the country at large, it increases beyond that of the former class during the decade from forty to fifty, and is greater than that of the latter class in the next decade.

The obvious inference is, that physicians, on entering practice, form a class of selected lives, since they have an advantage of nearly 3 per cent. as compared with all males at the same ages,—that is, from 24 to 40,—and of over 50 per cent. as compared with the total population, both sexes, at the same ages; this latter great disparity being no doubt largely due to the casualties among women during the child-bearing period. As the wear and tear of practice begins to tell, this advantage is soon lost; so that during the period from 30 to 70 the death-rate of physicians is 8 per cent. greater than that of all males, and during the period from 40 to 70 it is more than 11 per cent. greater than that of both sexes.

An examination of the causes of death reveals the result of the exposure, irregular hours, broken rest, and mental anxiety which are the lot of the average practitioner.

In the grouped causes of death it is seen that consumption, diseases of the respiratory organs (including 91 from pneumonia), and Bright's disease caused 268 deaths, or more than one-fourth of the total. If to these be added a share of the deaths from diseases of the heart,—the *sequela* of rheumatism,—a fair estimate may be made of the effect of exposure to the vicissitudes of weather upon the wear and tear of medical life. As a result of mental strain and anxiety, of insufficient, irregular, and interrupted sleep, and similar causes, is the total of deaths from diseases of the brain and nervous system, embracing 43 from various forms of paralysis. In the group of zymotic diseases (enteric fever given separately) there were 5 deaths from diphtheria, 1 each from small-pox and yellow-fever, and 8 from traumatic infection (septicæmia, etc.), all contracted from attendance upon patients.

Less creditable to the *morale* of the profession are the 18 deaths from over-doses of opiates and narcotics, the 7 admitted suicides, and the deaths from alcoholism, direct and indirect,—12 of the former, and at least 8 of the latter. There is this to be said, however, in this connection: that the proportion of mortality from these causes is steadily diminishing; and observation shows that this diminution is largely the result of an amelioration of the conditions, especially of country practice, due to better roads and methods of locomotion, increased comfort in living, and less physical strain upon the practitioner. Ten years ago the resort to stimulants upon exposure to the weather, and under the harsher conditions of practice which then obtained, was much more common than it is to-day. And this is also true of the use of opiates and hypnotics. The practitioner, familiar with their power to temporarily stimulate to further endurance, or to produce

sleep when nervous and exhausted, had formerly greater temptation to resort to the use of these agents, always ready to hand.

Correspondence.

ON THORACIC DEFORMITY PRODUCED BY ADENOID GROWTHS IN UPPER PHARYNX.

PARIS, June 15, 1888.

MR. EDITOR,—In my book on "Adenoid Growths of the Nasal Pharynx,"¹ I described a peculiar deformity of the chest originating in early childhood, and I attributed its origin to the existence of these tumors. In such cases the thorax is flattened and the sternal ribs, as well as the inferior part of the sternum, are sunken in, whilst their cartilages on the contrary are bulged outwards. As long ago as in 1828, Dupuytren, and in 1843, Robert, another great French surgeon—had mentioned a very similar deformity of the chest, which both ascribed to hypertrophy of the tonsils, thus committing a very excusable mistake indeed, as these authors have not had any knowledge of the existence of adenoid pharyngeal vegetations. These have indeed been discovered much later, and one of the first cases of growths of this nature has been given in a paper of mine, published in 1865 as well as in the well known publications of Czermak and of Voltolini. A circumstance which renders this error the most comprehensible is the one of adenoid growths generally coexisting with hypertrophical tonsils. Notwithstanding his ignoring the said facts, Dupuytren, with great sagacity, had already noticed a gap in the connection between enlarged tonsils and deformity of the thorax, for he had observed that this and other consequences attributed to the hypertrophy of these glands did not disappear in certain cases after tonsilotomy.

In my above-quoted book, I, the first, revealed the real origin of the said thoracic deformity and I explained it by a theory which may be summed up briefly in the following manner: Adenoid growths begin to form in early childhood. When arrived at a certain size, they fill up the nasal pharynx, close the nose from behind and intercept the passage of air through it. Thus the patient finds himself compelled to change the natural nasal respiration for that through the mouth. However, the children do not adopt the latter mode at once, but take to breathing occasionally through the nose, especially when asleep, and when, therefore, the control of will is wanting. Air under these circumstances not arriving through the nose at all or at least not in sufficient quantity, the action of the diaphragm and of the intercostal muscles during inspiration causes the thorax to sink in, for the atmospheric pressure on its outer walls is then superior to the interior one, and besides the lungs are known to have a natural tendency to contract. It is easy to understand that, under these circumstances, the ribs and the intercostal spaces sink in, but it is more difficult to comprehend the bulging of the costal cartilages. I have explained this phenomenon in the following manner:² By the giving way of their two points of insertion, namely, the ribs and the sternum, these cartilages are compressed laterally and therefore compelled to vault outwards. Now as the skeleton easily undergoes deformity in early childhood, these alterations finally become lasting.

These remarks cannot well have failed to attract the notice of the profession in England and in America, as my book has been twice translated into English. First a full translation by Dr. Macnaughton Jones (then Professor in Green's University, Ireland, now in London) has appeared in 1879 in the *Medical Press and Circular*. Then my late lamented friend, Dr. James G. Cassells, from Glas-

¹B. Löwenberg. Les tumeurs adénoïdes du Pharynx nasal, etc., Paris, 1878. Published first in the *Gazette des Hôpitaux*, and printed separately in 1879.

²See transactions of the International Medical Congress, III, 236.

gow, has published an abridged translation in the *Edinburgh Medical Journal* in 1879 (April to August) and he treats this special point (*ibidem* pp. 1100 and 1101). Furthermore, an exhaustive abstract has appeared in the *American Otological Journal* (Vol. I. No. 2, April, 1879).

On a later occasion, I again took up the same subject and entered into further particulars in my introductory address on "Adenoid Growths," delivered at the Seventh International Medical Congress (London, 1881) and reproduced in *extenso* in the transactions of this meeting (Vol. III, pp. 283-290. See this especial point on pp. 285 and 286).

Considering all the preceding facts, I have been rather surprised to find the discovery of the real origin of this deformity attributed to M. Châtellier by Dr. Hooper in a paper "On Adenoid Vegetations in Children," published in this periodical (March 15, 1888). In his inaugural dissertation, "Des tumeurs adénoïdes du Pharynx," (Paris, 1886), Dr. Châtellier when coming to this subject, precisely

quotes my remarks on the etiology of the deformity which are anterior by eight years to his pamphlet (see his paper, p. 571).

I am fully convinced that the above-quoted remarks, which largely prove my anterior claims, have been merely overlooked by Dr. Hooper whom I wish to thank, particularly for his kindly sending me his paper. In setting right this point I therefore claim my priority before the profession of the United States where I count so many distinguished friends.

I finally wish to avail myself of this opportunity and just mention that the *cutting forceps* figured in Dr. Hooper's paper (page 12 of the pamphlet) is, in fact, only a slight modification of the one I have described and drawn in 1878 in the *Gazette des Hôpitaux* and in my book in 1879 (page 67). The difference consists merely in the prolongation of the cutting ends, modified first by my learned friend Dr. Woakes, from London, and successfully by others. Respectfully yours, DR. B. LOEWENBERG.

REPORTED MORTALITY FOR THE WEEK ENDING JUNE 30, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhoeal Diseases.	Diph. & Croup.	Scarlet Fever.
New York	1,526,081	1038	577	34.74	6.48	24.03	4.59	2.79
Philadelphia	1,016,758	536	281	26.60	10.45	19.57	2.09	.95
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	232	96	34.86	3.36	26.24	4.62	—
Baltimore	437,155	284	168	40.23	4.20	36.40	3.35	—
Boston	407,024	183	61	15.95	9.90	3.85	7.15	—
Cincinnati	325,000	163	—	22.57	7.32	19.52	—	—
New Orleans	248,000	120	46	21.58	14.11	12.45	3.32	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	125	78	36.80	6.40	28.00	.80	—
Pittsburgh	210,000	119	71	34.40	7.74	28.38	.86	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,133	21	10	23.80	14.28	14.28	—	—
Charleston	60,145	34	12	14.70	10.70	5.88	—	—
Portland	40,000	6	1	—	50.00	—	—	—
Worcester	76,328	27	12	25.90	18.50	—	22.20	—
Lowell	69,450	22	—	—	—	—	—	—
Cambridge	61,079	6	6	9.10	27.30	—	9.10	—
Fall River	61,203	35	24	34.32	—	20.02	—	11.14
Lynn	51,467	7	0	28.56	57.12	14.28	—	—
Lawrence	40,175	12	5	16.65	—	—	—	8.33
Springfield	39,952	19	5	36.82	5.26	22.04	5.26	—
New Bedford	36,298	15	6	20.00	—	20.00	—	—
Somerville	33,307	—	—	—	—	—	—	—
Holyoke	32,887	11	3	27.27	9.09	—	9.09	—
Salem	28,781	3	1	—	33.33	—	—	—
Chelsea	27,552	5	1	—	20.00	—	—	—
Haverhill	24,979	6	0	16.66	33.33	—	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	4	0	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	5	1	—	20.00	—	—	—
Malden	18,932	—	—	—	—	—	—	—
Fitchburg	17,534	11	3	—	9.09	—	—	—
Waltham	16,651	1	0	—	—	—	—	—
Newburyport	13,839	—	—	—	25.00	—	—	—
Northampton	13,419	3	0	—	—	—	—	—

Deaths reported 3,051; under five years of age 1,468; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 963, consumption 245, acute lung diseases 141, diarrhoeal diseases 68, diphtheria and croup 105, scarlet fever 40, measles 53, typhoid fever 32, whooping-cough 27, malarial fever 25, cerebro-spinal meningitis 21, puerperal fever five, erysipelas four, small-pox three. From measles, New York 23, Baltimore three, Philadelphia, St. Louis, Boston, Pittsburgh, Charleston, Fall River and Lawrence one each. From typhoid fever, Philadelphia 12, Baltimore and Washington four each, New York three, Boston, Pittsburgh and Holyoke two each, Cincinnati, New Orleans and Lawrence one each. From whooping-cough, New York 15, Philadelphia and Boston three each, Baltimore, Cincinnati, New Orleans, Washington, Pittsburgh and Nashville one each. From malarial fever, New York seven, New Orleans five, St. Louis four, Philadelphia three, Baltimore and Charleston two each, Cincinnati and Nashville one each. From cere-

bro-spinal meningitis, New York six, St. Louis and Washington three each, Boston, Pittsburgh and Springfield two each, Cincinnati, Worcester and Lynn one each. From puerperal fever, St. Louis and Washington two each, Cincinnati one. From erysipelas, New York two, Boston and Haverhill one each. From small-pox, Philadelphia two, New York one.

In the 28 greater towns of England and Wales with an estimated population of 9,398,275, for the week ending June 10th, the death-rate was 16.2. Deaths reported 2,923; infants under one year of age 612; whooping-cough 89, diarrhoea 45, scarlet fever 38, measles 50, diphtheria 25, fevers 19, small-pox (Freston six, Sheffield and Hull two each, Bristol, Manchester and Leeds one each), 13.

The death-rates ranged from 9.9 in Birkenhead to 27.9 in Manchester; Birmingham 14.0; Bradford 17.5; Halifax 23.4; Hull 17.0; Leeds 18.0; Leicester 10.7; Liverpool 15.7; London 11.2; Nottingham 19.1; Portsmouth 10.8; Sheffield 15.0, in Edinburgh 19.7; Glasgow 24.0; Dublin 21.7.

The meteorological record for the week ending June 30, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barom-eter.	Thermometer.				Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Saturday, June 30, 1888.																			
Sunday, . . . 24	29.79	66.0	78.0	57.0	82.0	85.0	97.0	88.0	W.	N.E.	E.	2	12	8	O.	O.	O.		
Monday, . . . 25	29.75	63.0	70.0	56.0	94.0	87.0	86.0	89.0	N.E.	E.	S.W.	5	8	10	O.	O.	C.		
Tuesday, . . . 26	29.76	68.0	81.0	65.0	68.0	85.0	92.0	82.0	W.	N.	S.W.	6	6	5	O.	R.	O.		
Wednesday, . . . 27	29.98	69.0	77.0	62.0	66.0	40.0	55.0	53.0	N.W.	N.W.	N.	18	22	9	C.	C.	C.	.01	
Thursday, . . . 28	30.23	56.0	68.0	54.0	67.0	74.0	76.0	72.0	E.	E.	E.	24	18	16	O.	O.	O.		
Friday, . . . 29	30.10	57.0	60.0	53.0	73.0	72.0	75.0	75.0	N.E.	E.	S.	12	10	6	O.	C.	C.	.02	
Saturday, . . . 30	29.81	68.0	80.0	55.0	63.0	55.0	69.0	62.0	W.	W.	N.W.	12	18	29	C.	F.	R.	.39	
Mean, Week.	29.92		73.0	58.				74.0											.96

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 30, 1888, TO JULY 6, 1888.

BAXTER, J. H., colonel and chief medical purveyor. Will proceed to New York City on public business connected with the Medical Department, and on completion thereof will return to his station in Washington City. S. O. 150, A. G. O., June 29, 1888.

BENTLEY, EDWIN, major and surgeon. Retired from active service July 3, 1888, by operation of law. S. O. 153, A. G. O., July 3, 1888.

JOHNSON, RICHARD W., captain and assistant surgeon. Designated as medical officer for a camp of instruction in rifle practice to be established at Fisher's Island, N. Y., (near New London, Conn.), on the 2d of July, 1888, and to continue during the months of July, August and September; and ordered to proceed to Fisher's Island in proper season and report to the commanding officer for duty. S. O. 131, Division of the Atlantic, June 28, 1888.

CROSBY, WM. D., first lieutenant and assistant surgeon. Leave of absence extended one month. Paragraph 8, S. O. 151, A. G. O., June 30, 1888.

CLENDENIN, PAUL, first lieutenant and assistant surgeon. Leave of absence granted in S. O. 55, Department of Texas, June 4, 1888, extended one month. S. O. 149, A. G. O., June 28, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING JULY 7, 1888.

CRANDALL, R. P., assistant surgeon. Detached from the United States Steamship "Saratoga" and to the United States Steamship "Galena."

PECK, GEORGE, medical director. Placed on retired list, 9th inst.

BOOKS AND PAMPHLETS RECEIVED.

Fifteenth Annual Report of the Board of Health of the city of New Haven, 1887.

McGill University, Annual Calendar. Faculty of Medicine. Fifty-Sixth Session, 1888-89. Montreal, 1888.

Effects of Food Preservatives on the Action of Diastase Pancreatic Extract and Pepsin. By Henry Leffmann, M.D., and William Beam, M.A.

The Medico-Legal Treatment of Common Inebriates. By L. W. Baker, M.D., Superintendent Family Home for Nervous Invalids, Baldwinville, Mass. Reprint.

Annual Catalogue of Roger Williams University, Nashville, Tenn. 1887-88.

Partial Syllabic Lists of the Clinical Morphologies of the Blood, Sputum, Feces, Skin, Urine, Vomitus, Foods, including Potable Waters, Ice and the Air, and the Clothing (after Salisbury). By Ephraim Cutter, M.D. Harvard and University of Pennsylvania, A.M. Yale, LL.D. Iowa, Hon. F. S. Sc. (London), etc. New York, 1888.

The Annual Report of the Department for the Insane of the Pennsylvania Hospital, for the year ending fourth month 21st, 1888. Philadelphia, 1888.

Catalogue of the Albany Medical College, Medical Department of Union University. Fifty-Seventh Session, 1887-88, and Announcement for Session, 1888-89.

Woman's Medical College of the New York Infirmary. Twentieth Annual Catalogue and Announcement. June, 1888.

Forty-Second Annual Announcement of Starling Medical College, together with Catalogue and Order of College and Hospital Exercises for the Session of 1888-89. Columbus, Ohio.

Enquete sur les Habitations Ouvrières de la Province de Brabant. Rapport de M. Le Docteur E. Janssens. Bruxelles, 1888.

Cocaine Dosage and Cocaine Addiction: also Cocaine Toxicity. By J. E. Mattison, M.D., Brooklyn, New York. Reprint, 1888.

Catalogue of the Alumni, from 1834 to 1889, of the Medical Department of the Tulane University of Louisiana, with an Introductory Historical Sketch, etc. New Orleans, 1888.

Anæsthetics; Their Uses and Administration. By Dudley Willmot Euxton, M.D., B.S., Administrator of Anæsthetics in University College Hospital. Philadelphia: P. Blakiston, Son & Co.

The Principles of Cancer and Tumor Formation. By W. Roger Williams, F.R.C.S., Surgical Registrar to the Middlesex Hospital, Surgeon to the Western General Dispensary. London: John Bale & Sons. 1888.

The Applied Anatomy of the Nervous System. Being a Study of this Portion of the Human Body from a Standpoint of its General Interest and Practical Utility in Diagnosis; Designed for use as a text-book and a book of general reference. By Ambrose L. Ranney, A.M., M.D., Professor of the Anatomy and Physiology of the Nervous System in the New York Post-Graduate Medical School and Hospital, etc. Second edition. Rewritten, enlarged and profusely illustrated. New York: D. Appleton & Co. 1888.

The Milroy Lectures: On Epidemic Influences; On the Aspects of Yellow Fever; On the Epidemiological Aspects of Cholera. By Robert Lawson, LL.D., Inspector General of Hospitals, etc. London: J. & A. Churchill. 1888.

The Intubation of the Larynx. By F. E. Waxham, M.D., Professor of Otolaryngology and Rhinology, College of Physicians and Surgeons, Chicago; Clinical Professor of Laryngology and Rhinology, Chicago Ophthalmic College. Illustrated with forty-five engravings, including plates fully describing the operation. Chicago: Chas. Truax & Co.

A Manual of the Operations of Surgery for the Use of Senior Students, House Surgeons and Junior Practitioners. Illustrated by Joseph Bell, M.D., F.R.C.S., Edinburgh, Consulting Surgeon to the Royal Infirmary, etc. Sixth edition. Revised and enlarged. Edinburgh: Oliver & Boyd. 1888.

The Pathology, Diagnosis and Treatment of the Diseases of Women. By Graily Hewitt, M.D., F.R.C.P., Professor of Midwifery and Diseases of Women, University College and Obstetric Physician to the College, etc. A new American from the fourth revised and enlarged London edition, with 236 illustrations. Edited with notes and additions by H. Marion Sims, M.D., New York. Three volumes. New York: E. B. Treat.

Original Articles.

AN EPIDEMIC OF TYPHOID FEVER DUE TO INFECTED MILK.

BY CHARLES HARRINGTON, M. D.
Instructor in Hygiene and Assistant in Chemistry in the Harvard Medical School.

The epidemic about to be described occurred in November and December, 1886, in the city of Cambridge, Mass., and was investigated by Dr. Alfred F. Holt, for the Board of Health of that city, and by Dr. Henry Jackson and myself, on behalf of the State Board of Health, shortly after the outbreak. The results of our investigations at that time were reported to the State Board, and an account of the epidemic was read by me at the February meeting of the Boston Society of Medical Sciences, but publication in this form has been deferred until now with the hope that further examination might yield additional facts regarding the cause. For the account of the epidemic as it occurred, I wish to acknowledge my indebtedness to Dr. Holt, who made the preliminary inquiry.

Up to the middle of November, there was no more than the usual amount of typhoid in the city; but, beginning on the 18th, the number of cases reported to the local Board of Health was so large as to occasion considerable surprise. Between November 18th and December 2d, sixty-three cases were reported, an average of more than four per day; between December 2d and 31st, ten more were reported, making seventy-three in all. These cases were not confined to a limited area, but were widely scattered here and there throughout that portion of the city known as the Port. It was naturally supposed that the unusual number of cases must have to a certain extent a common cause, but a consideration of the various supposed causes of such outbreaks failed at first to throw any light upon the subject. The water-supply being the same for the whole city, it could hardly be looked upon as the cause of an epidemic confined chiefly to one section. The sewerage also was manifestly not at fault. The probability of infected milk as a carrier of the disease was regarded as very small owing to the fact that the territory invaded was much larger than is usually supplied by a single milk-route.

On making a house-to-house inquiry, however, it was learned that in spite of the wideness of the affected area most of the cases occurred among the patrons of a particular milk-man. Fifty-eight of the seventy-three cases occurred in thirty-six families who obtained their milk from this source. It was also learned that most of these cases were of persons who were in the habit of drinking uncooked milk. The cases which occurred outside this milk-route were not much in excess of the number usually occurring at that time of the year.

It was learned on inquiry as to the source of the milk supplied by this man, that it came through one of the large contractors from five farms in Suncook and Hooksett, N. H. Samples of the milk from each of these farms were taken from the milk-car on its arrival, and were examined chemically for adulteration by addition of water. The analyses made by the writer showed no adulteration, but, of course, this examination could throw no light on the character of previous consignments, though it is fair to suppose that as the farmers were in ignorance of the intended examina-

tions of that particular day, the quality of the milk was about as usual. It was then thought advisable that the five farms should be inspected, and on behalf of the State Board of Health, Dr. Jackson and myself, accompanied by Inspector Terry, visited them on January 1th, to make the necessary examinations. Samples of the milk and of the water-supply of each farm were taken for chemical and biological examination; the results of these examinations will be found tabulated below.

The first farm visited was that of a Mr. Howe. Here were found sixteen cows in good condition, housed in a fairly good barn, which, with the other outbuildings, were in good order. The water-supply was running water conducted through an iron pipe from a spring seventy-five rods away. There was no history of sickness among the family or help. At the Morgan farm the stock and buildings were in good condition. The pump was in the barn cellar, which was to a considerable extent covered with cow-manure. Several head of stock were loosely confined in this cellar. There was no history of sickness. At the Sullivan farm everything was found to be clean and carefully kept. The water comes from a spring in the woods a hundred rods distant, through an iron pipe. At the Whittemore farm the cows looked thin and in poor condition. The cow-stable and other outbuildings did not appear well-kept, and there was a general air of slovenliness about the whole place. The water-supply comes from a well, situated between the house and a graveyard, about eighty feet from the latter, from which there is a slight downward slope.

At the Mann farm the livestock and buildings were found in excellent condition. The water for barn and dwelling was derived from a well twenty-six feet deep, well bricked and curbed, and was conveyed by a lead pipe to a pump in the barn about six feet from the privy vault. The latter was well built of brick and cement seemed quite tight, and there was no odor or perceptible leakage. The lead pipe passed from the pump directly by the vault a few feet below the surface of the cellar floor, to the bottom of the well. The distance between the vault and the well was not more than eighteen feet, but the vault was built up from the cellar-floor and not sunk below the surface.

Our inquiries as to present or past sickness at the farm were answered in the negative. On leaving the farm, however, we received an intimation from a neighboring farmer of whom we made inquiries, that there had been some sickness there in the autumn. The farm was therefore revisited, and the investigation renewed.

On re-examination, Mr. Mann recollected that his son had not felt well in the early autumn, and that on September 13th, he went to bed with typhoid fever. The description of the symptoms was sufficiently convincing that the diagnosis of the attending physician was correct. The father took entire charge of the nursing, and emptied the excreta every day into the vault, and with each addition threw in a quantity of ashes or ordinary soil. At the same time he performed his usual duties about the farm, superintended the milking, and prepared the milk for the market. The sickness lasted several weeks, and convalescence was rapid. The boy was up and about after the first of November, after a sickness of about seven weeks. He had been living at the farm only a month before taking to his bed. On or about November 1st, a man

who had been employed about the farm went away, and about three weeks later was taken with the same disease. A few days after his departure, Mr. Mann assisted by his younger son cleared out the vault, the contents of which were thrown out on the ground near by and covered with earth. On November 18th, that is to say, within three weeks, the epidemic broke out in Cambridge.

The results of the chemical analysis of the samples of water from the five farms are tabulated below.

[Figures express parts per 100,000.]

FARM.	Free Ammonia.	Alb'd Ammonia.	Chlorine.	Residue.			Hardness.
				Fixed	Vola.	Total	
Howe { (running water) }	0.0006	0.0118	0.25	1.3	1.6	2.9	1°
Sullivan, "	none.	0.0034	0.20	3.1	0.9	4.0	1.5°
Morgan (well),	0.0044	0.0020	1.65	4.5	2.3	6.8	2°
Whittemore (well)	0.0004	0.0026	0.20	2.7	1.2	3.9	1°
Mann, "	none.	0.0046	1.60	6.5	2.2	8.7	4.5°

All five samples were clear, colorless, and odorless, and by the ferrous-sulphate test showed no nitrates.

The chemical examination of the samples showed them to be with one exception waters of unusual purity. The exception was the water of the Howe farm, which showed a rather large amount of albuminoid ammonia, doubtless due to vegetable matter.

There was no chemical evidence of soakage into the Mann well. At the time the vault was cleaned the ground was frozen, and the excreta would therefore have had some difficulty in penetrating through the soil into the well. Any serious pollution in November would probably have left some traces at this time. It seemed advisable to take samples from this well later on, after the frost should have left the ground, and this was done as will be shown.

The biological examination of the samples of water and of milk from the five farms was made by Dr. Henry Jackson, on January 5th, with the following results, which I have been kindly permitted to take from his report to the Board of Health.

HOWE FARM.

Water. 250 to 300 colonies in one cubic centimeter. The following varieties were distinguished: (a) Elevated brown colonies of vigorous growth, microscopically, round cocci. (b) Rapidly growing colonies, causing liquefaction of the gelatine, and formation of a white flocculent sediment; microscopically, thick, very short rods. (c) Elevated fine white colonies causing no liquefaction of gelatine; thick rods about twice as long as they are broad.

Milk. In one cubic centimeter of sample taken from a cool room in the house were found by estimation 2,000 colonies. (a) Raised brown colonies; cocci. (b) White colonies liquifying gelatine; microscopically, short rods.

Remarks. Bacteria in water more numerous than they should be in good potable water. Before condemning the water, however, two facts must be considered: (1) The water in the trough is constantly open to contamination from outside sources (cows drinking, etc.). (2) Twenty-four hours elapsed before the cultures were made.

WHITTEMORE FARM.

Water. In one cubic centimeter nine colonies:

(a) Brown, elevated; cocci. (b) White, not much elevated, non-liquefying; short, thick rods.

Milk. In one cubic centimeter 100 colonies, mostly the same variety. Microscopic examination of several showed small, round cocci; a few brown colonies; microscopically, cocci.

MORGAN FARM.

Water. In one cubic centimeter, fourteen small colonies: (a) Several pure white colonies; microscopically, small, perfectly round cocci. (b) Yellowish-white colonies; microscopically, thick rods about twice as long as broad; after a week, slow liquefaction of gelatine.

Milk. In one cubic centimeter, many hundred small, white colonies, and a few brown colonies. (a) White colonies, minute round cocci. (b) Brown colonies, rather large, oval cocci.

Water contains a small number of bacteria, and in winter at any rate is not contaminated by the over-lying excrement.

SULLIVAN FARM.

Water. In one cubic centimeter, forty colonies. (a) Chiefly, raised brown colonies; microscopically, short, thick rods. (b) A few small, white colonies; cocci. Considering the exposure of the water to external contamination, the specimen contained very few bacteria.

Milk. In one cubic centimeter thirty non-liquefying white colonies; cocci.

MANN FARM.

Water. In one cubic centimeter forty-eight colonies. (a) Nine small colonies liquefying the gelatine, and making a white flocculent sediment; microscopically, short, thick rods. (b) Thirteen small, white colonies with slight depression of surrounding gelatine; microscopically, short, thick rods. The water cannot be considered as bad.

Milk. In one cubic centimeter about one thousand small, white colonies; microscopically, cocci, many arranged in pairs as diplococci.

Dr. Jackson sums up as follows: "(a) No bacteria have been found that can be considered as pathogenetic. (b) So far as the number of bacteria determines the quality of the water—that from the Whittemore and Morgan farms is good, being practically free from bacteria; that from the Mann and Sullivan farms cannot be considered to contain an undue number of bacteria; that from the Howe farm is probably contaminated, from some source, with organic matter. The milk from the Sullivan and Whittemore farms contained comparatively few bacteria; that from the other farms a large number, but the examination gives no ground for the supposition that pathogenetic forms are present."

It will be noticed that the biological analysis yielded results in close agreement with those of the chemical examination, and that the only specimen of water to which any exception could be taken was shown by both processes to be probably contaminated by vegetable matter. As indicating any connection between the water-supply and the outbreak at Cambridge, the analyses were perfectly negative. Had the water on the Mann farm, where the sickness had occurred, proved chemically or biologically bad, it might have been looked upon as a valuable piece of evidence in support of the drinking-water theory of the origin or

dissemination of typhoid, and the evidence would have been so much the stronger from the fact that the excreta had been thrown out on the ground some time before the outbreak occurred. At the same time it is to be remembered that the ground was frozen, that the excreta soon became so, and that the well is protected by a curbing from surface-washing. It is possible that the character of the water may have been very different in November from what it was on January 4th, but even a moderate contamination at that time would probably not have disappeared so completely in so short an interval. It is very unfortunate that we have no means of knowing anything about its quality before the outbreak. But assuming that there was a serious contamination in November, how could it have been brought about? Soakage from the vault directly through the soil seems highly improbable on several grounds. The vault was evidently built with great care; the walls are very thick, the floor of brick with eighteen inches of cement; there was no visible evidence of soakage anywhere about the vault, which, being built directly up from the floor of the cellar, was open to ready inspection; moreover, the contents of the vault were at no time in a fluid condition since enough soil and ashes had been thrown in to render the contents at best only semi-fluid. Contamination by the excreta after their removal from the vault and deposition on the ground seems more probable, though as already stated there were some obstacles in the way of that process.

Moreover, the farm-hand who was taken sick at or about the same time that the outbreak occurred in Cambridge, left the farm several days before the vault was cleaned, so that if his case and those at Cambridge had a common origin, that influence was at work before the soil about the well was polluted by the vault contents. That the cause of the outbreak in Cambridge was in the milk supplied from Suncook there can be little doubt, and that the milk derived its infection from the case of sickness at the farm or from the cause of that sickness, seems extremely probable. But the manner of infection is unknown; it may have been through the water, but there is nothing to prove such a condition, and there are reasons already mentioned against it; it may have been through the air, or communicated by the hands of the milkers; or it may have been from the cattle themselves. The theory of cattle origin of typhoid is one not yet fully developed, but very worthy of serious consideration.

As the analysis of the water had given only negative results, and as we had no previous analysis with which to make comparisons, it was deemed advisable to obtain a second sample of the Mann water later on in the season when the frost should have left the ground. It was reasonably supposed that if the well had been seriously contaminated in November, the amount of chlorine at least would be not materially greater in the following May than in January, for had the ground become saturated with the contents of the vault to such an extent that the water in the well could be contaminated, the pollution would under the usual conditions be a continuous one, with after a time, a progressive diminution in amount until the water should again be in its natural condition, provided no new element of contamination were introduced. On the other hand if, as seemed probable, the soil surrounding the well had not become impregnated by the filth, the

ground being frozen at the time the deposit of faecal matter occurred, and the filth itself being frozen, the character of the water ought to undergo considerable change before the end of spring. On May 9th, Inspector Terry again visited the Mann farm, and obtained another sample of water, which he delivered to me immediately on his return. A sample was taken also for biological analysis, and delivered to Dr. Gardner T. Swarts. By chemical analysis I found the organic matter not materially changed in amount, as shown by the albuminoid ammonia. The chlorine and residue, however, were found to have increased very largely, as may be seen from the following figures of the examinations in January and May.

DATE.	Free Ammonia.	Alb'd Ammonia.	Chlorine.	Residue.			Hardness.	Nitrates.
				Fixed	Vola.	Total		
Jan. 1....	none.	0.0046	1.60	6.5	2.2	8.7	4.5°	absent.
May 9....	none.	0.0025	5.80	18.0	6.1	24.1		trace.

From these it will be seen that while the organic matter shows no increase in amount, probably because of oxidation, the chlorine and residue are increased; the former to more than three times its former amount, the latter to a somewhat less extent. In the January sample no nitrates were found by the ferrous-sulphate test, while in the May sample, the reaction was marked.

The biological examination by Dr. Swarts, to whom I am indebted for the report, yielded the following results:

(1) One cubic centimeter gave 1040 colonies.

(2) One-sixth cubic centimeter gave 325, 1950 for the whole cubic centimeter.

(3) and (4) Both plates liquefied.

Isolation analysis: Large, white non-liquefying, irregular; small, white non-liquefying, regular. Fluorescent green-liquefying, regular. Growth of white on potato, negative.

In November I communicated with Mr. Mann and requested him to send me a third sample for further comparison, which for some reason he failed to do. Later on, in May of the present year, I sent a man to the farm and obtained a sample, which, compared with the specimen of the previous May, showed a marked diminution in the amounts of chlorine and residue, but yet by no means as great a diminution as was to be expected if no new source of soil pollution had been introduced. No biological analysis was made.

DATE.	Free Ammonia.	Alb'd Ammonia.	Chlorine.	Residue.			Nitrates by Ferrous Sulphates.
				Fixed	Vola.	Total	
May, 1887...	none.	0.0026	5.80	18.0	6.1	24.1	trace.
May, 1888...	0.0024	0.0038	4.14	11.5	4.1	15.6	trace.

The chemical analyses indicated first, that the water six weeks after the outbreak showed no evidence of pollution by the material thrown out from the vault on to the ground near the well; second, that later when the ground was open, a considerable pollution was manifest; and third, that at a corresponding time of the next year, and under the same conditions, the evidence of contamination was not so great, showing an improvement in the character of the surrounding

soil in spite of a possible removal of the cause of pollution.

The possibility of the infection of milk by organisms floating in the air is one which has been long recognized. Direct contamination by the hands of the milkers has been in several investigations of this nature regarded as more than a possible cause. The possibility of animal origin of typhoid fever has been within a few years the subject of careful inquiry, and several investigations of milk typhoid epidemics have given important evidence bearing on this point, which it seems to me is worthy of the most careful research.

The manner of the infection of this particular milk-supply can of course never be known, but in view of the evidence yielded by the examinations of the water, it seems not improbable that contamination was brought about in one of the other ways above mentioned.

ENDEMIC CEREBRO-SPINAL MENINGITIS.¹

BY CHARLES W. TOWNSEND, M.D.

MEDICAL literature abounds in records of epidemics of cerebro-spinal meningitis, which, first definitely recognized and described in 1805, in Europe, gained a foothold in this country in 1806, under the name of spotted fever, appearing first in Medfield, Mass. Since then there have been numerous epidemics of this disease in widely separated regions of this country, one occurring in Boston, in 1873. But like diphtheria, besides coming at intervals in epidemics, cerebro-spinal meningitis occurs with more or less frequency in certain places at all times, that is to say, it has in these places become naturalized or endemic.

According to J. Lewis Smith,² cerebro-spinal meningitis is becoming more rapidly naturalized in the northern than in the southern cities, especially in Chicago, New York, Philadelphia and Jersey City, and that it also occurs, but to a less extent, in Cincinnati, Boston, Worcester, New Haven, Albany, Milwaukee, Baltimore, St. Louis, Minneapolis, San Francisco and other cities. Since the great epidemic in New York of 1872, cerebro-spinal meningitis has not been absent from that city. Smith³ says that it is fully established there and that "it has become one of the scourges of childhood, destroying many lives each year and injuring irreparably by deafness or in other ways, many who recover." The deaths from this disease in New York in 1883, were two hundred and twenty-three in number, averaging eighteen a month, and very evenly distributed throughout the year, and the fatality has been almost the same for the last few years, the cases all being endemic.

In Boston a few cases are said to have occurred in 1810, at the time of the epidemic in Worcester County. From an examination of the city registrar's reports, first published in 1849, I can find no record of a death by this disease prior to 1865, in which year two deaths are reported under the name of spotted fever. In 1866 there were no deaths, while in 1867, seven deaths are recorded from cerebro-spinal fever. The following table shows the number of deaths in Boston from that date to the present time:

1865	2	1871	3	1877	21	1883	23
1866	0	1872	6	1878	19	1884	26
1867	7	1873	216	1879	5	1885	19
1868	8	1874	35	1880	9	1886	14
1869	7	1875	41	1881	16	1887	16
1870	5	1876	13	1882	21		
Total						602.	

An examination of the monthly records since 1879 shows that the deaths are fairly evenly distributed throughout the year, as is shown in the following table of one hundred and sixty-two cases:

January	15	July	13
February	13	August	12
March	26	September	9
April	17	October	10
May	14	November	8
June	13	December	12

Of these cases ninety-two were males, seventy females, and ninety-two were children under five years of age.

The United States mortality statistics for the year 1880, show 2,898 deaths from cerebro-spinal meningitis, of which the larger number 1,537 were male, the smaller, 1,361, female. Nearly one-fourth part of the whole number, or 619, were under one year of age, and 1,567 or more than a half, were under five years. Of the remainder, 761, or over a quarter of the whole number, were between the ages of five and twenty years, leaving less than one-quarter of the whole number of deaths from the disease in individuals over twenty years of age.

The following table obtained at the office of the Boston Board of Health gives the number of deaths from cerebro-spinal meningitis in some of the cities of the world during the year 1885, and is of interest as showing the wide distribution of the disease.

New York	202	London . . . . .	..
Philadelphia	87	Scotland . . . . .	..
Chicago	142	Dublin and Cork . . . . .	..
Baltimore	24	Stockholm	2
St. Louis	30	Belgium . . . . .	..
Boston	19	France . . . . .	..
San Francisco	38	The Hague	183
New Orleans	5	Rome . . . . .	..
Cincinnati	32	Bologna	9
Milwaukee	27	Berlin	14
Pittsburg	14	Dresden	4
Providence	3	Leipzig	10
Alleghany	22	Nuremberg	8
Richmond	19	Chenai	47
New Haven	5	Brunswick	4
Lowell	31	Strassburg	185
Toledo	10	Danzig	14
Cambridge	17	Prague	5
Syracuse	17	Calcutta . . . . .	..
Knoxville, Tenn.	5	Melbourne . . . . .	..
Richmond, Ind.	2	Halifax . . . . .	..

Cerebro-spinal meningitis, therefore, although but recently recognized, has spread throughout the northern civilized world, and has become thoroughly established, naturalized or endemic, in many of the cities, and we may reasonably conclude that since the disease has been increasing in past years, it may continue to do so in the future. It is certainly important, therefore, to be able to recognize the disease, and if possible, to prevent its spread.

That cerebro-spinal meningitis is an infectious disease, is evident from its course, and from its epidemic and endemic character; that it is not contagious in the ordinary sense of the term is also a well-recognized fact. As is the case with all infectious diseases micro-organisms are generally admitted to be the cause. There are numerous investigations on this point by

¹ Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, May 9, 1888.

² Contribution to the Study of Cerebro-Spinal Meningitis, N. Y. Med. Rec., May 14, 1887, p. 642.

³ New York Med. Rec., November 21, 1883.

Klebs,⁴ Fraenkel,⁵ Eberth,⁶ Leyden,⁷ Senger,⁸ Weichselbaum,⁹ Goldschmidt,¹⁰ and others, even a brief review of which would far exceed the bounds and purpose of this paper. Suffice it to say, however, that there is tolerable agreement among these investigators, in admitting the presence of a micro-coccus in the purulent fluid of the cerebral and spinal meninges found in cases of cerebro-spinal meningitis. Fraenkel found that this micro-coccus was identical with that previously found by him in cases of acute lobar or croupous pneumonia, and this has been confirmed by other observers. Weichselbaum, by injecting pure cultivations of these organisms produced apparently croupous pneumonia or cerebro-spinal meningitis dependent on the place of injection. He also described a second distinct species of micro-organism present in six uncomplicated cases of cerebro-spinal meningitis, named by him *Diplococcus intracellularis meningitidis*, a diplococcus found partly in the pus cells and partly free. Goldschmidt,¹¹ in a recent elaborate paper, confirmed these observations of Weichselbaum, and with him agreed that in certain cases of cerebro-spinal meningitis, this organism bears a causative relation to the disease. Between croupous pneumonia and cerebro-spinal meningitis there certainly seems to be some relation from clinical observations alone, for the coincidence of the two diseases in the same patient is not uncommon. Dr. Webber,¹² in his Boylston Prize Essay on "Cerebro-Spinal Meningitis," makes a special division for this class of cases where the "force," as he expresses it, "falls upon the lungs" (*vide* also Wilcox.¹³)

The micro-coccus in producing the disease is supposed to obtain access to the meninges of the brain through the ethmoid plate from the nose in some cases, and from the tympanic cavity in others, and, as proof of this theory, the organisms have been found by several observers in both of these regions. Although undoubtedly the same organism bears a close relation to both croupous pneumonia and cerebro-spinal meningitis in some cases, yet it seems hardly creditable that ordinary croupous pneumonia, universally common, should be caused by the same microbe as the latter disease, which, unknown in some places, is everywhere rare in comparison with pneumonia. It has been said, however, that pneumonia is much more frequent simply because the micro-cocci have much more easy access to the lungs than to the brain. If that be the fact, then, there should be a tolerably constant relation between the numbers of the two diseases, and, therefore, when pneumonia is very common we should expect more cases of cerebro-spinal meningitis than usual, and on the other hand in epidemics of cerebro-spinal meningitis, pneumonia would rage still more. J. Lewis Smith¹⁴ says that in New York City, during the cerebro-spinal meningitis epidemic of 1872, pneumonia was also unusually prevalent, and the symptoms were of greater gravity than usual. Muscular pains, restlessness, and delirium often preceded for hours or even days the pneumonia symptoms, and in some cases

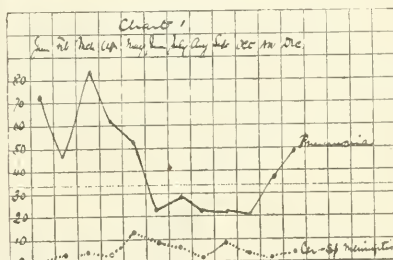
both diseases were developed. In Boston, however, the mortality statistics show no increase of pneumonia during the years of the cerebro-spinal epidemic, as will be seen by a glance at this table.

Year.	Deaths from Cerebro-spinal Meningitis.	Deaths from Pneumonia.	Percentage of deaths from Pneumonia to total mortality.
1870	5	336	5.51
1871	3	345	5.86
1872	69	517	6.39
1873	216	463	5.88
1874	35	571	7.31
1875	41	632	7.06
1876	13	523	6.38
1877	24	484	6.64
1878	19	581	7.57

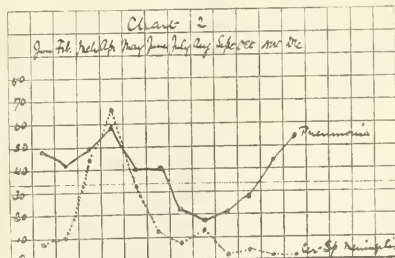
The yearly average ratio¹⁵ of the deaths from pneumonia in Boston to the total mortality from the year 1836 to 1877, is 6.11.

J. Lewis Smith¹⁶ says that from February 1st to June 1st, 1872, when the epidemic of cerebro-spinal meningitis was at its height in New York, 1,707 deaths were recorded from diseases of the respiratory organs exclusive of phthisis, while only 1,336 deaths from the same causes occurred during the remaining eight months.

To show the relations by months of these two diseases in Boston, I have constructed the following charts.



Monthly Mortality from Pneumonia (513 cases) and Cerebro-Spinal Meningitis (69 cases) in Boston in 1872.



Monthly Mortality from Pneumonia (463 cases) and Cerebro-Spinal Meningitis (216 cases) in Boston in 1873.

In 1872 there is no correspondence between the charts of the two diseases, while in 1873 the greater

⁴ Archiv. f. Exper. Pathol. Bd. 4.

⁵ Deutsch. Med. Wochenschr., No. 13, 1886.

⁶ Deutsch. Archiv. f. Klin. Med. Bd. 29.

⁷ Centrbl. f. Klin. Med. 1883.

⁸ Archiv. f. Exper. Pathol. Bd. 20.

⁹ Fortschritte der Medicin. September 15 and October 1, 1887.

¹⁰ Centrbl. f. Bacteriol. u. Parasit., 1867, II, 649.

¹¹ Loc. cit.

¹² Cerebro-Spinal Meningitis. The Boylston Prize Essay for 1866.

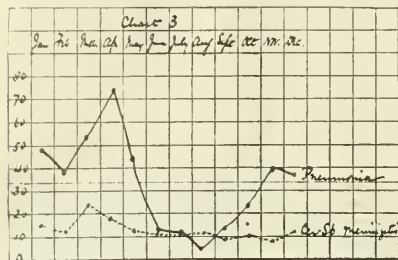
¹³ Pulmonary form of Cer.-Sp. Menin. N. Y. Med. Jour., 1887, xlvii.

¹⁴ New York Medical Record, Nov. 24, 1883.

¹⁵ City Registrar's Report for 1877.

¹⁶ Loc. cit.

number of cases of both diseases occurred between February and June, thus agreeing with the results found by Smith in New York. This correspondence in 1872 seems, however, to have been accidental as far as the cerebro-spinal meningitis is concerned, as will be seen by reference to Chart 3. Here the pneumonia monthly line represents 412 cases occurring at the Massachusetts General Hospital¹⁷ from 1870 to 1885 inclusive, and it is interesting to see how closely it corresponds with the pneumonia lines on the other two charts. The cerebro-spinal meningitis line represents 162 cases of deaths from that disease in Boston, from 1879 to 1887 inclusive.



Monthly Chart of Cases of Pneumonia at the Massachusetts General Hospital (412 cases) from 1870 to 1885 inclusive, and Monthly Mortality from Cerebro-Spinal Meningitis (162 cases) in Boston from 1879 to 1887 inclusive.

A consideration of these facts tends to the conclusion either that ordinary croupous pneumonia has a different origin from the pneumonia which is produced by the same organism as cerebro-spinal meningitis, or that certain uncomplicated cases of cerebro-spinal meningitis are caused by a different organism from the one that is thought to produce both diseases. The investigations of Weichselbaum and Goldschmidt already referred to would tend to confirm this latter view.

With acute ulcerative endocarditis on the one hand and acute rheumatism on the other, cerebro-spinal meningitis also seems to have some relation as shown by bacteriological as well as clinical studies. Much however, remains to be done to clear up this interesting and perplexing subject.

The diagnosis of cerebro-spinal meningitis, is very simple in many cases where the disease appears in its fully developed form, with characters so distinct that they cannot be mistaken; particularly is this the case in epidemics. Sporadic cases, however, although often very characteristic are sometimes very obscure to the physician, particularly from the fact that he may not be on the look-out for this disease, and does not consider it in making his diagnosis. A typical case includes the following symptoms: rapid onset, vomiting, chill, intense headache, stiffness and contraction of the muscles of the neck, pulling the occiput back towards the spine; opisthotonos, pain in the neck and back, which with the headache comes and goes abruptly; contraction of muscles of extremities, delirium, convulsions, coma; hyperaesthesia of the skin, herpes of face or elsewhere, and occasionally other lesions of the skin in the form of petechial and larger ecchymoses, roseola or erythema, together

with an irregular, elevated temperature. The symptoms of Kernig, that is to say, the spasmodic contraction of the flexors of the legs on flexing the thigh on the pelvis, can nearly always be obtained in cases of cerebro-spinal meningitis. It is not, however, diagnostic of this disease as it has been found in purulent or tubercular meningitis or other diseases of the brain and its meninges.

It is a disease which, both in times of epidemics, and when occurring sporadically, may run a violent course, ending in death within twenty-four hours, the shortest case on record being one of death in three and one-half hours, reported by Jewell.¹⁸ This is fulminant cerebro-spinal meningitis, the *foudroyante* form of the French. Secondly, it may appear as the abortive form, with slight or moderately severe headache, stiffness of the neck, and perhaps a few herpes vesicles, and end in recovery in a few days. Thirdly, the so-called intermittent form. This latter form, a form recently described by Henech¹⁹ as occurring in Berlin, is characterized by intermissions at irregular intervals, when not only is the temperature normal, but the other symptoms may almost entirely disappear. Thus a child in good health is suddenly seized with vomiting, pain in the head, fever, and rigid drawing back of the head, so that in some cases the occiput may even touch the back. The pain in the head is often severe, spoken of by older patients as boring and intense beyond description, and the child constantly screams and tosses about the bed. Pain in the neck and back may also be present, and the pain is occasionally referred to the epigastric region, as in cases of dorsal caries. Cutaneous hyperaesthesia may or may not exist, and is difficult to determine in children. The other symptoms previously mentioned may also be present. In the course of one or two weeks the fever abates, and with it the other symptoms, and the prospect of speedy convalescence brings joy to the family. The temperature remains normal, the appetite returns, but usually a slight stiffness of the neck muscles exists. After an interval of one or several days, an attack similar to the initial one takes place, with elevation of the temperature, which again lasts for a longer or shorter period. In this way, with exacerbations and remissions or intermissions, the disease may last for weeks. Sometimes the patient sinks into a typhoid condition, and Hirsch makes a fourth group of typhoid cerebro-spinal meningitis.

All these forms are found both in epidemics and in the naturalized cases, but, according to J. Lewis Smith,²⁰ the latter are accompanied by less profound blood changes; out of a considerable number of epidemic cases observed by him in the last ten years, he has not seen any with ecchymoses, which are so common in some epidemics, and from which the name of "spotted fever" is derived.

In making the differential diagnosis of this disease from others, fulminant cases are generally easily recognized by their characteristic symptoms and their intensity; but in those that terminate within a few hours in death the diagnosis may be very uncertain. Cases of cerebral or meningeal hemorrhage, with convulsions, rapidly ending in death, may simulate cerebro-spinal meningitis, and, according to J. Lewis

¹⁷ Quoted by Whittaker. Ref. Handb. of Med. Sc., Vol. I, p. 37.

¹⁸ Pathology of Cerebro-Spinal Meningitis. *Charité Annalen*, XI, 1886, p. 575.

¹⁹ N. Y. Med. Rec., Nov. 21, 1883.

²⁰ C. W. Townsend. Analysis of 412 cases of Pneumonia. Boston Medical and Surgical Journal, March 25, 1886.

Smith, cases are sometimes called infantile cerebral paralysis. In both these cases the absence of much elevation of the temperature and the evidence of localized cerebral disturbance would be of help in making the diagnosis.

From tubercular meningitis the diagnosis can generally be made, although this is sometimes difficult, or even impossible. The gradual onset of tubercular meningitis, as distinguished from the abrupt onset of cerebro-spinal meningitis, the family history of tuberculous, and the evidence of a deposit of tubercles elsewhere in the body, are of importance in making the diagnosis. It is necessary to remark here that prodromal symptoms of chilliness, fever, headache, and vomiting may sometimes precede for several days the onset of cerebro-spinal meningitis. Retraction of the head is seen in some cases of basilar tubercular meningitis, but is rarely as marked and persistent as in cerebro-spinal meningitis. If, however, the tubercles have, also, a spinal distribution, as well as cerebral, the symptoms of cerebro-spinal meningitis are necessarily exactly reproduced. In the tuberculous forms, however, herpes or the other skin lesions described above do not occur.

In simple meningitis we have the history of traumatism or of disease of the middle ear to aid us in making the diagnosis. True cases of cerebro-spinal meningitis have, however, been said to follow a blow on the head, or where the brain has been disturbed by strong emotions, as grief or anxiety. Jaffé²¹ relates a case where, after fracture of the skull from a fall, vomiting, stiffness of the neck, and convulsions occurred, with death on the third day. The autopsy showed cerebro-spinal meningitis.

The onset of an acute disease in children, like scarlet fever or lobar pneumonia, may be marked by severe cerebral symptoms, vomiting, retraction of the head, convulsions, stupor, together with high temperature, and may lead one to suspect cerebro-spinal meningitis, and it is necessary to reserve the diagnosis and watch the progress of the case. In scarlet fever, the redness of the throat, the existence of an epidemic of the disease, the history of exposure, and later, the appearance of the characteristic rash, makes the diagnosis plain. There are cases of scarlet fever, however, where death occurs within twenty-four hours without the appearance of the rash, and with symptoms very similar to fulminant cerebro-spinal meningitis. In these cases, Dr. Mason²² remarks that even an autopsy might not settle the diagnosis.

In lobar pneumonia, the frequent absence in children of the cardinal symptoms found in the adult—chill, rusty expectoration, pain near the nipple, and even, in some cases, of cough, with often a delay of several days in the appearance of the signs in the lung—makes the diagnosis obscure. Although vomiting, delirium, drowsiness, and one or two convulsions often occur in these cases of simple pneumonia, if we find persistent retraction of the head, arching of the fontanelle, severe headache, and retardation of the respiration, with frequently recurring convulsions and coma, together with the signs in the lungs, the existence of both cerebro-spinal meningitis and pneumonia is probable. An irregular and intermittent rapid pulse in the pneumonia of children, as well as in other febrile diseases of children, is not uncommon, but, ac-

cording to Holt,²³ a slow, irregular, or intermittent pulse may be found in meningitis, but not in pneumonia. The persistent high temperature, with little difference between morning and evening, is characteristic of pneumonia, but not of meningitis. Ziemssen,²⁴ however, says that the temperature and respirations of pneumonia may continue unchanged, notwithstanding the presence of cerebro-spinal meningitis.

From typhus fever, with which cerebro-spinal meningitis was formerly confused, it can be distinguished by several marked features. Typhus fever is highly contagious; the patient does not, as a rule, take to the bed until the second or third day. A copious macular eruption appears generally on the fourth or fifth day. Intense headache and pain in the back, with retraction of the head and opisthotonos, are rarely found in typhus fever. The gradual onset of typhoid fever, together with the abdominal symptoms, make the differential diagnosis in this case clear. J. Lewis Smith relates the case of an infant with a temperature of 104°, stiffness of the neck, and some retraction of the head, which led him to consider cerebro-spinal meningitis, but a more careful examination showed a retro-pharyngeal abscess and beginning cervical caries.

The diagnosis of abortive cases is often only conjectural. Thus, during the prevalence of the disease, cases are frequently observed of lassitude, pain in the nape of neck and in the head, with slight retraction of the head in some cases, and recovery in a few days. Such cases are occasionally seen when no epidemic prevails, but one would hardly be justified in making the diagnosis of cerebro-spinal meningitis unless undoubted cases existed in the same place at the same time. Thus a breast-fed child five months old was seen by me November 29, 1886, who for three days vomited occasionally, nursed but little, cried as if in pain, and drew the head back rigidly, so that the occiput at times touched the spine. The head was kept in this position only part of the time. The fontanelle was arched and the temperature moderately elevated. Complete recovery followed. In a second case, aged fifteen months, where the parents had already made the diagnosis of "water on the brain," similar symptoms lasted five days, and were followed by complete recovery. During an epidemic, these cases might be called abortive cases of cerebro-spinal meningitis; at other times, simple examples of the great reflex nervous irritability in children resulting from insignificant causes.

A temporary pain and stiffness of the neck muscles may be caused by muscular rheumatism. In these cases, which West speaks of, there is an absence of headache, and recovery takes place in a few days, and is aided by warm or counter-irritant applications.

The prognosis in cerebro-spinal meningitis varies extremely, and the mortality is stated at from twenty to seventy-five per cent, but many very severe cases recover. Smith says that "patients who live till the close of the second week without serious complications will probably recover," the danger after this period being mostly from malnutrition and exhaustion. Henoch²⁵ states that the prognosis is very favorable in the naturalized, intermittent cases observed by him in Berlin; he has never seen a death during an exac-

²² Deutsch. Archiv. f. Klin. Med., 1882, xxx, p. 332.

²³ Boston Medical and Surgical Journal, 1884, cx, p. 121.

²⁴ Med. Rec., N. Y., April 7, 1888, p. 285.

²⁵ Ziemssen's Cyclic, Am. Ed., Vol. II, p. 663.

²⁶ Loc. cit.

erbation or relapse. Kernig²⁶ reports a case that lasted two and a half months, and finally died of marasmus, and Larrabee²⁷ one that died in a similar way at the end of sixteen weeks. Smith reports one that died in eighteen weeks, and another, a boy four and a half years old, whose head was retracted for four and a half months, who became greatly emaciated, and who was unable to get out of bed for five and a half months, but finally completely recovered.

For treatment, opium, often in large doses, is necessary to relieve the agonizing and exhausting pain; bromides are occasionally sufficient; cold applications to the head and spine and a careful sustaining diet, with the use of stimulants in protracted cases, are indicated.

The following two cases illustrate very well two forms of the disease, the fulminant and the intermittent. The first I saw with Dr. F. M. Briggs, to whom I am indebted for allowing me to report the case. The diagnosis in the second case was confirmed by Dr. Rotch and Dr. Buckingham, who saw the case with me:

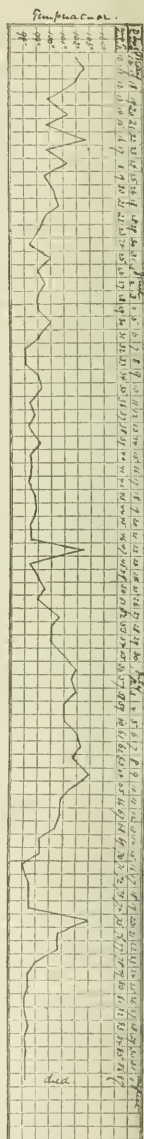
CASE I. Male, aged two months, breast-fed; previously well. After three days of fever and great fretfulness, the head was drawn back so that the occiput nearly touched the spine, and the infant had several slight general convulsions. When seen at this time, the head was rigidly retracted, the eyes open and staring, the pupils reacting sluggishly to light. Fontanelle arched. Redness and swelling of the joints of fingers and toes, which was marked at first, had nearly disappeared. No eruption on the skin. Abdomen distended and tympanitic; legs rigidly drawn up. Child died two days later without developing any other symptoms. The swelling of the joints is especially interesting, and has been noted by several observers in epidemic cases of cerebro-spinal meningitis.²⁸

CASE II. Joseph X., aged four and one-half years, first seen May 16, 1887, and the following history obtained from the mother. Family history good; previously well with the exception of measles when one year old. He began suddenly to vomit on May 9th, at 5 P.M., the vomiting continuing at intervals for two days. From the first he complained of severe pain in the head and abdomen. From the second day the head was rigidly drawn back, and although rational most of the time he had occasionally been mildly delirious. From the first had been feverish; no cough; no convulsions; bowels moved to-day for the first time for a week. Hot applications to the abdomen had given no relief from the pain.

Examination showed a pale, fairly nourished boy, with brown-coated tongue; pulse 124, regular; temperature 102°; respirations 20, regular. Head drawn back so as nearly to touch the spine, the muscles of the neck being rigidly contracted. Slight opisthotonos. No contractions of muscles of limbs. The symptom of Kernig was present markedly. No tenderness along the spine; cutaneous sensibility everywhere normal; no cutaneous eruptions or ecchymoses. Pupils regular, react equally to light; no strabismus

or photophobia. Nothing abnormal on thoracic or abdominal examination. Patient tossing about the bed moaning and crying out; expression that of great pain.

He was put on a milk diet and pot. bromide ordered every two hours. As this gave no relief to the intense suffering, morphia, in doses of one-thirty-second of a grain was given. This was repeated by the mother so frequently that the child had one-fourth of a grain in three hours, at the end of which time he fell asleep to awake in eight hours crying out with pain in his head. Ice to head and spine gave no relief, but morphia, to the amount of one-sixth to one-third of a grain during the twenty-four hours, controlled the pain and quieted the restlessness which was fast wearing out the nurse as well as the patient. On the 24th day of the disease the temperature, which had varied between 100° and 103° (vide chart), sank to normal, where it remained till the forty-seventh day. During this interval the head was but slightly retracted and the patient seemed to be generally free from pain, but remained in a very listless condition, not speaking, taking but little nourishment and stimulant, becoming emaciated, passing urine and feces involuntarily, and vomiting occasionally. Nutritive enemata were not retained after a few days' trial, but the 41st day peptonized milk was retained by the stomach, and on the 46th day he improved so much as to take gruel with readiness, and talked and laughed. On the 47th day, June 22d, a relapse occurred, the temperature going up to 103.6°, the head was rigidly drawn back, the eyes were staring, and pain was present. The symptoms of Kernig which had never entirely disappeared, again became well-marked. On the 66th day convulsive movements of left arm and leg with turning in of left eye occurred. Several days previous to this relapse, a numerous crop of sudamina appeared on neck and trunk, and a fugitive erythema and macular eruption on neck and face, lasting only a few hours. From the 61st to the 66th day his body was covered with a macular eruption, the macules varying in size from a pin-head to a pea. At no time were ecchymoses to be seen.



²⁶ Berlin Klin. Wochenschr., 1884, No. 52.

²⁷ Richmond Jour. of Med., Dec., 1872, p. 729.

²⁸ Since this paper was written, I have had a fulminant case of cerebro-spinal meningitis in a female infant of four and one-half months, fatal in twenty-four hours, beginning suddenly with vomiting and high fever, which reached 106°. In the last twelve hours the skin was spotted with ecchymoses, and frequent, irregular, convulsive movements occurred.

Repeated examinations of chest and abdomen showed nothing abnormal.

From the 71st to the 73d day the temperature was again normal, nourishment was taken well, the neck was straight, and general appearances were encouraging, but on the 74th day he again had convulsive movements, most marked on the left side of the body, the head was again drawn back, and at noon the next day his temperature was 103°. The pulse, which during the entire illness ranged from 120 to 140, and had previously been regular, was now at times irregular and intermittent. The bowels were generally constipated. After this, although the temperature came down to normal, he failed rapidly, and on August 1st, the end of the third month or the 87th day of the disease, when he was so emaciated that the finger and thumb could easily encircle his thigh, he quietly died.

A CASE OF CEREBRO-SPINAL MENINGITIS.¹

BY HENRY B. JACOBS, M.D., BOSTON.

IN connection with the subject under discussion, perhaps this case may prove interesting. I am able to report it through the kindness of Dr. Whittier, into whose service it came at the Massachusetts General Hospital, January last, during my term as house-pupil.

The patient, living near the junction of Joy and Cambridge Streets, thirty-eight years old, mother of two children, aged eighteen and twenty respectively, was a strong, well woman till six days before entrance, without history of previous sickness or traumatism. One week before coming to Hospital, on a damp, cold day, she had worked unusually hard, most of the time out-of-doors. The next day she had a slight cough, some headache and backache, and felt tired and without appetite. She assumed she had taken cold, and thought little of it; her catamenial period was due, and to this, also, her symptoms were partly attributed.

In the next day or two, however, her headache increased in severity. She became feverish and weak, and had to take to bed. On the fourth day of her illness she was noticed to be somewhat irrational, and on the fifth and sixth days was in violent delirium, and only with great difficulty kept in bed.

She entered on the seventh day of her sickness, and the following record was made by the house-pupil: Patient a well-nourished woman of medium stature, in state of rather violent delirium, noisy and incoherent, extremely restless, struggling almost incessantly to get out of bed. Pupils alike, somewhat contracted, reacting but slightly to light. External examination of ears negative; teeth covered with sordes; tongue dry, brown; hands and feet cold and cyanosed. Nothing abnormal found on examination of lungs and heart, except slight feebleness and irregularity in action of the latter. Abdomen soft, not distended, generally resonant. No rose-spots. No apparent increase in hepatic or splenic dullness. Irritation of the skin produced the *tâches cérébrales*. Knee-jerk present and perhaps slightly exaggerated. No ankle clonus. No apparent hyperæsthesia, except on posterior surface of head and neck, where pressure causes facial contortions and groans indicative of pain. Further

examination shows marked rigidity of posterior cervical muscles, though not sufficient to produce opisthotonos, yet sufficient to hold head in line of vertebral column, in opposition to considerable force. Catamenia present. Temperature 100.2°, pulse 81, respiration 40.

Urine by catheter: high-colored, acid, 1024, slight trace albumen, heavy sediment, excess of urates, occasional hyaline and granular casts.

In the following days she steadily failed. Though somewhat quieted by anodynes, there was almost constant movement of the arms and legs, constant incoherent delirium, which became less violent in the last day or two, and gave way to deep coma in the last six hours.

The hyperæsthesia of the cervical region continued, while the rigidity of the cervical and dorsal muscles became so marked that the position in bed was one of semi-opisthotonos; the trunk, as low as the hips, could be raised with the hand under the back of the head. The *tâches cérébrales* and the lividity of the extremities persisted, and large, irregularly-shaped blotches of a bluish hue appeared upon certain parts of the body. The knee-jerk was constant and somewhat exaggerated. Loss of voluntary control of the sphincters came on. Toward the end there was considerable convulsive fibrillary twitching, or perhaps better, quivering of muscles of trunk and extremities.

Temperature was never extreme. Highest on morning of death, when it was 103°.

Pulse increased in rapidity and failed in strength from the first. Last time counted was 190.

Died on the fourth day after entering the Hospital, in the tenth day of her illness.

Dr. Fitz, who made the autopsy twenty-seven hours after death, reported:

Rigor mortis present; no abnormal external appearances.

Calvaria unusually thick and dense.

Dura mater tense. Sinuses free from abnormal appearances. On removal of *dura mater*, the pia mater over the convexities, especially over the vertex, extensively infiltrated with opaque, yellow material, soft and friable, most abundant in furrows, but continued over convolutions. Pia mater at base showed nothing abnormal. More careful examination of brain showed small patches of sclerosis on the vertex, just below the gray matter. Behind the posterior cornu in left lateral ventricle was a cyst, the size of a cherry. *Dura mater* torn from base of skull: no abnormal appearances in bones of base. Roofs of middle ears crushed without disclosing abnormal appearances.

Pericardium showed no abnormal appearances, with exception of a fibrous thickening, warty in character, near the base.

Heart. Right side distended with clotted blood. Valves, cavities, and muscular substance showed nothing abnormal.

Lungs both collapsed, injected posteriorly; otherwise not remarkable.

Spleen slightly increased in size, of diminished consistency. On section, paler than normal from increase in pulp.

Kidney not remarkable in shape or consistency. On section, cortex paler than normal and more opaque.

Bladder distended with some ten ounces of urine, which was opaque and contained numerous slimy shreds; odor somewhat offensive. Mucous membrane

¹ Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Suffolk District Medical Society, May 9, 1888.

of bladder swollen, injected, and somewhat opaque, with numerous slimy shreds and flakes.

Uterus. The interior showed injection of mucous membrane, which was besmeared with bloody fluid. A dark, corpus hemorrhagicum in ovary as large as pea.

Stomach, intestines, and liver showed no abnormal appearances.

Diagnosis: acute leptomeningitis, hyperplastic spleen, granular degeneration of kidneys, acute cystitis, recent menstruation, hyperostosis of cranium.

Is this a case of endemic cerebral meningitis? If so, it is an interesting one in that it is an isolated, sporadic case, and in that the pathological lesion was limited to the convexities, the basilar and spinal meninges showing no evidence of an inflammatory condition. The granular degeneration of the kidneys and the hyperplastic spleen point toward an infection. If not endemic, then it must be either tubercular meningitis or meningitis secondary to some other purulent inflammation elsewhere. The woman's general condition, her heredity, and the post-mortem appearances fail to reveal anything of a tuberculous nature; and a most thorough search, both ante- and post-mortem, did not disclose a purulent inflammatory process to which the meningitis could have been secondary either by extension or by metastasis.

TWO CASES OF SPINAL MENINGITIS.¹

BY HENRY JACKSON, M.D., BOSTON.

CASE I. Ellen Ritchie, five years old. Patient first seen December 26, 1887. Father and mother well; two sisters, both well. Previous health good.

Two days ago, suddenly taken sick; vomited frequently; constipation; complained of headache. The mother noticed that the head was thrown backward. Child cried a good deal, especially when moved. Head retracted; muscles at the nape of the neck are stiff; legs are flexed, and the child cries when any attempt is made to straighten them; when the thigh is flexed, the lower leg is flexed upon the thigh; pupils normal; no photophobia; no opisthotonos.

December 29th. No return of the vomiting. Perfectly conscious, and does not cry unless she is moved, especially if lifted by the shoulders. No change in neck.

January 1st. Temperature normal; pulse rapid and irregular. Appears weaker; does not complain of headache. Takes food fairly well.

January 5th. Very weak; pulse 160, irregular; temperature 105°; no chill, and no apparent cause for the sudden rise of temperature.

January 7th. Better; pulse rapid, but regular.

January 11th. Patient seen by Dr. Rotch; no change in physical condition. Dr. Rotch thought the symptoms pointed to spinal rather than cerebro-spinal meningitis.

After this time gradual improvement in all symptoms, and on January 25th was able to walk about the room without assistance. In latter part of February, child seemed to be perfectly well.

CASE II. John Philip Irvin, fifteen months. Child seen first on February 8th: father and mother both

well. It was an only child, and previous health had been good.

February 4th. The mother noticed that he staggered as he walked; his head was retracted; vomited several times; constipation.

When seen, child cried if touched; head retracted; marked pallor; pupils normal; no photophobia; no opisthotonos; when thigh was flexed upon the abdomen, the lower leg was flexed upon the thigh; dyspnoea; examination of heart and lungs negative; temperature 103.5°, pulse 140, respiration 45.

February 9th. Less dyspnoea; nurses well; no change in physical condition.

February 13th. Gradual fall in temperature and pulse during last few days; sleeps fairly; no change in the head; nurses well.

February 17th. After the temperature had been normal for a few days it again rose to 103°; pulse rapid, but of fair strength and regular. In a consultation, the suggestion was made that the symptoms might be due to rheumatism in the muscles of the back of the neck. In consequence, the treatment was changed. Massage and hot applications were made to the back of the neck, instead of cold applications. Internally, salicylate of sodium was substituted for iodide of potassium and bromide of sodium.

February 22d. Has vomited occasionally; tongue coated.

February 27th. Salicylate of sodium omitted, on account of vomiting. Child seemed weaker, though temperature was normal and pulse less rapid. No change in the condition of the head.

March 4th. For several days there has been occasional vomiting; for last twenty-four hours the child has vomited every time he nursed. Temperature 98°, pulse 200; emaciation marked; pupils normal; head retracted as since the beginning.

March 6th. Sudden drop in the pulse to 120; head more retracted; subsultus tendinum; appeared to be failing fast.

March 7th. Very weak; opisthotonos for first time; when quickly moved, general clonic convulsions; convulsions.

March 8th. Opisthotonos excessive; the heels and head made almost a semicircle. Pulse 200.

March 9th. Died at 6.30 A. M. No autopsy.

In both these cases the diseases to be considered were:

(1) *Tubercular meningitis*, rendered improbable by the acute onset in each case, by the absence of any evidence of intracranial pressure, and the family history. This disease is eliminated in one case by the recovery, and rendered very improbable by the whole course of the other.

(2) *Caries of cervical vertebrae* eliminated by history and absence of any local sign of inflammation.

(3) *Rheumatism of muscles of neck*. I considered this improbable, on account of the marked constitutional disturbance, high fever, rapid pulse, and by the existence of Koenig's phenomenon; that is, flexion of the leg on the thigh when the thigh is flexed on the abdomen, which seems to indicate spinal irritation, or, at least, peripheral irritation in the sciatic nerve.

Acute cerebro-spinal meningitis. On account of the absence of any symptom of marked cerebral disturbance in these cases, I preferred the diagnosis of acute spinal meningitis, as being anatomically more correct.

¹ Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Suffolk District Medical Society, May 9, 1888.

PROGRESS IN DENTISTRY.

BY W. H. ROLLINS, M.D., BOSTON.

NEW FORMATION OF DENTINE.¹

THERE are two kinds of cells which form the dentine: The odontoblasts, which are present as a peripheral layer of closely-pressed cells, with flat ends toward the forming tooth; the fibre-cells, which are pear-shaped, and lie between the odontoblasts. The fibre-cells have two processes, one extending into the pulp, the other into the forming dentine. Unlike the odontoblasts, the fibre-cells never rest with flat ends toward the dentine. The odontoblasts form the basis substance of the dentine, and the fibre-cells the dentinal fibres.

FORMATION OF DENTINE.²

Dentine is formed from connective tissue, first visible as a papilla, composed of medullary tissue, holding an irregular, myxomatous network. Shortly before calcification there appear at the periphery of the papilla elongated corpuscles, which are the odontoblasts. These do not change directly into the dentine, but break up into medullary tissue corpuscles, which are then directly transformed into dentine basis substance by calcification. The dentinal fibres are direct offshoots of the odontoblasts.

FORMATION OF CEMENTUM.³

The cement of the teeth arises from medullary tissue, which becomes the seat of a deposition of lime salts, before any cement corpuscles are visible. In the next stage of development, these medullary corpuscles are arranged irregularly around the cement corpuscles, which have now made their appearance, and remain permanently free from deposits of lime salts during the process of calcification. The cement corpuscles send soft filaments from their surfaces in radiating lines between the medullary corpuscles. The cement corpuscles and their filaments originate from the bridges traversing the interspaces in the medullary substance.

TEETH OF RABBITS.⁴

The writer denies the presence of a layer of cement over the enamel. He also points out the marked difference in the direction of the dental tubes. In the portion of the tooth anterior to the pulp-chamber the tubes are arranged with great regularity, running in oblique courses either downward or upward, and becoming nearly horizontal as they approach the border of the dentine. In that part of the tooth posterior to the pulp-chamber the tubes are arranged very irregularly, and not at such acute angles.

RIGHT UPPER CANINE IN LEFT ORBIT.⁵

From the left orbit of a child two years old, a tumor was removed which contained a right upper canine tooth. An examination of the child's mouth showed the usual number of teeth, and the jaws were large and perfectly developed. The author of the paper considers the case unique and interesting in its bearing on the development of the jaws, and supposes that the transposition must have taken place in the early embryo, the germ developing into the perfect tooth in its new position.

THE FIRST PERMANENT MOLARS.⁶

Much has been said in support of the usual practice of extracting these teeth, but their title to longevity can only be questioned under neglect. They are the keystone molars, by means of which the integrity of the arch is maintained, and without which the jaw contracts abnormally. The extraction of these teeth at an early age is detrimental to health, for it leaves too little masticating surface, and later in life they are essential to a proper poise in the distribution of the various strains to which the teeth are subjected in mastication. Their extraction leads to a tipping out of line of the other grinding teeth, so that their surfaces do not meet fairly, and on this account mastication is imperfect.

EXTRACTION AND FILING.⁷

Extraction for the relief of crowding is not wise, as it leads to worse evils than the original one. Among these evils are a tipping out of line of the teeth, so that their masticating surfaces do not come in contact, and also spaces are formed which are difficult to keep clean, so leading to early decay. Filing, as a means of preventing decay, or to enable the teeth to be filled without wedging, cannot be too strongly condemned, for the teeth come together again after a few years, and then are more crowded than before, and more difficult to keep clean, as they are in contact over a greater extent of surface. Filing, like extraction, also leads in time to the same evils of tipping out of line, with its attendant results.

ATTACHMENT OF IMPLANTED TEETH.⁸

As a result of the microscopical examination of a tooth implanted by Younger's method, the writer concludes that the inflammation consequent to the formation of the new socket produces an infiltration of osteoblasts into the cementum of the implanted tooth, which results in bony anchylosis, thus fixing the tooth firmly in place. He believes that not only the cementum recovers its life, but also the dentine of the root, his sections showing that the dental fibres were not shrunken, and that the peripheral cells of the pulp, the odontoblasts, were alive.

He suggests that the method of implantation may be used to furnish attachments for artificial teeth in edentulous mouths, and presents a case in which this treatment was successful.

ATTACHMENT OF IMPLANTED TEETH.⁹

This writer has examined microscopically a tooth which had been implanted in the mouth of Dr. Younger, who had purposely tried to prevent anything but a soft tissue union of the tooth by working it with the tongue, and occasionally with his fingers, his object being to show that the soft tissues of the new socket united with the dried membrane of the root, and that the latter regained its normal condition. Heitzman found no living tissue between this tooth and the socket, nor were any of the tissues of the tooth alive. The only attachment was by granulation tissue, which had arisen from the new socket and entered the bay-like indentations of the root, thus forming a fairly firm attachment. He states that these bay-like indentations found in the root were produced by a process of

¹ Andrews in Dental Cosmos, November, 1887.² Boedecker and Heitzman in Independent Practitioner, p. 346, 1887.³ Boedecker and Heitzman in Dental Cosmos, p. 397, 1887.⁴ Abbot in Dental Cosmos, p. 605, 1887.⁵ Cousins in Dental Register, p. 342, 1887.⁶ Weld in Independent Practitioner, p. 80.⁷ Davenport in Dental Cosmos, p. 413, 1887.⁸ Curtis in Dental Cosmos, p. 305, 1888.⁹ Heitzman in Dental Cosmos, p. 331, 1888.

absorption that took place after the tooth was planted. In this respect the tooth presented the same appearances which were first pointed out in this JOURNAL in 1877, as occurring in the unsuccessful cases of transplanted teeth. This investigation of Heitzman's cannot be considered as proving that there may not be a perfect union in the case of an implanted tooth. It simply shows the condition of a tooth in which the operation has not been entirely successful. Even after the root has been partly absorbed, there may be a new formation of bone on the surface, filling up the irregular cavities produced by absorption and rounding out the root, so that it is not a source of irritation. That this takes place in transplanted teeth, I showed in this JOURNAL some years ago, and the circumstances are so similar I have no doubt that it takes place in a certain per cent. of successful cases of implanted teeth, when, after a period of doubtful utility, the implanted tooth becomes firm again.

DERMOID CYST.

One of the most remarkable of dermoid cysts is figured by Homans in this JOURNAL, page 252, 1888. It contains a great number of beautiful teeth.

MICROSCOPICAL APPEARANCES OF ENAMEL IN ERODED TEETH.¹⁰

The granularity of the enamel is much increased in the transverse striations of the prisms and in the brown lines of Retzius. The interspaces of the enamel are either widened or obliterated. In the latter case the whole tissue appears in confusion, looking like drops of rain on a window-pane. He regards erosion as a disease of the enamel, as the dentine, when attacked, shows only a widening of the tubes which open with funnel-shaped mouths on the eroded surface.

THE BLACK FILM OF EROSION.¹¹

In all cases of erosion of the teeth there is present, as a covering to the eroded surface, a thin film of epithelial-like scales, circular in outline, black in color, and firmly attached to the surface of the tooth.

Strong friction with a tooth-brush and powder daily does not remove the film, on account of its firm attachment. Hutchinson is of the opinion that this film is an essential factor in erosion, but is at present unable to explain its significance.

EFFECT OF THE SUPPRESSION OF THE SALIVARY SECRETIONS ON THE TONGUE.¹²

A case is reported in which there had been no saliva for ten years. The tongue was bright red, perfectly smooth and dry. He explains the perfect smoothness by saying that the epithelium not being kept moist by the saliva cannot assimilate the non-nutritive furnished it by the blood and so remains stunted. Several other cases of a similar nature are mentioned in the *Lancet*, and on page 257 Harkin reports the successful use of chlorate of potash in such cases.

MULTIPLE SALIVARY CALCULI.¹³

Three salivary calculi, weighing thirty-eight grains, were removed from Bartolin's duct in a man aged seventy. They had given rise to salivation and to pain in swallowing.

DRYNESS OF THE TONGUE IN GLYCOSURIA.¹⁴

This writer states that the dryness of the mouth which is such a distressing symptom in this disease is due to the strong osmotic action of the sugar in the blood.

SPASMUS NUTANS IN DENTITION.¹⁵

The patient a girl ten months old, when first seen, had a rotatory motion of the head; when the head was held the eyes rolled from side to side. A fortnight later, under treatment with bromide of potash, there was no improvement; but after six weeks the child was well, and had cut two teeth. There seems to be little doubt of the teeth acting as an exciting cause in this case.

TALKING WITHOUT A TONGUE.¹⁶

The whole of the tongue was removed for flat-celled cancer. When the wound had healed, the woman had no difficulty in speaking plainly. This case is interesting when taken in connection with others of a similar kind, as it explains in a very natural way the case of the African confessors, which is the most authentic of the various miracles of the Roman church.

About the year 466, by order of Hinneric, certain Catholics, who were assembled for religious purposes, in the town of Tipasa, had their tongues torn out by the roots. They recovered however, and spoke as well as before. This is the only one of the nine miracles specified by Newman, which does not rest on merely indirect evidence.

PAIN IN THE TEMPERO MAXILLARY ARTICULATIONS CAUSED BY IRREGULARITY OF THE TEETH.¹⁷

The patient complained of severe pain in mastication. The teeth were sound and all erupted. None of them were tender. When the patient closed his mouth, the incisors met at the cutting edges, no other teeth touching. The molars were separated by a sixteenth of an inch. It was therefore thought probable that the pain came from the long-continued strain and pressure of the muscles and articulations as the result of attempts at mastication. A regulating plate was therefore applied with the result of bringing the under front teeth inside of the upper ones. When this result had been brought about, the molars articulated, and there was no more pain.

UNDUE PROMINENCE OF THE UPPER JAW.¹⁸

One of the most difficult cases for regulating is that of projecting upper front teeth, the lower incisors striking the gum far behind the upper; the usual treatment has been to extract a tooth on each side, either a first molar or a second bicuspid, and then with appliances draw back the incisors into the space thus gained. Colligan simply spread the upper arch about a centimetre in its transverse diameter, and thus allowed the front teeth to fall back of their own accord. This case illustrates a tendency to which in a former report I gave the name, Progression in Teeth. It shows that the cause of the forward projection of the incisors and canines was pressure from behind. When this was removed, the pressure of the lips was enough to force back the front teeth.

¹⁰ Underwood in British Journal of Dental Science, p. 213, 1888.

¹¹ Hutchinson in British Journal of Dental Science, p. 203, 1888.

¹² Dickinson in London Lancet, p. 613, 1888.

¹³ Boston Medical and Surgical Journal, p. 386, 1888.

¹⁴ Dickinson in London Lancet, p. 659, 1888.

¹⁵ Tordens in London Lancet, p. 228, 1888.

¹⁶ Beech in Boston Medical and Surgical Journal, p. 375, 1888.

¹⁷ Goodard in Dental Register, p. 690, 1887.

¹⁸ Colligan in Dental Cosmos, p. 318, 1888.

TREATMENT OF ALVEOLAR ABSCESS BY INJECTING GUTTA-PERCHA.¹⁹

Chronic alveolar abscess is a difficult disease to treat. Almost everything has been recommended for it, and in many cases every remedy mentioned short of extraction may be tried without success. In one such case I have tried Jennings's method with success. He dissolves gutta-percha base-plate in chloroform to a thick cream, and injects the solution into the abscess cavity with a syringe.

DENTAL IRRITATION AND EPILEPSY.²⁰

It is assumed that in persons subject to epilepsy, the higher nerve centres are in a state of high tension, of unstable equilibrium, so that it only takes a stimulus of definite quantity or intensity to excite the explosive discharge. To prove that the teeth, when diseased, may furnish the necessary stimulus, he gives sixteen cases in which they seem to have brought on the attacks.

ACTINOMYCOSIS.²¹

In enumerating the channels through which the fungus that produces this disease may enter the system, Eve mentions carious teeth as being of great importance. The germs may find their way not only directly through the medium of exposed or dead pulps in teeth with open cavities, but also through abrasions of the tongue produced and kept up by the sharp edges of the carious teeth. He believes the disease to be not uncommon, and thinks it has frequently been mistaken for some other form of tumor.

HEADACHE FROM WEARING ARTIFICIAL TEETH.²²

The patient, a man in good health, had his upper teeth out and began to wear a plate. A few days after he felt a burning sensation in the roof of his mouth, which was followed by headache. On the removal of the plate the symptoms disappeared, returning whenever the plate was worn. The plate was of red vulcanite, and to be sure that the symptoms were not due to the vermilion with which it was colored a plate of black rubber was substituted, but as there was no improvement, at last a metal plate was made. This obviated the difficulty.

THE BAROMETER AND TEETH.²³

In the majority of cases of pulp inflammation, the patients present themselves for treatment while the barometer is falling. It seems probable, therefore, that the diminished atmospheric pressure on the surface of the body leads to a distention of the superficial bloodvessels. When, as in the case of the pulps of teeth, these vessels are contained in unyielding cavities with hard walls, the distention of the vessels produces undue pressure on the nerves and so severe pain.

CHRONIC DIARRHŒA FROM WEARING A PLATE.²⁴

For six years the patient had worn a red vulcanite plate. During this time he had suffered from chronic diarrhœa. On learning that the affection had begun within three months after the plate was inserted, Bryant decided this was the cause of the diarrhœa, and recommended that the patient should get on with-

out teeth. He followed this advice and in two months was well.

ANTISEPTIC MOUTH-WASHES.²⁵

An efficient mouth-wash cannot be constructed without the use of bichloride of mercury. There is no danger in using this, for in the proportion required, one part in two thousand of water, it would take one hundred days to swallow the maximum daily dose, while in point of fact there is no reason why any should be swallowed in rinsing the mouth. No doubt Miller is correct in saying that the mouth cannot be sterilized without the use of bichloride, but if we use this in a mouth-wash we must give up another equally important ingredient. I refer to an alkali in some form. Patients will not use any form of mouth-wash with sufficient regularity or thoroughness to keep the mouth thoroughly free from germs, and so there is always fermentation going on, and in most mouths the saliva is not sufficiently alkaline to neutralize the acids which result from fermentation, hence the need of an alkali in any form of mouth-wash which is intended to diminish decay. As bichloride and alkalies do not agree, I consider it best to use some other germicide rather than to give up the alkalies as ingredients of mouth-washes. After all, however, attention to the saliva is of prime importance, for as I have shown in this JOURNAL, if this is normally alkaline the teeth do not decay much, though in these mouths there is no reason to doubt the presence of germs with the attendant consequences of fermentation and generation of lactic acid. Where teeth are decaying rapidly the saliva is always at fault, and any treatment which does not take this into consideration will fail. It may be well to point out that a sterilized mouth is a mouth in an abnormal condition, and that the germs which are normally present in the mouth may be of some value in the economy.

KILLING TOOTH-PULPS.²⁶

The ordinary way to kill a tooth-pulp is to apply a mixture of arsenic and creosote. This treatment is always attended with pain; severe and lasting some hours. Truman finds that this pain may be avoided by preparing a mixture of equal parts of arsenic and iodoform, and then after adding five per cent. of carbolic acid, applying a minute quantity to the pulp which is to be killed.

BLEACHING TEETH BY ELECTROLYSIS.²⁷

The tooth to be bleached is to be flooded with acidulated water. An electrode is to be placed in the cavity and connected with the negative pole of a battery. Connect a platinum needle with the other pole and rub the needle over the surface of the tooth.

COMBINED FILLINGS.²⁸

The advantages of combining amalgam and gold in the same cavity are the therapeutic effects which result, teeth which were soft becoming harder in a few months. This is due to the diminution in the intensity of thermal shocks, and to the electric relations which are the result of this combination of metals. These electric currents act as germicides, thus keeping a sterilized zone about the fillings. In the case of combining tin and gold in the same cavity, the oxida-

¹⁹ Jennings in Items of Interest, p. 218, 1888.

²⁰ Brubaker in Therapeutic Gazette, p. 9, 1888.

²¹ Eve in London Dental Record, p. 159, 1888.

²² Bryant in Archives of Dentistry, page 98, 1888.

²³ Chisholm in Southern Dental Journal, page 477, 1887.

²⁴ Bryant in Archives of Dentistry, page 248, 1887.

²⁵ Miller in Independent Practitioner, page 175.

²⁶ Truman in Dental Cosmos, November, 1887.

²⁷ Ames in Ohio State Journal, p. 221, 1888.

²⁸ Stockwell in Dental Cosmos, p. 737, 1887.

tion which results is supposed by this writer and others to render the dentine less liable to the attacks of germs.

Various improvements and methods have been worked out during the year in connection with the operating-room and the laboratory. Among these may be mentioned a new way of casting aluminum for the plates for artificial teeth. This metal shrinks so much that it has not been available and is so light that it is difficult to make it fill the mold in casting. To overcome these difficulties it is now alloyed with a small per cent. of gold and forced into the mold by means of air pressure.

Melotte has introduced a compound of clay and glycerine which is used to take an impression of a broken-down root or for similar purposes. Then a rubber ring is fastened around this and a special fusible metal cast onto the impression. It thus becomes possible in five minutes, without leaving the operating room, to get a metal cast of the root, and by again casting on this die, to obtain a counter-die, which can be used to strike up a plate or any part of a gold crown. With the new compound blowpipe of Knapp's which occupies little room in the instrument case, it is a simple matter to make and fit a gold crown in an hour. These inventions of Melotte are of great value in filling teeth in which the walls are so thin that a metal filling is sure to be short-lived. By filling the cavity with gutta-percha and then striking up a piece of gold to cover it, we get a filling that can be inserted in a few minutes and which under the circumstances is the most durable known.

Copper amalgam made by electricity, as described in this JOURNAL, is now in extensive use in soft teeth, where its color is not objectionable. Miller has repeated his statement of last year, and claims that there is no filling so durable as one made by folding layers of gold and tin together and then wedging them into the cavity, which must *not* be dry, if the best results are to be obtained.

It is now claimed that the method of vulcanizing rubber plates for artificial teeth under steam heat at a temperature of 320°, in a copper vulcanizer, is entirely unnecessary, that as good a result can be obtained by placing the plate in a common sauce-pan, covering it with glycerine and heating to the requisite temperature. Vulcanizers have been in use ever since the introduction of rubber in dentistry. They are expensive and dangerous, a number of lives having been lost by their explosion, it is therefore fortunate that they are to be things of the past, and Dr. Anjubault deserves the thanks of the profession for not following the ordinary fashion in dentistry of patenting his invention.

Clinical Memorandum.

A CASE OF CEREBRO-SPINAL MENINGITIS OF THE PNEUMONIC TYPE, WITH PAINFUL JOINTS AND WORMS.

BY A. L. MASON, M.D., BOSTON.

THE following case is reported on account of the complications which attended it; namely, lobar pneumonia, painful joints, and worms. It is hard to see how the presence of worms can be anything more than an accidental coincidence. Dr. S. G. Webber,

however, in his valuable history of the epidemics of cerebro-spinal meningitis, says that lumbricoids were found in many instances during certain epidemics in France and Italy, and were thought to be a characteristic symptom of the disease; also that the pneumonic type was especially prevalent in this country among the soldiers at the time of the War of 1812.

The patient, a delicate-looking school-boy, five years old, came to the City Hospital, October 23, 1888. Three days before, he had been attacked by abdominal pain, vomiting, chills, headache and nose-bleed, thirst, marked dyspnea, and mild delirium.

On admission, his tongue was dry, the head was drawn far back, the cervical spines were tender, the left wrist was very painful, not swollen. Over the left lower lobe were dullness, broncho-vesicular breathing, and moist râles. There was an eruption of herpes about the mouth. The bowels were costive. Temperature 106° F., pulse 120, respiration 60.

During the next ten days the disease was at its height. Signs of pulmonary consolidation became more marked, with bronchial breathing, increased voice-sounds, and abundance of moist râles. There was retention of urine, and the cerebro-spinal symptoms, vomiting, retraction of the head, and great pain in the spine, continued.

There were no petechiae, and the mind was generally clear. The wrist was a source of great pain, and was kept in a splint. Priapism was observed.

Toward the end of the second week of the disease, the temperature rose daily to 104°, and the pulse ranged from 115 to 125; but on the sixteenth day the thermometer showed no fever, and the pulse was 100. On this day the patient passed a lumbricoid worm seven inches long, but two or three anthelmintic doses failed to bring away others. The painful symptoms did not abate entirely, although from the sixteenth to the twenty-fifth day the temperature was normal, the pulse 100, and the respiration 25. The head ached and remained still thrown far back, with tender cervix. The chest-dullness, bronchial breathing, and moist râles continued. Constipation was marked, and there was vomiting. The patient was now considerably emaciated, but the condition of the lung continued slowly to improve.

On the twenty-sixth day, however, there was a relapse of the cerebro-spinal symptoms, which lasted until the fortieth day. More severe pain was noted, accompanied by screaming. A fresh eruption of herpes about the mouth occurred. The temperature ranged between 96.5° and 103°, the pulse between 110 and 130.

At the end of six weeks it was noted that the child began to take considerable milk and had a bright expression. Retraction of the head was less marked, and he slept well.

A week later, although greatly emaciated, he was calling for food, had no more pain, and the head was freely movable. After nine weeks he was up, gaining in flesh, strength, and color. The legs were weak, and there was slight want of control. A little dullness remained in the left back.

January 3d. The record says: He plays about the ward all day. Rapid gain in flesh, strength, and color. Bowels move daily. Appetite good, sleeps well, no cough.

A week later he was discharged, well, after eleven weeks in the Hospital. The only drug which ap-

peared to be of service was morphine, which was frequently given in doses of ten to twenty minims of the officinal solution. Brandy, also, was freely administered.

Two months later the child was brought back to the Hospital with a recurrence of the cerebro-spinal inflammation, which resulted fatally in three days. Headache, marked retraction, and opisthotonos were observed. These symptoms were said to have followed a fall upon the head. No autopsy was permitted.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

REGULAR meeting, Wednesday, May 9, 1888.

Dr. T. M. ROTCH exhibited the wood-cut of a slate pencil which was brought to him by Dr. Morrison, of Providence. The case came under the latter's care and was briefly as follows: a boy seven and one-half years old, fell, as he was going to school, on a new slate pencil which had been sharpened. The pencil entered the thorax in the fourth left intercostal space, and went into the chest to the point where it was broken off, a length of about four and one-half inches. From the position, and the length of the pencil, it was considered that it must have entered the heart. The child presented symptoms such as one would get in perforation of the heart, according to the recorded cases. The pencil was extracted, and the boy at once fell into a state of collapse with cessation of pulse and respiration, and it was thought that he was dead; but after somewhat protracted efforts at artificial respiration, reaction ensued, and the child after passing through an acute attack of pericarditis with effusion, recovered.

Dr. C. W. TOWNSEND read a paper on

ENDEMIC CEREBRO-SPINAL MENINGITIS.¹

Dr. HENRY JACKSON reported

TWO CASES OF SPINAL MENINGITIS.²

Dr. HENRY B. JACOBS reported

A CASE OF CEREBRAL MENINGITIS.³

Dr. T. M. ROTCH said: I think the ground has been very thoroughly gone over by Dr. Townsend in his paper. The cases were of a great deal of interest to me; I had an opportunity of seeing them with Dr. Townsend and Dr. Jackson. The temperature in cerebro-spinal meningitis, I think in many cases of children at some time of the day or on certain days will be found to be markedly high and the pulse quick. In that way we will have valuable aids in making the diagnosis between tubercular and cerebro-spinal meningitis. The other points of diagnosis, as to the slow onset and the hereditary taint, are, I think very fallacious. We have to take into consideration at the same time the age of the patient; especially when the spinal or the tubercular meningitis occurs in the infant. The younger the infant, the more does

the tubercular meningitis approach the form of ordinary meningitis, and in the beginning it is almost impossible to differentiate them. That is, the type differs somewhat, according to the age, and very often we do not have a slow onset in the young child. The temperature as a rule, is not so high in the tubercular as in the cerebro-spinal form. The latter disease probably represents at times as high a temperature as almost any disease where recovery takes place.

I am sorry that I was not able to bring the chart of a case where the temperature ranged from 107 to 108 for a long period of time, with the final recovery of the child, but with lesions, apparently, of the brain, which kept the child from developing as rapidly as other children do; but finally, I believe, he came out a bright boy. There were some motor disturbances, remains of which are still to be found in this case. The second case of Dr. Townsend, which I think I also saw with him—the one that extended over a period of months—is interesting to me in relation to Henoch's idea that there is a separate spinal meningitis, differing from the epidemic infectious meningitis, and that the cases all recover. I followed, with Dr. Townsend, this case with a good deal of interest, but it finally died, although it seemed to follow out the typical symptoms described by Henoch. And I very much doubt whether there is really a different disease. I think rather it is a separate phase of the general disease.

In speaking to Dr. Jacobi a few weeks ago, when he was here, he said that he had seen these cases where there was an epidemic, and he also doubts whether there is any separate disease.

Dr. JACKSON's second case was also interesting. I very kindly did not speak of my having seen it. I have seen cases where I have often made mistakes in children, in the first two years, where it seemed as if they did have meningitis, and yet where they were favorably affected by salicylate of sodium and turned out to be rheumatism; that is, the extremely hyperæsthetic condition which is very likely to be present in cerebro-spinal meningitis is exceedingly difficult to differentiate from the hyperæsthetic condition of muscular rheumatism, in young babies. When young babies have rheumatism, it affects them much more violently than the older child. Even a slight rise of temperature will cause nervous symptoms which very closely simulate the symptoms of meningitis. There is at times retraction of the head and of the legs, and in this case of Dr. Jackson's, it was not at all certain that we had Kernig's symptom. As the case turned out, I think it was probably cerebral meningitis. I think it is right, however, to recognize that it is at times difficult to differentiate these cases.

Dr. FOLSOM: I have little to say, Mr. Chairman. I had one of the largest dispensary districts at the time of the epidemic of cerebro-spinal meningitis, sixteen years ago, and I saw quite a number of cases. There are two or three points regarding diagnosis, to which no allusion has been made this evening, which seem to me to be very interesting if we are to be on the lookout for these cases now, for it may be coming around again. In the early stage of the disease the persistent retraction of the head, the opisthotonos, is not always to be found. In fact, it is sometimes quite a late symptom. If I remember correctly, whenever autopsies were made the lesions were found at the base of the brain, and in the cervical region,

¹ See page 52 of the Journal.

² See page 58 of the Journal.

³ See page 57 of the Journal.

and in the lower dorsal and lumbar region, a great portion of the dorsal region sometimes being quite free, and never being involved to the same extent as the other portions. In all the cases which I saw there was very great pain on motion in the lower dorsal and lumbar region. In the earlier stage of the disease, and in a great many cases throughout the disease, where there was no opisthotonos, and where there was no marked retraction of the head, I found that in attempting to move the head from one side to the other, without moving the shoulders with the head, very great pain was caused. In the same way, in trying to twist the trunk on the pelvis, great pain was caused.

My experience about the temperature has not been the same as Dr. Rotch's. From 102° to 103° has been the most common highest temperature. If I remember correctly, none of my cases went beyond 104° . At all events, the temperature was very much lower than the temperature in typhoid fever. It is possible all do not know that during the war this disease was very troublesome, and was very often diagnosed as typhoid fever, and one of the points in diagnosis was that the temperature was not so high as in typhoid. There is another symptom which I remember occurred very frequently in the early stage of many of my cases, and that was very severe violent pain in the epigastrium. I do not remember whether it is mentioned in the text-books as one of the symptoms or not, but it is mentioned in some of the monographs on the subject. The pain may come on very suddenly, and with the very greatest degree of violence, the individual having appeared so well within a short time that it is very difficult to account for it. I remember one case of a gentleman whom I saw, who, before I saw him, had been supposed to have been poisoned by corrosive sublimate. He was at a barber's, and had been shaved, and the barber so far as he saw noticed absolutely nothing about the gentleman. He went immediately to the water-closet, from the barber's, and failed to appear a half an hour afterward, when a gentleman came to the hotel to keep an appointment that he had made with him. It was found that he was last seen going to the water-closet. The door was locked, and there was a confused sound within. The gentleman was found partially conscious with a severe pain in the stomach. It had been supposed to be poisoning of some kind, and he had been treated with white of egg, etc. It was a typical case, throughout, and the gentleman finally got well.

It seems to me that it is a matter of very great difficulty to differentiate the disease from tubercular meningitis in some cases, and it seems to me that the most constant point of variation is the fact whether or not the lower dorsal and lumbar region is involved. As I say, of my cases that was a constant symptom. Whether it is always otherwise in tubercular meningitis or not I do not know, but in the only case where I have had any very great doubt, there was no pain in the lumbar region until after a week of the disease; but there was tenderness and it amounts, probably, I think, to a diagnosis of cerebro-spinal meningitis. So it seems to me, but still the case is in doubt. As I say, in my experience there has not been that marked difference in the temperature which Dr. Rotch has observed. So far as I have seen, the temperature may go on very nearly alike, with no more than a degree or so of difference.

Dr. ROTCH: It was in reference to children that I was speaking. The temperature does not run so high in adults, but in young children it is often, as I said before, remarkably high at certain times and by its variation is valuable for differential diagnosis, from typhoid which presents a more uniformly moderate temperature, and is a mild type of the adult typhoid.

Dr. VICKERY: There is one question that I would like to ask: In Henoch's intermittent form, do the cases all recover?

Dr. TOWNSEND: In the cases that occurred in Berlin they all recovered. In some of the cases reported by Smith and one or two others, recovery did not take place.

Dr. VICKERY: Take such a case as your own; would it not be very hard to exclude tubercular meningitis?

Dr. TOWNSEND: I think that, with such a long continuance of the disease, three months, there would have been signs of tuberculosis elsewhere.

Dr. VICKERY: That is the point on which the diagnosis rests.

Dr. TOWNSEND: That, with the exact correspondence with the cases reported by Henoch and others, in the characteristic symptoms; and also the presence, in my case, of an eruption, which you would not find in the cases of tubercular meningitis.

Dr. PUTNAM: I would like to say a single word. Dr. Mills, of Philadelphia, who is an accurate observer, has recently called attention to observations that he has made in one or more cases of cerebro-spinal meningitis, that the symptoms showed apparently the presence of multiple neuritis, as it has been described of late, apparently complicated with them; that is, a portion of the symptoms were identical with multiple neuritis, and that seems to me of interest, in view of the fact which has been alluded to, that the signs which have been considered characteristic, the contraction of the head and opisthotonos, sometimes scarcely occur at all, and often not until quite late, so that a mistake in diagnosis from this cause might arise; and it is also, I think, interesting from the fact that, even in the Northern climates, multiple neuritis is occasionally an infectious disease.

Dr. JACKSON: I would like to ask Dr. Folsom if you often find in cerebro-spinal meningitis the symptoms of intra-cranial pressure which are quite common in tubercular meningitis, the strabismus and the change in the rhythm of respiration, due to pressure?

Dr. FOLSOM: There was not strabismus except in late cases, but there was a change in the rhythm in the severer cases. With regard to the temperature, the majority of my cases were children.

Dr. MASON: I had occasion to look up this subject a little, four or five years ago, after seeing a few cases, and reported five cases in the *Medical Journal*; and in these cases, which were all in adults, the temperature did not rise to any great height; 103° , I think, was the highest. One or two of them were very little above the normal. The pulse, also, was low, from 60 to 100, rising in no case above 100, except near death in one or two cases which were fatal. It became very rapid, of course, before death. Probably, in infants, the symptoms are more acute. When effusion has taken place, after a few days, I presume that the marked physical depression which follows is due to pressure on the brain and spinal cord, and in one instance which I recall, in a man, the temperature fell

to 96.2°, and remained below normal for some time, the pulse rising gradually until death; and in one case, also. I noticed symptoms which led to the supposition, as Dr. Folsom remarks, that there might have been mineral-poisoning, so that a stomach-pump was thought desirable. It was not used, however.

In the case reported, where there was no inflammation of the cervical meninges, I think it would be difficult to make a positive diagnosis of cerebro-spinal meningitis. Last fall we had a case at the City Hospital, one of the four or five which have occurred there in the last four years of this disease, in which the affection assumed the pulmonic form; that is, there was an acute lobar pneumonia of the left lower lobe, with retracted head and all the characteristic symptoms of cerebro-spinal meningitis. There was herpes on the lips, and, in fact, the child presented the typical appearance of cerebro-spinal meningitis, and got well after ten weeks. He went out of the Hospital apparently perfectly well, and in a few weeks more came back with a relapse, and died with opisthotonos and all the characteristic symptoms renewed. Unfortunately, there was no autopsy. These few cases are the only ones that I have seen for several years; and out of some thirty or forty cases of cerebral meningitis at the Hospital, I think there were but four or five of this disease. I have nothing more to say, except in relation to the epigastric pain. In my second case I spoke of that pain; but the child had been treated for abdominal disease before I saw it, and applications had been made to the abdomen.

(To be continued.)

MASSACHUSETTS MEDICO-LEGAL SOCIETY.

W. H. TAYLOR, M.D. SECRETARY.

The eleventh annual meeting was called to order at 12.15 P. M., by PRESIDENT WINSOR, at the rooms of Boston Medical Library Association, June 12, 1888. Present, sixteen members.

The Treasurer made his report, showing a balance of \$26.85 in the treasury at date. The report was accepted, and an assessment of three dollars for the current year was declared.

The President appointed a committee of three to nominate a list of officers for the ensuing year. The committee reported the following list which was unanimously adopted:

President, Med. Exr. J. G. Pinkham, Lynn; *Vice-President*, Med. Exr. A. F. Holt, Cambridge; *Corresponding Secretary*, Med. Exr. B. H. Hartwell, Ayer; *Treasurer*, Med. Exr. C. C. Tower, South Weymouth; *Recording Secretary*, Med. Exr. W. H. Taylor, New Bedford.

PRESIDENT PINKHAM thanked the Society for the honor conferred on him, and made a few remarks concerning the best ways of forwarding the Society's interests. The President appointed the following gentlemen Standing Committee for the ensuing year: Med. Exrs. Draper, Presbrey, and Winsor.

Voted, On motion of MED. EXR. DRAPER, to empower the Standing Committee to bind the Transactions of the Society in a suitable manner.

MED. EXR. HOLT deplored the inactivity of members in the matter of presenting papers, and hoped that members will feel it their duty to the Society to make efforts to increase the interest of the meetings.

Voted, On motion of MED. EXR. WINSOR, that the

subject for discussion at the October meeting be Poisoning by Arsenic, and that members be notified of this vote as early as convenient.

MED. EXR. WINSOR made some remarks regarding his term of office as President, and read an interesting account of

A DISPUTED CASE OF ACCIDENTAL DROWNING.

The death was probably due to an epileptic attack while bathing. Certain questions of violence arose in the minds of the public, and an autopsy was held by private parties, without definite result as to determination of cause of death. A prominent question in Dr. Winsor's mind was, whether he should have made an autopsy to satisfy public sentiment, believing as he did, that the case was purely one of accidental drowning.

In the discussion which ensued, MED. EXR. MORSE reported a case of an epileptic who met his death by drowning while in an attack.

MED. EXR. HOLMES reported a case of drowning in a tub, the subject being a child of twenty-one months, and the water but one and three-quarters inches deep.

MED. EXR. PRESBRY reported a case of drowning in a little rill of water from melting snow, the locality being dry when the body was discovered.

MED. EXR. TAYLOR reported a case of drowning in a little water contained in the imprint of a horse's hoof in mud, which subsequently became frozen.

MED. EXR. WRIGHT reported a case of a man who vomited the contents of his stomach, and, lying face downward, was literally drowned in the fluid.

MED. EXR. HOLT believed that the office of medical examiner was created in the interest of the public and not that of the official, and would make autopsy in any case where public sentiment demanded it.

MED. EXR. PAINE reported a case of drowning showing necessity of an autopsy.

The subject was further discussed by members HOLMES and MORSE.

Recent Literature.

Intubation of the Larynx. By F. E. WAXHAM, Professor of Otology, Rhinology and Laryngology, College of Physicians and Surgeons, Chicago. Pages 110. Published by Charles Triax, 75 and 77 Wabash Ave., Chicago, 1888. Price \$1.25.

This small volume, upon a most important subject, should be read by all who are likely to be called upon to treat laryngeal stenosis in children. It should be read especially by those surgeons who are still sceptical regarding the merits of intubation. The whole subject, as it is understood to-day, is in this volume, presented clearly, concisely and with authority, by Dr. Waxham. In speaking of the comparative merits of intubation and tracheotomy the author says that "by reference to the comparative statistics of these operations, it will be seen that intubation is not secondary in importance to tracheotomy, for not only are we permitted to operate where tracheotomy would not be allowed, but after operating we can then save a large percentage of cases at all ages, and a much larger proportion under the age of three years." There can be no stronger argument in favor of intubation than this. The book is well printed and illustrated.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, JULY 19, 1888.

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THE MASSACHUSETTS HEALTH REPORT.

THE nineteenth annual report of the State Board of Health of Massachusetts falls nothing short of the highest standard of the Board's work during the many years of its usefulness. It is so compact with information on matters pertaining to the public health, that no abstract or review can do justice to it.

Of recent legislation the most important is the Act of 1886, to protect the purity of inland waters, by which the general oversight and care of such waters was committed to the State Board of Health. Under this act the Board was authorized to employ such experts as were necessary for carrying out its provisions, to recommend legislation and suitable plans for main sewers, to report its proceedings under the act, and to submit estimates of expenses. It was also required to make examinations of such waters with reference to their domestic use, and authority was granted to conduct experiments for determining the best practicable methods of sewage purification and disposal. The Board was also required to consult with and advise the authorities of cities and towns, and also corporations, firms and individuals, with reference to existing or proposed systems of water-supply and sewerage. To these ends the Board has organized: (1) A series of chemical analyses of all the domestic water-supplies of the State; (2) Examinations with reference to the presence of the various forms of vegetable life; (3) Bacteriological investigations; and (4) Experiments to ascertain the comparative value of various soils for sewage irrigation. The work already done, both scientific and practical, under this law, occupies over a hundred pages of the report and prepares the way to a solution of some of our most difficult sanitary problems.

During the year there were examined 4,870 samples of food, of which 35.05 per cent. were found to be adulterated or not conforming to the statutes, including 3,080 samples of milk, of which 38.33 per cent. was below the standard or adulterated. Of 550 sam-

ples of drugs, 400 were of good quality. In the five years, 1883 to 1888, of the operation of the act, the percentage of adulteration found has been reduced very materially, and in milk from 83.9 to 38.33.

An extended report on oleo-margarine shows that it is probably not quite so digestible as butter, very nearly as nutritious and not so readily becoming rancid; that it is wholesome if properly made of good material, but that if sold as butter there is a commercial fraud, by virtue of which the purchaser pays for what he does not get—a not uncommon deception. No evidence was found of adulteration or of use of uncleanly or unwholesome material, coloring matters only causing deception as to quality.

Weekly mortality reports are sent to the Board from the larger cities and towns representing a population of 1,100,000, or a little more than one-half the population of the State. They have been of exceeding value as stimulating local authority to accurate registration. In his summary of them, Dr. Abbott has been enabled to present some comparisons of mortality by weeks, not possible in his *résumé*, in the health report, of the salient points of the registration report of vital statistics.

Dr. Pinkham's excellent article on the ventilation of school-rooms heated by stoves, shows such excellent results, that we suspect much of its success to be due to the supervision of so expert a sanitarian. But it might do much less well and be well worthy of imitation.

An unusual immunity from infectious and contagious diseases is reported for the year, and although the Board made several investigations with reference to special outbreaks, the results went chiefly to show carelessness in disposal of filth or in allowing too free communication between the well and the sick, and to repeat the often-learned lesson of the need of vaccination.

A further investigation which is being made into the subject of trichinosis in swine, and tuberculosis in cows, is referred to in connection with a proposed investigation by the Massachusetts Society for the Promotion of Agriculture.

HYPERTENSION OF THE ARTERIES: THERAPEUTIC INDICATIONS. I.

AN admirable study of the subject of arterial hypertension, by Henri Huchard, of Bichat Hospital, has recently appeared. It is now a well-recognized fact that in diseases of the cardiac and blood vascular system there exists an important distinction between the *valvular* cardiopathies and the *vascular* or *arterial* cardiopathies:—the first beginning at the orifices of the heart and being characterized by a tendency to lowering of the arterial tension; the second having the arteries for their origin, and being characterized by a tendency to hypertension of those vessels.

Huchard establishes two divisions of hypertension: (1) temporary, (2) permanent. To the first head,

cases like this belong : A woman, aged sixty years, affected with *arterial cardiopathy* (arterio-sclerosis of the heart), of arhythmical form and without any souffle, entered the hospital for violent attacks of pseudo-cardiac asthma. Crises of dyspnoea came on paroxysmally every evening, lasting nearly all night, there were no signs of pulmonary oedema or congestion. Sphygmo-manometric observations showed a considerable augmentation of the arterial tension; and auscultation discloses a *marked diastolic resonance* of the aorta, a sign to which Huchard attaches much importance. The precordial shock was energetic; the heart beats were strong, though arhythmic; the pulse was close, concentrated (that is, not easily felt under the finger), almost vibrating, and a little irregular. The urine was normal. This patient had been dosed with digitalis, to the great aggravation of her symptoms. Under a treatment calculated to reduce vascular pressure (blood-letting and an exclusive milk diet) she became better, and left the hospital in a fair state of recovery.

Huchard contrasts this case with another which came before the hospital clinic, about the same time, and which was diagnosed as *valvular cardiopathy*, and in which there was marked mitral constriction and insufficiency. The pulse was "feeble, compressible, unequal, irregular, intermittent and rapid;" the lungs were congested at both bases; the right cavities of the heart were dilated; and there was a dyspnoea which was constant, though paroxysmally worse at times. Here the sphygmo-manometer revealed depressed arterial tension. The indication was clear—the cardio-vascular tonus was to be raised, and digitalis proved as beneficial in this case as it was detrimental in the foregoing.

"Everybody knows" adds Huchard, "that not all palpitations are tributary to digitalis;" and the same may be said of cardiac dyspnoea, which is sometimes relieved by nitro-glycerine when the so-called heart-tonics fail. The same general truth applied to some cases of metrorrhagia or hæmoptysis where there is high arterial tension, and where ergot and digitalis, by aggravating this tension, favor the hæmorrhage rather than check it. There we witness the triumph of sedatives and calmatives (such as opium and ipecac), of tri-nitrate, of nitrite of amyl, of aconite, of the iodides, all of which lessen arterial tension. We get, moreover, a hint in explanation of the want of success which sometimes attends the treatment of epistaxis in young people and in arthritic persons by perchloride of iron and ergot. We see also why the palpitation of the anæmic and chlorotic are aggravated by digitalis and the usual tonic treatment of these cases. Here there is the element of vascular spasm to combat, and the immediate consequence of vascular spasm, hyper-arterial tension.

Huchard has some good remarks, in connection with the subject of chloro-anæmia, respecting the exaggerated excitability of the vaso-motor system in these patients, as evinced by the coldness of the ex-

tremities, the localized attacks of alidity and ischæmia, the frequent alternations of pallor and redness of the face, the emission of clear, limpid, and abundant urine, etc. The functional murmurs at the mitral and tricuspid orifices are of great interest, and are due (according to Huchard's explanation) to arterio-capillary spasms and consequent temporary dilatation of the heart's cavities and orifices.

Into the subject of true angina pectoris (in which arterial tension is permanently exaggerated) and the pathogeny of this disease, as well as other conditions characterized by permanent hypertension, we have not space to enter in this number.

ON THE VALUE OF SALOL IN THE TREATMENT OF ACUTE RHEUMATISM.

DR. J. ROSE BRADFORD, of University College Hospital, publishes the results of sixteen cases of rheumatic fever treated with salol.

The cases were all of average severity; temperature from 101° to 103° . In two of the cases, pericarditis and endocarditis resulted; in one of them there was an attack of hyperpyrexia (temperature reaching 110°) before the pericarditis. The salol was given in the most severe cases in doses of ten grains every hour till the temperature came down; in cases of moderate severity, the dose was ten grains every two, three or four hours. It was sometimes given in milk, sometimes in plain water, sometimes in soda-water.

Dr. Bradford's conclusions are as follows: (1) As an antipyretic, salol is decidedly efficacious in rheumatic fever, its use being followed by a rapid fall of temperature within twenty-four hours from the commencement of its administration. To produce this rapid fall, as much as ten grains every hour should be given. It does not, however, prove to be quite as reliable, as an antipyretic, as salicylate of soda. (2) It is inferior to salicylate of soda in relieving the joint pains. (3) Cases of relapse are just as likely to occur after salol, as after salicylate of soda. (4) Salol is superior to salicylate of soda in not producing, to as great an extent, the deafness, noises in the head, etc., so common with the latter drug. Salol is better tolerated by the stomach than salicylate of soda, nor is it so likely as the latter to produce unpleasant toxic symptoms. Its administration is sometimes attended with carboluria: this is explained by its chemical composition, salol being a compound of salicylic acid and phenyl.

Dr. Bradford adds, in conclusion, that the results obtained with salol are simply those that would be expected on the supposition that it owes its activity solely to the salicylic acid it contains. The fact that deafness, noises in the head, etc., are not so common after its use, is simply because less salicylic acid is given. Its one advantage appears to be that its taste is more pleasant; but this is of comparatively small moment, as the taste of sodium salicylate can be effec-

tively covered. The latter, moreover, has been successful in cases where salol has failed, and has proved more effective in relieving the joint pains.

MEDICAL NOTES.

—The alarming complications which may attend even the mitigated form of the duello which prevails in France, is illustrated by the following paragraph which was thought worthy of being telegraphed under the Atlantic to a morning paper:

"There seems no reasonable doubt of Boulanger's recovery within a fortnight or so, although his wound appears to threaten him with all sorts of unpleasant complications, such as lockjaw or the less familiar complaint of embolic, caused by clots of blood in the bronchial tubes, or, what is still rarer, suffocation by hamaturia in the respiratory channels."

—At the Commencement Exercises of Union College, June, 1888, the honorary degree of LL.D., was conferred upon Mr. Lawson Tait, F.R.C.S., Professor of Gynecology, Queen's College, Birmingham, England.

—Cases have lately been reported in the *Journal of the American Medical Association* of acute rheumatism in infants of eleven days and two months of age, respectively.

—We learn from the *Lancet* of the use of a new material for absorbing and deodorizing fecal matter and urine, namely, common slag, for the efficiency of which strong claims are made. Its cost is small (five to ten shillings per ton, including crushing and carriage), and it is said the quantity necessary for accomplishing the defecation of sewage is a third less than of ordinary dry-earth. Its method of use is like that in the common earth-closets, and a sample which had been in use for five weeks, gave no smell whatever.

—Dr. Austin Flint, of New York, has recently written on the natural history of the medical student. He classifies the specimen thus: (1) Good students, forming 25 per cent. of the graduates, and marked 80 per cent. or upwards on their examination; (2) The average, being 45 per cent. of the graduates, and attaining marks of 70 to 80 per cent.; (3) The poor, forming the other 30 per cent., some of them approximating very closely in scholarship to the plucked. Such, he says, seldom do any credit to themselves or their profession.

—It will be remembered that the late Mr. Roscoe Conkling developed his fatal mastoid disease soon after protracted exposure in the "blizzard" of March last. Dr. Frank Allport, of Minneapolis, Minn., writing in the *Northwestern Lancet*, says that during a practice of five and one-half years in that city, and with a total number of seven hundred and sixty-two ear cases, he has opened the mastoid twenty-five times, always finding pus. Comparing this proportion with that observed in other cities, Dr. Allport concludes that the climate of Minneapolis, with its enormous extremes of temperature from winter to summer, has

a special tendency to produce mastoid disease as it has towards catarrhal affections generally.

—A London correspondent of the *Journal of the American Medical Association* quotes Sir Andrew Clark as having made the remark: "I worked twelve years for bread, twelve years for butter, and twelve more for the luxuries of life." Sir Andrew, the other day, received a fee of £5,000 for going to Italy. Sir Andrew Clark's first acquaintance with Mr. Gladstone arose in connection with his visits as Mr. Clark to Mr. Gladstone's Convalescent Home, since when they have been great personal friends. He is stated to have been one of the first to adopt the plan now general in London, of writing out elaborate dietaries for his patients.

—The *London Medical Recorder* gives the substance of a parliamentary paper, issued by the Home Office, containing a report showing the number of experiments performed on living animals during the year 1887, under license, distinguishing painless from painful experiments. The total number of persons licensed to perform such operations in England and Scotland was 82, all (save one foreign graduate) graduates of a British university or fellows or members of royal colleges. Of these 64 exercised their right. The buildings where such experiments are allowed to be made are twenty-six in number—nine in London, nine in the provinces, eight in Scotland. The number of experiments was 1,220, of which 582 were performed without anesthetics. These were, with very few exceptions, simple inoculation experiments, and were consequently painless. The experiments were—physiological, 237; pathological, 703; or therapeutic, 380. The number of cases in which pain has been unavoidably inflicted during experiments conducted under certificates dispensing with anesthetics, or with the killing of the animal on recovery, was 71—2 being physiological, 21 pathological, and 48 therapeutic. Comparatively few vivisections, properly so called—that is, involving a distinct surgical operation on a living animal—were practised during the year. In all cases in which such experiments have been performed under the certificate dispensing with the slaughter of the animal before recovering consciousness, it has been made a condition that the wound should be rendered painless by antiseptic treatment, and, that failing, that the animal should be destroyed. This condition has, the inspector believes, been faithfully fulfilled. The animals on which pain was inflicted were two cows, 12 calves, 1 cat, 32 rabbits, and 24 frogs. In Ireland there are only four persons licensed and the experiments (11 in number) were all painless.

NEW YORK.

—The first trip of the St. John's Guild Floating Hospital this season was made July 9th, and it is announced that four trips will be made each week, instead of three, as heretofore. Since last year \$7,000 has been expended by the Guild on improvements, a large bath-room, with seven tubs having been fitted up

on the hospital boat, and a new wing having been added to the Seaside Hospital.

— A dispensary for the treatment of diseases of the nose, throat and lungs, has been organized in Brooklyn. The medical staff is to consist of Dr. Sidney A. Fox, physician in charge; Dr. Thomas R. French, physician for diseases of the throat and nose; Dr. Benjamin F. Westbrook, physician for diseases of the lungs; and Dr. George R. Fowler, consulting surgeon.

— Dr. T. Matlach Cheesman, a prominent New York physician, died at his country-seat at Ridgefield, Conn., on the 7th of July, in the sixty-fourth year of his age. He was for many years connected with the 7th Regiment, and during the late war he served with distinction in the medical corps of the army.

Miscellaneous.

METHODS OF DISINFECTION AS TESTED AT THE QUARANTINE STATION BELOW NEW ORLEANS.

No scientific report published by the government this year has been more important than that just made by Dr. J. J. Kinyoun, assistant surgeon at the Marine Hospital Service, upon the germicidal powers of the different methods of disinfection practised under the direction of the Louisiana Board of Health at the quarantine station below New Orleans, of which we find a summary in *Science* for July 13th. The report is important, not only because it shows the degree of protection against the importation of infectious diseases through the important port of New Orleans; but also, since the methods of disinfection practised at other quarantine stations are similar to those in use there, the experiments show approximately the efficacy of each mode of disinfection, and suggest changes that should be made in their use. The three methods of disinfection tested were by the use of bichloride-of-mercury solution, the application of dry and moist heat, and fumigation with sulphur dioxide. Dr. Kinyoun finds the first of these methods defective, because of the difficulty of getting the disinfecting-agent into cracks and corners, carpets, rubber goods, the under sides of decks, and into lockers, etc. He discovered in all these localities and articles that the micro-organisms existing before the disinfection had not been destroyed, and he found them as plentiful on the floor of the fore-castle of one ship, that was exceptionally filthy, after it had been drenched with bichloride of mercury for an hour, as before. Dr. Kinyoun recommends, that, in order to make this mode of disinfection more effectual, the bichloride of mercury be applied with a spray produced by a connection with a steam-boiler, and that it be applied after fumigation by sulphur. The results from the application of dry and moist heat were the most satisfactory of all. Cultivations of various disease-germs exposed to a dry heat of 80° C., and afterwards to steam at a temperature of 100° C., were, with few exceptions, destroyed. Dr. Kinyoun thinks, that, in order to secure absolute protection, the heat should be made greater and the time of exposure increased. In eleven

experiments seventy-four disease-germs were placed in vessels among articles to be disinfected by the use of sulphur dioxide, but only sixteen of the whole were destroyed, or less than twenty-two per cent. Dr. Kinyoun has very little to say about this method of alleged disinfection, except to recommend that the sulphurous fumes be applied in larger quantities, and confined in the apartments to be disinfected a longer time. But he reports his experiments in full, and lets them speak for themselves. The net result of these tests is to show that some disease-germs escape even when the most effectual modes of disinfection practised at quarantine below New Orleans are resorted to, and that less than one-fourth of them are killed when the least effective method is used. It may be assumed that quarantine and city health officers everywhere will profit by the suggestions of this report, and that the public will be better protected in the future than in the past.

TUBERCULOSIS TRANSMITTED BY THE MILK OF A PHTHISICAL COW.

A REMARKABLE case has been recorded by Denune, of Berne, in which an infant became infected with tuberculosis through the milk which had been obtained from a phthisical cow. The details of the case are as follows: An infant, aged four months, belonging to a family whose history was absolutely negative in regard to tubercular affections, died of tuberculosis of the mesenteric glands, a fact which was confirmed at the post-mortem examination. The glands alone contained the characteristic bacilli; the latter were not even to be detected in the intestinal mucous membrane, and no bacilli were found in any other part of the body. The child was fed with the milk of a cow which was especially kept for the purpose. The cow for the purposes of examination and inquiry was slaughtered, and a careful post-mortem made of its carcase. The left lung and pleura of the animal were found to be studded with tubercle, and in the tubercular nodules, bacilli were easily found. The milk was then submitted to a minute investigation, but bacteriological examination at first yielded negative results. Finally, however, tubercle bacilli were detected in portions of the liquid expressed from the deepest parts of the mammary gland. The case is an important one from several points of view, and claims attention by reason of its bearing upon the so-called hereditary transmission of tuberculosis. If, instead of a human infant, a calf had in a natural manner fed itself, with milk from its mother's udders, we can hardly conceive otherwise than that the calf would have similarly become infected with tubercle. Assuming such to have occurred, the case would obviously have been regarded as one of the hereditary transmission of tubercle. But taking the supposition that a woman suffering from phthisis suckles an infant, there seems to be no reason why the same result should not occur, and why, like the infant and the cow, to which reference has been made, the mother should not transmit the bacilli by means of her milk to her offspring. All this appears to be possible enough, and has, perhaps, even occurred in some cases without the fact having been proved by demonstration. — *Medical Press and Circular*, June 27th, 1888.

THE INEQUALITIES OF MEN.

M. LAPORTE of Montpellier, has recently delivered before the Faculty of National Sciences in that town a series of lectures on inequalities among men, in the course of which he said that the political dogma of equality rests on hypotheses which are utterly false. He distinguished four social types among mankind, which are thus summarized in the *London Medical Recorder*: (1) The initiators, who show mankind the way into the region of the unknown, and who go in front. Restless and daring, with an intelligence which is at least equal to the average, men of this type do not travel readily along beaten tracks. New ideas are the breath of life to them. They spend their lives in new creations; they are often wrecked, but the true genius represents the most perfect form of this type. (2) Men of spirit, of intelligence, who, possessing no creative power themselves, yet carry out and perfect the ideas and discoveries of the first type, to which they are really the complement. (3) Men who, with much or little intelligence, can work only with others, who mistrust every new idea not accepted by all the others, but who seize it with avidity when their neighbors adopt it. If intelligent, these men are docile, but they dislike every change in routine, and they represent the dulness of the mass in the face of every reform. (4) Men of this type are not fit to attain even the smallest step in culture. Evidently every man cannot be classed under one or other of these divisions. In human societies clear lines of demarcation do not exist, but for general purposes the distinction is sufficiently evident. The superiority of a race or nation depends on the greater or smaller number of men of the first two classes. The race which is richest in the first type is the blonde dolichocephalic, and this has been the case even when the people among whom they lived were not of this kind. In Egypt, Chaldea, Assyria, Persia, and India, and even in China men of this type ruled. In the Greek and Roman world it was the same, and it is so still. In our own day the rank of a nation corresponds with the strength of the blonde dolichocephalic element. The Gallic and Frank elements which made France great were of this type, and it plays the same part in England, Germany, and America. Near these came the Semitic and Mediterranean races, who had reached a high grade of civilization when the blonde dolichocephalic peoples were still savages. The remainder of mankind must be reckoned the passive races. The brachycephalic races of Europe, the Celto-Slavs, rarely produce men of the first intellectual type. In the social changes of recent years brachycephalic men, who form the lower classes, have been elevated and brought forward, and herein, the lecturer thought, lies the great danger of the future deterioration of the French nation. The existence of the superior blonde dolichocephalic type is threatened by amalgamation with the dark brachycephalic and inferior races.

ARSENIC POISONING THROUGH THE MATERNAL MILK.

DR. BROUARDEL, Professor of Medical Jurisprudence at the Paris Faculty of Medicine, was lately consulted by the Tribunal Court on the question as to whether an infant of twelve months could have been

poisoned by the milk of its mother in the case where the latter had absorbed arsenic. The following account of the circumstances which cause this inquiry is given by the Paris Correspondent of the *Lancet*. A man, having been accused of forgery with the intention of appropriating to himself the fortune of his wife and that of his mother-in-law, was at the same time suspected of trying to poison his wife, and having thus caused the death of his child, which the mother was suckling at that time. The child died with symptoms of cholera a few days after the mother had herself presented analogous symptoms, such as diarrhoea, vomiting, etc. As it was during the hot season, these accidents did not excite attention. It was only after the second choleraform attack, which occurred in November last, at the same time in the mother and grandmother of the child, that the husband was suspected. On the other hand, the wife declared that she had found in her husband's pocket, a white powder which was nothing else than arsenious acid. To resolve the question, Dr. Brouardel caused the coffin containing the body of the child, which had been buried about six months, to be brought to Paris. This body was completely transformed into cadaveric fat, and it was impossible to isolate the viscera from the other parts, so that it was submitted to analysis in its entirety. It weighed about two and a half kilogrammes, and contained five milligrammes of arsenic which did not proceed from the linen enveloping the corpse, or from the earth surrounding the coffin. It was necessary, in the second place, to know whether arsenic was eliminated by the milk. M. Gabriel Pouchet, an eminent biologist, had performed certain experiments in this direction, which was very conclusive. He caused a certain number of wet nurses, who were patients at the St. Louis Hospital, who were affected with skin diseases, to take a certain quantity of Fowler's solution (from two to twelve drops per day), and he was able to ascertain that under these conditions the milk of these nurses always contained a relatively considerable quantity of arsenic; thus the milk of one nurse who took in six days eight milligrammes of arsenic containing one milligramme of that substance to 100 grammes of milk. It must be added that with these doses the nurses and their infants do not appear to be affected by any accidents. But this does not prove that this would have been the case if the arsenic had been given at once in a single dose. In order to clear up this last point, recourse was had to experiments on female animals. This last series of experiments did not give conclusive results, because the animals presented a very variable susceptibility to arsenic, and the experimenter found it impossible to come to any conclusion concerning these experiments as compared with those performed on human beings. It is, however, evident, from these researches, that the lactic secretion is a means of elimination by predilection for arsenic, and that it is prudent not to administer this agent to suckling mothers. In the particular case under notice, in responding to the Juge d'Instruction, Dr. Brouardel stated that the body of the infant contained a sufficient quantity of arsenic to cause the death of a child of one year, and that this arsenic may possibly have had for vehicle the milk of the mother. This qualified conclusion did not seem to affect the defence or the accusation, and the husband was condemned to twenty years' hard labor.

Correspondence.

A REMEDY FOR SICK HEADACHE.

MILFORD, MASS., July 16, 1888.

MR. EDITOR,—I take for granted that many physicians in active practice would hail with pleasure a remedy that would meet and effectually relieve a majority of the cases of sick headache.

During the past five or six years I have used the following combination with good success.

R Podophyllin $\frac{1}{2}$ grain.
Citrate Caffeine $\frac{1}{2}$ grain.
Sub-Nitrate Bismuth 3 grains.

M. One dose to be used when the headache is approaching. Repeat in two hours if needed.

Messrs. John Wyeth & Bro., of Philadelphia made compressed pills for me from this formula (making the pills

half weight), of whom any physician can get a supply by ordering.

This combination has served me in practice so well that I desire to give others the benefit of it. Yours truly

JEROME WILMARTH, M.D.

—*Fliegende Blätter* has a comment on the so-called "Study of Objects" which is not without its application in the medical profession. *Professor*: "How many legs have insects?"—*Candidate*: "65 per cent. of insects have no legs at all, 11 per cent. have one, 14 per cent. two or three, 10 per cent. four or five, but none six."—*Professor*: "How in the world did you get this answer?"—*Candidate*: "By carefully examining the collection belonging to the University."

REPORTED MORTALITY FOR THE WEEK ENDING JULY 7, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Diph. & Croup.	Scarlet Fever.
New York	1,526,081	905	538	42.35	10.34	30.02	4.29	2.20
Philadelphia	1,016,758	423	189	25.68	9.84	18.72	1.68	.72
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	760,000	273	159	27.72	8.28	17.64	3.64	1.08
St. Louis	449,160	243	106	28.70	6.56	20.91	2.87	.82
Baltimore	437,155	241	161	46.20	5.88	42.42	—	.42
Boston	407,024	164	50	10.98	13.42	4.88	3.66	—
Cincinnati	325,000	140	—	21.30	9.23	16.33	.71	—
New Orleans	248,000	140	60	29.11	12.07	12.78	4.97	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	128	77	35.10	9.26	31.60	1.56	1.56
Pittsburgh	210,000	109	74	31.28	5.56	26.68	—	.52
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	20	10	45.00	20.00	30.00	—	—
Charleston	60,145	53	22	24.57	7.56	15.12	1.89	1.89
Portland	40,000	14	4	—	35.70	—	—	—
Worcester	76,323	24	8	16.66	20.80	8.33	—	4.16
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	18	7	11.11	22.22	—	—	—
Fall River	61,203	37	21	29.72	5.40	27.02	5.55	5.55
Lynn	51,467	12	0	33.33	33.33	—	8.33	—
Lawrence	40,175	18	8	27.77	11.11	5.55	—	5.55
Springfield	39,952	9	1	33.33	—	11.11	—	—
New Bedford	36,298	10	5	—	30.00	—	—	—
Somerville	33,307	—	—	—	—	—	—	—
Holyoke	32,887	18	12	33.33	—	22.22	5.55	5.55
Fall River	31,203	11	—	—	9.09	—	—	—
Chelsea	27,552	8	0	—	12.50	—	—	—
Haverhill	24,979	7	2	—	—	—	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brookton	24,784	2	0	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	—	—	—	—	—	—	—
Malden	18,832	1	0	—	—	—	—	—
Fitchburg	17,534	1	0	—	—	—	—	—
Waltham	16,651	2	0	—	—	—	—	—
Newburyport	13,839	1	0	—	—	—	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 3,022; under five years of age 1,519; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 964; consumption 288; acute lung diseases 137; diarrhœal diseases 711; diphtheria and croup 84; measles 37; scarlet fever 34; whooping-cough 32; typhoid fever 28; cerebro-spinal meningitis 19; malarial fever 15; small-pox five; puerperal fever three. From scarlet fever New York 24, Philadelphia four, Chicago two, St. Louis, Boston, Cincinnati, Pittsburgh and Lawrence one each. From whooping-cough, New York eight, New Orleans seven, Chicago and Baltimore four each, Philadelphia, Boston and Charleston two each, St. Louis, Washington and Haverhill one each. From typhoid fever, Philadelphia nine, Chicago six, New York four, Cincinnati and New Orleans two each, St. Louis, Baltimore, Pittsburgh and Lawrence one each. From cerebro-spinal meningitis, New York four, Baltimore three, Chicago, St. Louis and Cincinnati two each, Pittsburgh, Nashville, Worcester and Lynn one each. From malarial fever,

New Orleans six, St. Louis five, New York two, Philadelphia one. From small-pox, Philadelphia three, New York and Nashville one each. From puerperal fever, Boston, New Orleans and Pittsburgh one each.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending June 23d, the death-rate was 15.5. Deaths reported 2,794; infants under one year of age 636; acute diseases of the respiratory organs (London) 184; whooping-cough 80; diarrhœal diseases 48; fevers 33; diphtheria 29; measles 25; scarlet fever 34; small-pox (Sheffield five, Preston two, Manchester and Leeds one each), 9.

The death-rates ranged from 9.9 in Nottingham to 24.3 in Preston; Birmingham 14.3; Bradford 12.5; Halifax 16.3; Hull 15.0; Leeds 15.0; Leicester 17.8; Liverpool 16.0; London 14.5; Manchester 22.5; Newcastle-on-Tyne 19.7; Oldham 18.1; Sheffield 15.7; Sunderland 16.2.

In Edinburgh 11.9; Glasgow 22.8; Dublin 20.7.

The meteorological record for the week ending July 7, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.
		Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	
Saturday, July 7, 1888.		Daily Mean.															
Sunday, ... 1	29.90	57.0	64.0	51.0	97.0		83.0	N.E.			12			R.			
Monday, ... 2	30.15	60.0	63.0	53.0	68.0		68.0	N.E.			1			O.			
Tuesday, ... 3	30.18	68.0	74.0	56.0	37.0		55.0	S.			16			C.			
Wednesday, ... 4	30.93	72.0	86.0	60.0	58.0		61.0	S.W.			12			C.			
Thursday, ... 5	29.76	74.0	88.0	63.0	71.0		78.0	W.			12			F.			
Friday, ... 6	29.89	74.0	80.0	63.0	52.0		41.0	N.W.			20			C.			
Saturday, ... 7	29.75	76.0	89.0	55.0	65.0		42.0	W.			26			C.			
Mean, the week.																	

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 7, 1888, TO JULY 13, 1888.

DEWITT, CALVIN, major and surgeon, United States Army. Leave of absence extended one month. S. O. 59, A. G. O., July 11, 1888.

BANISTER, WILLIAM B., lieutenant and assistant surgeon. Leave of absence extended twenty-seven days. S. O. 157, A. G. O., July 9, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING JULY 14, 1888.

MARTIN, WM., assistant surgeon. Ordered to Marine Rendezvous, San Francisco, Cal., and to attend officers of the Navy and Marine Corps not otherwise provided with medical aid.

AUZAL, E. W., assistant surgeon. Detached from duty at Marine Rendezvous, San Francisco, Cal., and special duty there and ordered to the Naval Academy.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING JULY 16, 1888.

BAILHACHE, B. H., surgeon. To proceed to Delaware Breakwater Quarantine Station as inspector. July 6, 1888.

FESSENDEN, C. S. D., surgeon. Leave of absence extended thirty days on account of sickness. July 14, 1888.

PURVIANCE, GEORGE, surgeon. To proceed to Chattanooga, Tenn., as inspector. July 6, 1888.

SAWTELLE, H. W., surgeon. Granted leave of absence for twenty-three days. July 9, 1888.

MCMOSTOS, W. P., assistant surgeon. To proceed to Galveston, Texas, for temporary duty. July 14, 1888.

PETTUS, W. J., assistant surgeon. Granted leave of absence for thirty days. July 16, 1888.

OBITUARY. DR. J. MILNER FOTHERGILL.

Dr. J. Milner Fothergill, the well-known English author of numerous and popular medical works, died suddenly the latter part of June. He was born on April 11, 1841, at Moreland, in Westmoreland. At an early age he was apprenticed to his father, who was also a medical man. He qualified in 1865 at Edinburgh, and for a while practised in his native village. Some years later he took the post of senior resident medical officer of the Leeds Public Dispensary. It was at about that time that he wrote his well-known essay upon "Digitalis, its Mode of Action and its Use," which gained for him the Hastings Gold Medal of the British Medical Association in 1870. He subsequently spent some time in Vienna and Berlin, studying his profession, and it was at the latter place that he wrote his work which passed into a second edition in 1879, "The Heart and its Diseases, with their Treatment, including the Gouty Heart." On his return to England in 1872, he took the membership of the Royal College of Physicians of London and settled down as a consultant. Some time later he was elected junior physician to the West London Hospital, a post he resigned in 1881. In 1875 he was elected on the Staff of the City of London Hospital for Diseases of the Chest, at Victoria Park, a post he

retained up to the last. In 1876 he brought out his best-known work, the "Practitioner's Hand-book of Treatment," a second edition of which was called for in 1880. After this date he carried out some original researches on the antagonism of drugs which paved the way to the employment of atropine as a remedy in cases of opium poisoning. His essay on the result of his observations gained for him the Fothergillian Gold Medal of the Medical Society. He was also elected an Associate Fellow of the College of Physicians of Philadelphia in 1879, and later, was made an honorary M.D. of Rush College, Chicago. More recently he wrote a very entertaining and instructive work on "Vaso-Renal Change versus Bright's Disease."

An English contemporary, from which we have derived the above facts, says of him: "The deceased was at all periods of his life an indefatigable worker. He was, at the same time, a practical physician and an accomplished *littérateur*. Bluff in his manners, his taste for sarcasm sometimes offended those who did not know him well enough to recognize the hearty good-nature that underlay the rough outside envelope. He was hospitable to a degree, and visitors from across the Atlantic knew no greater treat than to pass an evening with him enjoying the brilliancy of his conversational powers and the frank laughter with which he greeted the witticisms of others. His books were characterized by the same sound common-sense and *bonhomie* as his observations, and were unusually light reading for technical works. He was at least as much appreciated in America as at home, and his articles and books always commanded a favorable reception. Probably his last 'outing' was his trip to Bournemouth on the occasion of the opening of the new piece of railway. He was then far from well, but managed to make a very telling speech at the luncheon. Dr. Fothergill was a martyr to gout, and was enabled to treat it of *connaissance de cause*. His burly figure will be missed by a large circle of friends both inside and outside the profession."

OBITUARY. DR. A. Y. P. GARNETT.

Dr. A. Y. P. Garnett, of Washington, D. C., dropped suddenly dead at Rehoboth Beach, Del., on Wednesday the 11th inst., in the sixty-eighth year of his age. He was born in Essex County, Va., and was graduated from the University of Pennsylvania, Department of Medicine, in 1841, in which year he was appointed an assistant surgeon in the United States Navy, in which he served until 1848, when he settled in Washington. At the outbreak of the civil war he entered the Southern army as surgeon, returning to Washington at the close of the war, where, having been the physician of the late W. W. Corcoran, he acquired a large practice, especially among the Southern residents of that city. His marked Southern sympathies are shown by a recent remark made not altogether in jest, that the only two unconstructed rebels now left in the country were Jefferson Davis and himself. From 1856-61 and 1866-70 he was professor of clinical medicine in the National Medical College of Washington. In 1870 he was appointed emeritus professor, which position he held at the time of his death. He took an active part in organizing the Ninth International Medical Congress, and was elected president of the American Medical Association in 1887.

BOOKS AND PAMPHLETS RECEIVED.

The National Formulary of Unofficial Preparations. First issue. By authority of the American Pharmaceutical Association. 1888.

Lecture.

INQUIRY INTO THE INFLUENCE OF THE TEMPERATURE OF THE AIR ON THE DEATH OF INFANTS FROM DIARRHOEAL DISEASES.¹

BY DR. MEINERT, OF DRESDEN.

GENTLEMEN: It is a universally acknowledged fact proved by statistics, that the mortality of infants is chiefly due to diseases of the intestinal canal, and it is also universally acknowledged that the increase of mortality of infants owing to diarrhoea is connected with the elevation of the temperature during the summer months.

It is known, that epidemic summer diarrhoea of infancy appears only in those places where, in the summer months, the average temperature by day rises above 16° C. (59° F.), that large cities chiefly suffer from it, that infants at the breast of mother or wet-nurse are less subject to it than those fed artificially. A certain uniform correspondence between the temperature of the air and mortality from diarrhoeal diseases has been observed in certain places. There is no lack of hypotheses as to the origin of the summer diarrhoea of infants, but there are no personal observations which can enlighten us as to the real nature of this disease, which has increased to such an extraordinary degree.

Statistics, which have often proved successful in deciding medical problems, are no guide in these cases. The causes of death assigned in the public records, during the summer months, in referring to children under one year of age, are most unreliable; for not only is a medical certificate utterly wanting in the majority of cases; but even when such a certificate exists, there is a want of unanimity as to the name of the disease.

One special cause of the prevailing confusion, is the universal application of the term "convulsions," which we find most frequently in official reports, not only to such cases as were without medical assistance, but to those numerous cases where diarrhoea of infancy was complicated with convulsions.

The diagram laid before you, which gives a clear idea of the cause of death among infants in Dresden during the different months of the years beginning in 1881, shows how the increase of deaths in the height of summer, is every year attributable to the great frequency of convulsions and diarrhoea.

If we now undertake to examine etiologically the influence of certain causes on the disease, we shall be compelled not only in cases of death from diarrhoea (cholera infantum, cholera morbus), but also in cases of supposed "convulsions," to inquire exactly into the character of the disease in question. This is only possible by direct inquiry in the families where such deaths have taken place.

According to the data I have been able to procure from the Registration Reports concerning single cases of death in Dresden during a period of eleven weeks, July 11, to September 25, 1886, in 796 cases of infant mortality (under one year of age), 281 were attributed to convulsions, and 382 to diarrhoeal diseases under various names. Of these 663 cases 59% were testified by a physician. In 90½% of the cases the efforts to determine the causes of death were success-

ful mainly owing to the coöperation of my colleagues Drs. Hecker, Schottinir and Gilbert, and almost all the medical men under whose treatment the deceased children had been, encouraged me by their permission to anamnestic researches.

Further research proves that 36 cases of *genuine convulsions*, and 580 of *diarrhoeal diseases*, had occurred. Five hundred and nineteen papers, each containing 30 questions were returned to me, with the chief points well filled, the object being by this means to make a definite statement as to the clinical features. The diarrhoea was sometimes unaccompanied by *vomiting*, very frequently with convulsions; of these latter it was, of course, only possible to obtain exact information concerning those of the clonic form, about 20% of the cases. We counted 35 cases of *chronic (gastro) intestinal catarrh*, and 444 of *acute diarrhoea* (cholera infantum); of the children carried off by these diseases, 71% had till then preserved healthy digestive organs, and 54% were healthy in every respect.

On this chart I have noted each case with its number; in the lower diagram, the day the illness commenced, in the upper, the day of its fatal termination. Homonymous numbers (those referring to the same case) are joined by a line, so that the duration of each separate illness can be easily observed. The curved lines over the diagrams gives the mean daily temperature in the open air, the height of the barometer, and the average relative humidity of the air, above these are noted the velocity and direction of the wind, the rainfall and thunderstorms.

You see, gentlemen, to what extent a rise of temperature augments the number of cases of sickness as well as the number of deaths. *Pressure and humidity of the atmosphere, rainfall and the direction of the winds*, have less power to disturb the parallelism between increased illness and the temperature of the air, than has been hitherto supposed; and the *velocity of the wind* modifies it to a great extent.

A higher degree of temperature combined with high wind, is not dangerous, but moderate temperature without wind, produces a considerable increase of sickness and death. Most of these cases occur on hot days with little wind, and most cases of sickness are found together with these unfavorable conditions of the weather, or they follow immediately upon it. There are days, when the numerous cases of death coincide with the most unfavorable condition of the weather, but often they follow also with longer intervals (of a week or so). This circumstance is described by the lines representing the illness. In the average, the infants died 7½ days after the day on which they were taken ill with diarrhoea; 26 under 24 hours of sickness, 49 on the second day, 54 on the third day of illness. Of 444 infants, only 27 lived longer than a fortnight from the time of being taken ill.

The greater the heat, and the stiller the wind, the quicker the development of the sickness, and its fatal termination will be.

You will see that the vertical lines which denote the cases, which terminated fatally the same day the illness commenced, occur only in the hottest and most sultry days.

If the weather is the same at the end as it was in the beginning of the eleven weeks, the mortality is, notwithstanding different; namely, lower in the beginning, and higher at the end. This is to be explained partly by the larger amount of accumulated heat,

¹ Lecture delivered in the Hygienic Section, at the sixtieth meeting of German naturalists and physicians.

stored up in the walls of the houses during the height of the summer, and partly by the greater number of sick children, which increased from week to week — as my diagram shows. The 3d, 14th and 16th of September, were the days on which the greatest number of deaths from diarrhoea occurred during the whole course of the epidemic (19, 18 and 21 cases); these however, include cases of illness which occurred during the previous weeks. I refer to those infants of whom, as our anamnestic researches show, one part were already on the way to recovery, and probably would have recovered, if the intense heat of July, which produced diarrhoea had not returned in September.

The results of the census of December 1, 1885, enabled me to make inquiries into the conditions under which the infants in Dresden died of diarrhoea during the eleven weeks recorded.

Among 246,088 inhabitants of Dresden, (including the military establishments) there were 5,893 (23.88%) children, less than twelve months old, according to the census of December 1, 1885; of this number (not including doubtful cases) 580 died of diarrhoea (cholera infantum), with or without convulsions, between the 11th of July, and the 25th of September, that is to say, of the girls 9.18%; of the boys 10.15% (about the same percentage of both sexes, as in the other months of the year). Of these children, 15.7% were illegitimate; 60.8% belonged to the working classes, 23% to the middle classes, $\frac{1}{2}$ to the higher, and more educated classes. In Dresden, 10.22% of the children living on the right bank of the Elbe died, while on the left bank (notwithstanding that the mean temperature was 2.13° C. [17.46° F.] higher during the weeks recorded than on the right bank) only 9.59% died. In the eleven districts, the percentage of deaths fluctuated between 4.6% and 13% among infants under twelve months old; the relative number of infants was not always in proportion to these deaths; there were districts, with a considerable population of children, where there were many deaths, and again other districts, containing the same population, where comparatively few deaths occurred. Illegitimate infants, among whom the mortality is greater in Dresden as well as in most other places (judging by the year's record) were attacked by fatal diarrhoea less than legitimate children. The percentage of deaths at different times during the first year of infancy, and the number of deaths from gastro-intestinal diseases, differed in the cooler seasons from that in the hot summer-months. There is also a difference in the number of deaths in the various stories of the houses.

All these peculiarities, paradoxical as they appear at first, were confirmed by the observations renewed in the four abnormally hot weeks in 1887. (We speak of the deaths occurring in Dresden on the left bank of the Elbe, among children in their first and second years.) But in 1887 (in 141 cases), the average duration of the illness was shorter (three and one-half days), the number of the rapid cases larger, (for instance, death taking place on the first day in 14% of all cases, against 6% the preceding year). In the middle classes the average number (32%) was larger; among the working classes far less than in the year 1886 (only 53.19%). For 1887 the cases complicated by convulsions were far more frequent.

The direction in which I had to continue my investigations was thus clearly indicated. First of all the

dwellings in which deaths had occurred, had to be examined.

I found that generally deaths by summer diarrhoea occurred only in those dwellings in which, by the influence of a high atmospheric temperature, a still higher temperature indoors had developed, in consequence of insufficient natural ventilation. I observed that deaths occurred more frequently in dwellings exposed to the heat of the sun to which winds had scarcely any access. The greatest relative number of deaths occurred in the parterres and first floors. (These were exposed not merely to the direct heat of the sun, but also to the heat produced by the reflection of the rays of the sun from the soil.) In the underground dwellings (souterrains) which are very little exposed to the rays of the sun, there was the smallest number of deaths.

Compared with the total number of children under one year of age, living the first of December, 1885, in each of the various stories of dwellings, there died of diarrhoea during the weeks above mentioned :

	1886 (560 cases).	1887 (134 cases).
Underground	3.98 per cent.	2.44 per cent.
Ground Floor	12.78 "	4.48 "
First Floor	16.70 "	3.63 "
Second Floor	9.13 "	2.36 "
Third Floor	8.18 "	2.70 "
Fourth Floor	9.18 "	3.69 "
Fifth Floor	11.27 "	1.61 "

To gain an exact insight into the influence of dwellings on the diarrhoeal diseases of infants, the first floors where deaths had occurred in 1886, were examined. The dwellings on the first floor, being inhabited by the better classes, where poverty could have no influence, were the most suitable for the purpose.

The temperature of these dwellings, which were examined in July and August, 1887 (one meter from the floor), was found higher than the outside temperature in the shade by 3.60° C., (29.52° F.), to 14.40° C., (56.64° F.), on an average of 8.59° C., (42.95° F.). Evidently great obstacles existed which prevented the proper entrance of atmospheric air to these dwellings.

Only one child died in a detached house, the other houses where deaths occurred were in broken rows or surrounded by buildings. It was only in ten houses that it was possible to have a thorough draught from one side to the other. The fact of living in close proximity proved to be of importance only in those cases where there was a lack of ventilation. In the dwellings of the first floor, where deaths occurred, we found on an average, in the bed-rooms 12.72 cubic meters of air for each person. In the houses of the Johann Meyer-Strasse, which have been built for workmen by the City Board, and which escaped the disease, a child has, on an average, to be satisfied with 4.57 cubic meters of air in the bed-rooms. But these houses are not enclosed by other buildings, and the rooms can be exposed to strong, beneficial currents of air.

In that part of Antonstadt which consists chiefly of villas, only three deaths occurred, although there are 11 streets and 2,921 inhabitants, among them being fifty children under a year of age. These deaths occurred only in one house (Schillerstrasse 63), a house which by its wings and backbuildings forming narrow courts, is the most unhealthy of all the dwellings in that quarter.

In dwellings of equal cubic measurement — *ceteris paribus* — there were the greatest number of deaths

in those with low rooms. (Rooms with higher ceilings allow better ventilation through the walls.) In the dwellings where deaths occurred, the rooms on the first floors were 2.78 meters high, against a height of 3.23 meters in the workmen's houses before mentioned.

Gentlemen, the plan of the city which I here lay before you shows by different colors the average proportion of deaths in each single street (compared to the total number of infants under twelve months who were living on these streets). You will never find proportions which cannot be explained by the condition of the dwellings and the density of the population.

Sometimes I doubted whether the relations I found existed in every case. But I found again that the observed dependence existed everywhere. The great mortality, for instance (15.78%), in Schillerstrasse, which is a superior part of the town and like a garden, was solely due to the three cases in the house No. 63. In the Oppel-Suburb you see three streets close together, in which the deaths differ greatly in number. In Hechtstrasse there were 18.49%, in Kieterstrasse 2.50%, in Johann Meyer-Strasse 0.00%, although the population of all these three streets consists of the same class of workmen. But Hechtstrasse is built on very low ground in close terraces with lateral and back-buildings; the Kieterstrasse lies high with semi-detached houses, and in Johann Meyer-Strasse (although the drainage is indifferent), we find only detached houses of the working classes, consequently surrounded on all sides by the open air.

The next question was, whether among the whole number of children, living in unhealthy houses, we could discover a reason for individual causes, which might explain the fact that one portion of the community should be attacked by fatal diarrhoea while the rest escaped.

Physicians are accustomed in such researches to make a distinction between legitimate and illegitimate children, and they are right, because by the unfavorable conditions of their nourishment illegitimate children are more likely to be subject to affections of the stomach and intestines.

It is a remarkable fact that, as I have mentioned before, in the year 1886, during the eleven weeks, beginning July 11th, a relatively smaller number of illegitimate children died than legitimate (namely, 6.82% illegitimate out of 1,334 living illegimates, and 8.82% out of 5,534 living legitimates), against 21% deaths of illegitimate and 16% of legitimate children in the whole year. This may have been mere chance; but, as the reports proved, the case was the same in the year 1887. If we go back ten years and compare the relative proportions of the third quarter of every year with the other quarters, we find, as you may learn by this diagram, that this strange fact was not observed until the year 1883, and then somewhat suddenly. At that time people began to take more interest in the matter than had been the case formerly. Up to that period illegitimate children had been under the control of the government police. According to an order issued by the Saxon parliament the town was now charged with the inspection of these children, and this duty is since then performed in the best manner possible. Only such women are permitted to take charge of illegitimate children (and then only of two at a time), whose dwellings have been declared by the inspector of the local Board of Health to be healthy.

By this reason we recognize the cause of lower mortality among illegitimate children; it is the more favorable condition of dwellings which in Dresden are selected for illegitimate children, whilst legitimate children of workmen are condemned to live in the worst imaginable dwellings.

The greatest contrast, however, consists between children fed in a natural manner and such as are brought up artificially; this has been observed wherever unusual mortality from summer diarrhoea prevails.

There were in Dresden, out of 479 children in 1886, mentioned above, only 19 nursed at the breast, none of them more than three months old. In 1887, of 123 children, of our report, nursed at the breast only 5, and not one more than four months old. The only nourishment, or at least the principal food, of almost all the other children had been cow's milk. (According to researches made *ad hoc*—among some hundreds of families of workmen, in reference to their children of one, two, three, four, five, etc., months, 65.07, 60.26, 49.78, 38.94, 35.75, etc. per cent. were nursed by their mothers.)

The fact of the existence of a noxious influence which explains the dangerous condition of certain dwellings, as well as the little chance to escape for children brought up by hand, is a fact of the highest importance for the etiology of cholera infantum. Hitherto, there has been a lack of authentic criterions for the different hypothetic arguments which treat of the origin of our disease.

Why do infants at the breast have an advantage even in the most unhealthy dwellings, and why do children brought up by hand very seldom die of the summer diarrhoea, in favorable dwellings, although at other times disposed to it to so great a degree?

If I were to indicate the noxious qualities, which give a special characteristic to the dwellings in which the infant died, I should say, there was partly an impure air by the exhalation from human beings. However, too great a stress must not be laid on this, because similar conditions and circumstances are found in winter without producing the characteristic summer disease.

Far more important appears to me the consideration that the climate in the dwellings where the child died, even when the temperature was moderate, was, by an exceedingly low measure of ventilation, such as to hinder the functions regulating the heat of the body.

Flügge, in his valuable researches on "Das Wohnungsklima für Zeit des Hochsommers"² has already drawn attention to this danger.

If all the remedies are at hand which the regulation of heat affords at the time of its greatest requirements, no very serious danger for the balance of heat is threatened by the sun of our latitudes, not even in the worst conjunctures which are possible in our dwellings. The most important of these remedies is the increased consumption of water. This consumption of water by the infant at the mother's breast is regulated in the most practical manner possible, by an increased consumption of water by its nurse. (I have made this self-regulation the object of a special series of examinations.) But it is different with an infant brought up by hand. In hot weather it will drink—if the intelligence of the mother does not put a stop to it—in

² Beiträge für Hygiene. Leipzig, 1879.

creasing quantities of milk, and as the milk is of the same concentration as usual, the infant takes an *excess of substantial food*.

By this the *production of heat of the body will be increased*, instead of, as is the case with an infant at the breast — of being diminished in the warm season.

This happens the sooner, as the digestive organs of the infants are the more normal. (Indeed there were among those 444 children, mentioned in the first part of my lecture, that died from summer complaint 71 per cent. with previously healthy digestive organs.) Other children will catch dyspepsia by an over-filling of the stomach, and will then take in less water than the high temperature of the summer requires.

In the one case as well as in the other, there is an *increase of the temperature of the body* under certain external conditions preventing the discharge of heat of the body.

As a matter of fact thermometrical observations which we made on the months of July and August, 1887, in presumably unfavorable dwellings, on a great number of infants, proved that a feverish increase of temperature of the body very frequently occurred.

Here in my chart you see some curves referring to infants whose temperature was taken (*in ano*) three times daily for weeks together. By these curves you can recognize the increase and decrease of temperature out of doors, and that of the essentially higher temperature in the dwellings. Two of the graphic charts are especially interesting. In both cases, the indoor temperature of the air increasing rapidly after a prodromical fever of a few days, together with a temperature (*in ano*) of 38.8° C (102.84° F.) a *typical cholera infantum sets in*, complicated in the one case by convulsions and ending with death.

Gentlemen, we have now arrived at the point where, according to my opinion, the problem lies.

Is the prodromal fever of the children's sickness only produced by *accumulation of heat* of the body, and in this case, what is the relation between this fever and the typical affections of the digestive organs? or have we, from the very beginning, to deal with the invasive fever of a *zymotic disease*, the producer of which is only developed, when just these dangers of dwellings and foods are united, which we recognized as the genetic conditions for producing cholera infantum?

My modest contributions in solving these questions range naturally with my clinical statements in the cases referred by me. But this appears to me to belong less to the province of the hygienic section of this Congress and therefore I intend to conclude my report on this subject in the section for diseases of children.⁸

The influence of the above mentioned conditions of dwellings in the hottest days of summer shows itself by the *different degrees of danger for the different ages of the children*.⁹ The highest mortality prevailed among the children under six months. Their greater danger is partly explained by the special nature of their digestive organs which disagree with artificial food; partly by the perspiration which is so very important to the regulation of heat and which is only developed after the first three months of life; partly by the bad habit, — customary in Saxony — of keeping

children of this age under thick covers even in the greatest heat, thus forcibly preventing the movements of the limbs by tight clothes. From the sixth month the mortality decreases rapidly so as almost to disappear in the second year, when children acquire the most important faculties of free movement and of speech, as a preventive against suffering from excessive heat.

Now, gentlemen, I request you to glance at my graphic chart, which shows the monthly rate of mortality amongst children in the larger towns of the European continent and the United States of North America (the percentage being taken from 100 infants born alive), as far as serviceable reports were at my disposal. You see, in looking at the map of Europe, how the mortality of infants in the summer months constantly decreases towards the south from Berlin to Rome, in spite of the increasing temperature towards the south. Without doubt one chief cause is, that towards the south of Europe you find more mothers suckling their infants. The houses which in our own country are more adapted to shelter us from the inclemency of a cold climate, as well as the treatment of children, are in the South in better accordance with the requirement of a warm climate.

I hope, gentlemen, soon to be able to supply the omissions you will have noticed in my statement of to-day, by a complete publication of my material and my researches. Until then, I will permit myself to postpone my thanks to those colleagues and officials in government and municipal service by whose kind coöperation I have been enabled to work thus far.

Original Articles.

INVETERATE HEADACHE, WITH CASES.¹

BY HAMILTON OSGOOD, M.D.

To write upon persistent and oft-recurring headache, is nearly as discouraging as the attempt to overcome it by treatment. It is an affection which either yields to no remedy whatever, or, if it be relieved, is sure to return as soon as the effect of the panacea has disappeared. If not of this inveterate character it is very frequent, is intractable while it lasts, and so capricious, that although it may yield to a given method of relief upon one occasion, upon another the treatment is not of the slightest avail. This discourages the patient and annoys the physician. If the latter be a routinist he is embarrassed. He plies his anti-neuralgics. They achieve little or nothing. Sometimes he feels encouraged; generally he is baffled. Strange as it may seem he makes no effort to discover a hidden cause for the pain. To him headache means neuralgia, and the remedies he applies are simply those which report says are efficient in such cases.

Occasionally, among wiser and more thoughtful physicians, there is a degree of indifference, a careless resort to a well-thumbed prescription which generally fails. The case is uninteresting. It presents no stimulus to the physician's mind. In short, he neglects the patient and wins what he may deserve, but which is not true of him, a reputation for ignorance.

The common, the non-perilous ailments of our pa-

⁸ See short report in *Jahrbuch für Kinderheilkunde*, N. F. xxvi, 3.

⁹ Compared with the total number of children living July 1, 1886, in the 1st, 2d, 3d, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th months of their age, the percentage of deaths from diarrhoeal diseases was 14.9, 13.16, 13.07, 12.41, 12.42, 6.66, 6.09, 4.05, 3.52, 3.32, 4.12.

¹ Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, May 18, 1888.

tients are apt to be superficially treated. Headache is a plague to an indolent medical man. He regards it as of little moment, and treats it accordingly. To the patient, however, the ailment is a serious matter, depriving him as it does of power in practical life, of enjoyment of vacation, of comfort at home. It entails annoyance to others, for it renders the sufferer irritable, unjust and uncompanionable. If he be not relieved when he might be, the physician naturally deserves blame for an evil of wide extent.

In the nerve-tissue concerned in the form of pain in question, there seems to be almost intelligence and reasoning power. Unfortunately, this is shown by the incessant endeavor of this tissue to reassert itself. Pathologically sensitive nerves seem never to forget their capability of creating suffering. One might say they were ever on the alert for lack of vigilance on the part of the patient; that they constantly lurk for opportunity, for, no sooner are they quieted by the physician's skill than they start up armed with new vigor in their diabolical ability to torture humanity. Their arts are hydra-headed and woe betide the object of their wiles if he for a moment relax his self-defence. He may forget but they never do; on the contrary, the more careless he, the more active and energetic are they.

It is no wonder then that chronic headache is indifferently treated by so many physicians. The very persistence of the pain too often destroys the interest of the medical attendant.

Inveterate headache may be relieved by one or more of the scores of internal and external remedies, but these merely wither the fruit without touching the root of the evil. Indeed, the management of this affection is so empirical that it recalls Voltaire's reflection upon the practice of medicine, which he said consisted in: "Putting medicines, of which we know little, into a body of which we know nothing." No sooner does a form of treatment promise success in a patient, whose look and daily history indicate that at last the headaches have yielded, when like a thunder-clap, a new series of attack appears, and the course adopted and heretofore efficient, becomes inert.

As an illustration: A lady, single, aged fifty-five, has suffered from intense headache since her youth. She has had every variety of treatment; has consulted many physicians. Remedies which on one occasion relieved her failed utterly on another. Change of climate was extremely beneficial during one year. On returning to the same locality the following year her headache was incessant. She is known among her friends as a victim of pain and has had every reason to feel profound discouragement. My first professional interview with her was during an attack of headache, in which, as is usual with her at such times, she seemed nearly unconscious from suffering. I was merely asked to relieve her by a subcutaneous injection of morphia, which I did, using one-half grain. Subsequently, I was requested to take charge of the case. A careful examination gave me the following information: The patient was well-nourished; appetite generally good; bowels in normal condition; her face showed the exhaustion caused by chronic pain; the menstrual periods (now passed) had always been regular, and, save that a headache was apt to follow them, free from annoyance of any nature. Her headache occasionally extended to the left side of the cranium, but was almost wholly confined to the right side

and never took the form of clonus. The onset of pain, however, was not peculiar to the menstrual epoch, but occurred irregularly at other times, and so frequently that the patient was never sure of being able to keep any engagement whatever. "Pain is the prayer of the nerve for healthy blood," says Romberg.² During the thirty years of her experience of pain, this lady has taken every sort of tonic and every variety of blood-making food. The wise adage, "Eat when you are hungry but not so long as you are hungry," has been carefully observed, as have also the ordinary laws of health.

Sudden changes of weather have always given her great discomfort. This may be explained by Wright's³ computation to the effect that a change of one inch in the barometer increases or decreases the atmospheric weight which the body of an average man sustains—by 1,080 pounds. "The results in periods of great weather fluctuations are headaches and even apoplexy." In my patient it is easy to imagine the painful effect of the abrupt oscillations in the circulation, which would occur under such conditions.

The headaches I found to be invariably preceded by flushing of the right ear, the color deepening, as the pain appeared, to a livid hue. A little later the left ear became flushed but never took on the darker color of the right.

This anomaly in the circulation led me to examine the heart. I found it free from organic lesion, but the first sound was weaker than the second, and both sounds as well as the character of the heart's impulse indicated lack of power in the cardiac muscle. This explained the temperature of the hands, which were invariably cold, and caused me to suspect that the lividity of the right ear during an attack of pain and the deeper co-existing color of the right face, as compared with that of the left, were due to weak heart and habitual lack of vaso-motor energy in the bloodvessels of the right side of the head. This, I argued, was a logical accompaniment of the persistence of pain in this side, and probably showed a chronic dilatation, or at any rate weakness in the walls, of the vessels of the right side, and which became apparent whenever the irritation of pain reflexively lessened the energy of the heart. During an attack, I further argued, these vessels probably dilated and since "vessels of the brain are not supported by pressure of surrounding elastic muscles, and have, moreover, a less powerful construction, than have bloodvessels elsewhere,"⁴ this temporary dilatation of weakened vessels created a local obstacle to the onward flow of the blood, and hence the increasing deeper hue of the visible tissues of this as compared with the left side of the head and face.

The stagnation of the blood-current is naturally followed by an accumulation of carbonic acid, and in consequence by an exacerbation of pain. A good illustration of this local condition of the circulation may be seen in the purple outlines of the blood-vessels of a drunkard's nose. Here the vaso-motor energy is permanently deadened by alcohol, and we see the constant presence of carbonic acid. In the patient in question, however, the local impurity of blood disappears so soon as the pain and its reflex effects upon the heart cease.

² Nerven Krankheiten.

³ On Headache.

⁴ Wright on Headache.

In behalf of my theory allow me to digress for a moment in order to relate the most striking instance of neurotic reflex which has ever come to my notice. Some years ago I was called to a lady who was suffering from severe pain in the right ear. I had frequently relieved this ear of large masses of wax, and the patient rightly suspecting the cause of the pain, had vainly tried to clear the ear in the usual way. When I reached her house the lady told me she was also in great discomfort from a delayed menstrual period, now eight days overdue. It required fifteen minutes of time and copious injections of warm water to free the patient's ear from a very large mass of cerumen. The relief was immense, and, moreover, before I left the house the period had appeared.

It is not strange then that great pain in the head reflexively will lessen the power of the heart, and I feel very confident of the correctness of my argument in the case in question. After writing the foregoing, I happened to find in Anstie's clever book on neuralgia, the following remark: "muscular viscera which are composed of unstriped fibre, like the intestines, or of a mixture of striped and unstriped, like the heart, are probably very liable to a secondary paralytic influence from certain special neuralgias."

Still I was no nearer to a discovery of the original cause of the headaches. As to the quality of the pain I may safely repeat Begbie's words in relation to a similar case quoted by Day, in his book on headache: "It was not nervous, nor hysterical; it was not inflammatory, nor congestive; it was not anemic; it was not dyspeptic; it was not of a rheumatic, nor of neuralgic character; it was not periostitic; it was not periodic." Finally, something in the general look of the patient, nothing positive, there being no especial symptom which could be named, suggested gout. The patient denied all knowledge of any case of this ailment in her family, but a careful inquiry into the family history revealed the fact that in several of her ancestors gout had existed. I at once determined to test this possibility, and took with me a quantity of the patient's urine for examination.

Previously, however, I ordered tincture of strophanthus in doses of four drops which I subsequently increased to eight drops, three times daily. I may say here that even before I adopted any other form of treatment, so soon as the cardiac tonic began to show its effect in a relatively stronger first sound of the heart, the headaches became less intense in character—the discoloration of the right ear appeared less frequently, and when it did appear, was far lighter in hue. This was the first proof that the headaches were partially due to weak heart.

In examining the urine, I did not make a quantitative analysis for the uric acid present, but did find the fluid intensely and unusually acid, and that the specific gravity was 1.034. This, in the absence of albumen and sugar, confirmed me in my suspicion of the existence in the patient of a gouty tendency.

[In a lecture upon gout, Trousseau relates a case of headache which puzzled him extremely. This was in the early days of his practice. After a long period of doubt and insufficient treatment, the case was cleared up by a frank onset of gout, in reference to which Trousseau makes the interesting remark. "I did not then know that *gout* and *migraine* are sisters.—*Clinique Médicale*, Vol. III.]

Prescribing the bi-carbonate of soda in scruple

doses, three times daily, the urine soon became moderately acid, the specific gravity fell to 1.024 and during the following six months, not only did the headaches become very infrequent but when they appeared the pain, save in two instances, was not acute.

Meanwhile, under alternate use of the tinctures of strophanthus and digitalis, the circulation of my patient had improved to such a degree that the hands and feet became habitually warm, her face lost its expression of exhaustion, her eyes brightened and she looked years younger than when I first saw her. This change corresponded with a steadily increasing power in the first sound of the heart which was now stronger than the second sound. During this interval, I substituted Buffalo lithia water (spring No. 2) for the soda, and the patient became more comfortable than she had been for several years, only two headaches of moment occurring during these six months.

This period of truce was then suddenly interrupted by onset after onset of intense headache, which, however, to my great relief, I soon found had their origin in the suppurating pulp of a molar tooth, so that they did not disturb my diagnosis of gouty headache. The tooth was soon relieved but the cranial pain held on. Antipyrine quieted the headache but caused unbearable nausea.

Just then appeared in *La Semaine Médicale*, Germaine Séd's recommendation to give with antipyrine, an equal bulk of the bi-carbonate of soda as a certain means of avoiding nausea. This proved a success, and disposed of all tendency to nausea in this case and several other cases. In the patient in question, however, the drug soon became inert. The caffeine, bromo-caffeine, likewise guarana of which caffeine is the active principle, were never of any use to her. Cannabis indica is perfectly negative and the patient is so annoyingly familiar with every other known remedy for headache and the inefficacy of all of these, that in her paroxysms of pain you will not wonder, notwithstanding I have a strong prejudice against the drug, that I have occasionally resorted to morphia, which of course, relieves the pain, yet is invariably followed by severe vomiting. I did not try antifebrin because by this time I had lost faith in remedies of that sort for this patient.

When she came out of this storm I found that the former effectual treatment by cardiac tonics and alkalies had utterly lost its power. This fact together with absence of relief from medicines which benefit other forms of headache, still farther convinced me that gout and not neuralgia was the root of the ailment and I finally resorted to absolutely anti-arthritis treatment—wine of colchicum and iodide of potassium—the diet being carefully regulated. That I did not do so before, in view of my diagnosis, was due to my hope that the cardiac tonic and alkalies would prove effectual, as indeed they decidedly did for six months. Almost at once after beginning to take the remedies for gout the patient experienced a heretofore unknown sense of relief. Time is needed to prove that she has been wholly relieved of her suffering, but she is already in a condition of comfort to which she has long been a stranger, and although at times she is conscious of pain, it is so mild in character she does not consider it of moment and I hope it is due to nothing more than nerve-memory. Twice weekly, I give her a strong secondary galvanic current. This is acting well as a nerve tonic and the

patient is more vigorous in every sense. She is taking eighteen drops of the wine of colchicum root and eight grains of the potash, three times daily.⁵

A prominent feature in the symptoms of this case has been the weak heart; careful stimulation of which contributed largely to the well-being of my patient, during the six months of almost entire freedom from severe pain.

This point merits especial mention. I believe we neglect the heart in many cases in which if this organ were stimulated, patients would sooner reach a condition of comfort. In the patient in question, notwithstanding she has been a victim of pain for thirty years during which she has received such a variety of treatment, that it is difficult to name a remedy with which she is not familiar, and in spite of having passed through the hands of very many physicians, her heart has never before been carefully examined nor directly treated.

The heart being the active agent in the general circulation, distant localities suffer when this organ becomes feeble, in the same sense as would the outlying beds of a garden, the source of whose supply of water we may suppose to be a centrally located pump, if the pump lost power and became unable to give the distant beds their needed supply. In short, the necessity of aiding the heart in every case of chronic headache, is the one point which I would especially emphasize, particularly because I find it universally neglected in the books. Indeed, there are few ailments of any nature, in treating which it would be unwise to aid the heart. But, it is, I believe, too apt to be the case, if the physician find a regular cardiac beat and no murmur, that he pronounces, or deems, the organ in a normal condition, when there may be a lack of cardiac energy as shown by the radial pulse and by the existing relation of the heart-sounds to each other.

It is but recently that I treated a case of chronic hyperæmia and catarrh of the pharynx, with distended veins and hypertrophy of the follicles, in which case I also found a weak heart and a gentle systolic murmur. Until I resorted to cardiac stimulation I made but slow progress in relieving the catarrhal ailment, which, however, decreased rapidly so soon as I began to aid the heart, the condition of which undoubtedly had much to do with the pharyngitis. This suggests a second case of headache of long duration in which the pain was located strictly over the occiput. The anti-neuralgic gamut of remedies, the patient told me, had been used in vain. He was frequently unfitted for his work which was wholly intellectual. His sleep had long been irregular and insufficient. His moods became despondent. He was never free from pain, which, however, varied in degree. This is the brief history of many years.

I found cold hands, injected conjunctivæ, a muddy skin. Examining the heart, though it was free from murmur and pulsated with regularity, its tones and impulse were not sufficiently strong for a well-developed man, and the first sound was decidedly weaker than the second. I at once prescribed the tincture of strophanthus four times daily, the fourth dose being larger than the other three and to be taken at bedtime. Very soon the chronic occipital pain was relieved and up to this time the remedy has been

efficient. According to various writers occipital headache is not understood. Nevertheless, it seems to me when cause and effect are as clearly shown and as easily relieved as in the case I have just cited, that we do get some idea of the conditions whose united result is headache. Still, even here, why the pain should confine itself strictly to the occiput, is, I must admit, a *quid ignotum*. I have, however, sometimes questioned whether the sudden and almost right-angled curves in the vertebral arteries just before they unite to form the basilar artery, are not a factor in occipital pain when the heart is weak or tired. At any rate the pain is almost wholly in the zone of these four abrupt turns in the two vertebral arteries.

Could it be vaso-motor pain due to pressure caused in these arteries by the resistance offered to the circulation by the arterial curves, plus the local accumulation of blood due to the weakened *vis a tergo* resulting from a feeble heart? There is much to learn here and I advance these theories with great diffidence. Erb⁶ says: "In regard to the etiology of this form of headache but little is known;" and I have at present a case under treatment which is very puzzling.

The patient dates his neuralgia as far back as his student days when he worked incessantly and neglected general care of his health. His daily life is spent in severe brain work. He passes at least eight hours daily in a chemical laboratory, which might lead one to suppose gases and odors to be one element in his headache from which he says he has not once been free for sixteen years. But, inasmuch, as during the long vacation, which is lived largely in the open air in a very high locality, the pain continues without intermission, the natural inference is that laboratory work has little or no influence in the causation of it. Moreover, the headaches began years before the patient became a chemist.

This seems one of those cases in which, as Erb says, no anatomical cause of pain can be shown to exist, and thus far it has defeated me. It need not be said that medicines, electricity, regimen, gymnastics, etc., have been vainly tried. Cannabis indica, antipyrine, antifebrin, galvanism have no effect whatever. I found that friction over the occiput and upper portion of the nape of the neck afforded decided relief. The patient continued the procedure but finally thought that so much movement increased the pain and it was abandoned.

He cannot sleep upon the back without causing intense exacerbation of the pain, and is obliged to use an extremely thin pillow, for, when lying upon his side the slightest bend of the neck aggravates the pain. The increase of pain in the dorsal decubitus and by a bend in the neck is the possible result of retarding the circulation. Temporary relief from friction was the probable consequence of lessening the pressure in subjacent bloodvessels. These are points which seem to support my theory in relation to the outcome of the sudden slowing of the blood-current by the curves in the vertebral arteries.

Cardiac tonics have as yet produced no result, but have not been used long enough to prove their lack of benefit.

Blisters so highly recommended by Austie and others, have not been tried, because the patient said he preferred the disease. The cannabis indica cure of this form of headache, so vaunted by Stephen Mac-

⁵ Four weeks later: The slight pain which persisted after the beginning of the anti-arthritic treatment has now disappeared.

⁶ Ziemssen's Cyclop. Vol. XI.

kenzie in *Braithwaite's Retrospect* for July last, and before him by Austie, Reynolds and other writers, has been pushed to intoxicating doses, and, excepting exhilaration, without apparent effect of any nature. This is the most obstinate case of headache in all my experience. During his youth the patient was favored with intervals of relief; but, let me recall his statement, that for sixteen years there has not been a single intermission in the pain which, in short, has now been so long a habit with him that he is quite able to be natural and normal in manner and daily life. He has an irritable and therefore a sensitive heart, otherwise his general functions are undisturbed. His appetite is always good, but he has a look of chronic fatigue.

One thing that should not be forgotten is, that he is a smoker, but smokes moderately. I found that early in the day he was very dependent upon his tobacco, so much so that unless he had previously smoked, he could not deliver a morning lecture without dizziness. For that reason I requested him to delay his first smoke by half-hours until it became noon. The patient, meanwhile, being obliged to fight a battle in which he finally conquered, to his benefit. I cannot believe this a tobacco headache, for it began long before the patient smoked at all, and used to be more intense than it now is. The patient's eyes have been often and carefully examined by able oculists, and every defect corrected by the proper glasses.

He is not in any sense a hypochondriac, and I believe the case to be perfectly honest, so much so, indeed, as to give me the uncomfortable suspicion that this headache is my master—thus far at any rate. It can, however, be said that the pain although persistent, seems to be wearing away, for it is less intense than it formerly was.

One important feature in this case should be mentioned: I have quite recently been led to surmise that mental worry has been an influence in this prolonged headache, for it has become apparent that a decrease in the intensity of the pain has coincided with a gradually increasing relief from the cause of the worry.

The cases I have chosen in illustration of my subject do not seem to belong to the class of merely peripheral neuralgias, and for that reason are the more baffling.

I should have been glad to have quoted largely from writers on nervous affections, but, so far as my experience goes, in the domain of inveterate headache the books are well-nigh useless. I hope, however, to learn something from those who speak on my paper. Something more useful, at all events, than Strümpel's⁷ final remark on headaches which defy every remedy.

He calmly says: "Still the patient has the comfort of knowing that after years and decades, the affection, when old age is reached, not rarely ceases of itself."

A CASE OF ATHETOSIS.¹

BY C. P. PENGRA, M.D., BOSTON.

ATHETOSIS is the name of a disease that was first recognized and named by Dr. W. A. Hammond, of New York, in 1871. It is characterized by an inability to retain the fingers and toes in any position in which they are placed, and by continual motion.

¹ Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Suffolk District Medical Society, May 3, 1888.

⁷ Specielle Path. u. Therapie.

Since his first paper in 1871, there have been thirty-eight cases reported from Europe and eight from the United States; and it is this rarity of its occurrence that has induced me to present this case to the Society, with the hope that it may aid in clearing up the obscurity that surrounds its etiology, pathology, treatment and claims as a definite disease.

In all of his writings Dr. W. A. Hammond claims that athetosis is a distinct disease, and, while admitting its analogy to chorea and cerebro-spinal sclerosis, does maintain that it is independent, and can be so diagnosed. In this he is supported by Dreidenberg, in "Vratch," who goes even further, admitting that it is not necessarily a result of hemiplegia, but may even be idiopathic.

Opposed to this view are Putzel,² Sturges,³ Leube,⁴ G. A. Hammond and Birdsall,⁵ and others.

In all cases reported, there has been noted, at some previous period, a history of epilepsy, chorea, hemiplegia, or other cerebral disturbance; while the case of Leube, after having had athetoid movements for four years, actually developed into, and continued as, ordinary severe chorea. The history of the present case is no exception to the rule; and, considering the lesions most often found in post-mortem examinations, it seems that we are forced to believe that athetosis is too intimately allied to chorea, hemichorea, and the like, to merit its claim of being distinct. The lesions found are in the corpus striatum, optic thalamus, or both, and the cortex cerebri, and are the same as occur in the allied troubles. My diagnosis depends upon the facts, that, in this case, the spasms are limited to the right hand only; that they are uniform, slow and quiet; that the muscles contract or extend together, and are firm and tense; that there is no trembling in any position of the hand or body; that the muscles of that arm are well developed; and that there is no scanning in speech. Hysteria is eliminated by the age at which it began and by the present condition of the patient, Mrs. Anna B. Grover, age twenty-two, born in Marshalltown, Pa. Her family history is very good, excepting slight rheumatic attacks in the father's later life, and paralysis agitans in one aunt.

Her own health has been exceptionally good, with the following exceptions received from her father:—

"Anna was healthy, and perfect as could be until about two and one-half years of age, when a servant girl caught her by the arm, and tried to pull her up stairs. A physician was called, and pronounced it a bad sprain. After the usual bandaging, and carrying in a sling for two weeks, it seemed as well as ever. About three months afterwards, having eaten heartily of green Lima beans, pods, etc., in the garden, she was taken at night with violent spasms, purging and vomiting, followed by great prostration, emaciation, unconsciousness, and paralysis of said arm, and also of speech, that continued for three months. During this sickness she was almost continually in motion, even after getting up. Her voice was entirely gone, and the arm now affected was useless. Many different doctors and treatments were employed. The voice gradually returned, and the arm improved. At first the hand was strongly contracted and painful. The arm was carried behind her back, through shame, till about the thirteenth year, which produced a lateral

² Op. Functions Nervous Diseases.

³ Lancet, March 16, 1875.

⁴ Deutsch. Arch. für Klin. Med. p. 242, 1880.

⁵ New York Academy of Medicine (Neurol.), October 8, 1886.

curvature, for which a brace was worn eighteen months. All improvement has been from the shoulder towards the hand. Electricity seems to have done the most good."

Present Condition. — Her general health is of the best, since the foregoing. "The hand," as she calls it, is not at all painful: there is no movement at night, or unless her attention is called to it, or she is excited. A decided effort of the will has only the slightest effect upon its movements. At times it contracts powerfully enough to tear a glove: to open it, she must use her left hand, and forcibly extend the fingers to their utmost. When left alone, the contracted fingers will return to normal in from two to five minutes.

In most of the reported cases the movements have been most marked in the thumb and little finger. In her case the thumb and first finger are most affected. The first finger is often forcibly extended, while the others are as strongly contracted. The hand is of little use, as there is no telling when it will take hold or let go. At present she is under no treatment, and is impressed that it is slowly improving.

In all cases the most improvement has been from electricity; and, contrary to theory, the faradic current has proved the more useful. No cure has been reported; and, while the trouble is regarded as incurable, it has never been known to prove fatal.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.¹

ALBERT N. BLODGETT, M.D., SECRETARY.

DR. C. P. PENGRA presented

A CASE OF ATHETOSIS.²

DR. J. J. PUTNAM asked: Are the reflexes of the lower extremity altered?

DR. PENGRA: Not at all. There seems to have been no trouble with any part of the body except the arm and the vocal organs. The lima beans were regarded as a poison by her parents, but from her history she undoubtedly had an attack of gastro-enteritis.

DR. PUTNAM: Are the muscles of the right arm hypertrophied?

DR. PENGRA: There is no enlargement that I know. The muscles seem stronger. They are set and tense.

DR. HAMILTON OSGOOD: What is the condition of the hand in the night?

DR. PENGRA: Quiet. She has never had a contraction in the night. There was a time, a considerable time ago, when she had slight contractions, I believe, but at no time has she had contractions since she has known anything about it.

DR. PUTNAM: I would like to say only a few words about the case; it is an interesting one. I suppose that it is very difficult, almost impossible, to draw any sharp dividing line between these disorders of movement. Dr. Gowers wrote, so far as I know, the most satisfactory paper on the subject a few years ago, and showed how one could trace gradual degrees of difference in these cases through the whole scale

from the typical athetosis even, he thought, as far as the late rigidity of hemiplegia; but without going so far as that, it seems very certain that there is only a sliding scale between the typical cases of athetosis and what has been known under the name of post-hemiplegic chorea; the difference consisting partly in the character of the movements, and partly in the fact of the greater or less amount of paralysis associated with them.

I was rather surprised to hear the Doctor say that so few cases have been reported, for I should not say that it is very rare to find cases that are as typical as this case. I would not speak of this as an absolutely typical case, because, as a rule, the movements would not stop in the typical cases when the patient was holding the arm at rest with the hand supported with the other hand, as at present; and then the movements are usually much more varied in character, involving extension quite as much as flexion so that the fingers are thrown about in a worm-like action all the time, while here the flexion predominates, and the flexor spasm is certainly much more marked, I should say, than in typical cases of this disease. However, I do not see how it can come in any other category than that of one of the involuntary disorders of motion of that type.

DR. PENGRA: In regard to the number of cases, I referred merely to the number of cases recorded. I have no doubt that there are plenty of cases, as we are quite aware, in most any line of disease, that, while not being recorded, have existed. We must realize that only in 1871 the disease was recognized as such. From the literature that I can read — of course my experience has not been sufficient to warrant my statement — but, from what I can read I am inclined to think that athetosis is an organic disease. I think I so stated in my paper. The disease I do not think I stated as a typical one, from the peculiarity of the motion.

The definition that Hammond gives is "a disease characterized by an inability to control the fingers or toes, and a continual motion." And in his reports of the cases, and he is the father of the disease, you might say, so far as the diagnosis is concerned — in the reports of his own cases there has been such a marked remission that almost the first thing that I thought of in connection with the definition, was the superfluity of the word, "continual." During the greater part of the time that my patient was suffering from the trouble, and the paralysis, which seemed to have been the precursor of the disease, she was in constant motion that included a large portion of the body, I believe mostly on the right side, but the paralysis was limited to the right arm. The motions of the arm did include movements toward the back to such an extent that she finally put it on the back and left it there.

I do not think I referred to the case as being exactly typical; so far as I can see there is no typical athetosis.

My statement suggested as strongly as I could state from my knowledge of the cases, that it is an organic cerebral disease. The statement of Dreidenberg is the one statement that counteracts all others so far as it goes, to the effect that it may be idiopathic, but his own case does not sustain that, inasmuch as one of his cases were preceded by hydrocephalus and another case by epilepsy; and as to the

¹ Concluded from page 63.

² See page 80 of the Journal.

matter of the word "continued," it is certainly not right, because there have been no cases recorded where remissions have not occurred.

DR. C. F. FOLSOM: It seems to me, Mr. Chairman, that it is a very interesting case, and that we want to understand in regard to a good many points what we cannot make out to-night, before calling it clearly a case of athetosis. If it is athetosis it differs in a great many essential respects from what is called typical athetosis. It is a question, of course, how far movement of this sort can be considered as belonging to that group, and due to organic trouble. There doesn't seem to me any marked hypertrophy of the hand, and the movements seem very different from the movements of athetosis; the flexor muscles contract almost instantly, as soon as the resistance is taken away. It is quite possible that there may be a little difference in the knee-jerks. The whole group of cases is certainly a very interesting one. I suppose that nobody is satisfied in his own mind just what to call athetosis, and what not, but the fact of the hand being quiet during sleep, and perfectly quiet so long in the position that the patient has it now, seems to me to make it very unlike what is described as athetosis.

DR. PENGRA: Would the Doctor suggest some name for it?

DR. FOLSOM: As I say, I would not wish to express an opinion without having it under observation some time. It reminds me of a case that was in Dr. George B. Shattuck's ward in the City Hospital, which suggested athetosis. Strangely enough a case of real athetosis was in the ward at the same time. The former had these features of being quiescent during sleep with no hypertrophy of the muscles, and the contractions of the muscles were sudden and violent and quick, instead of slow and gradual, and there was the feature of quietude for a long time. It was finally thought to be a functional trouble, and in the course of time, by rest and cod-liver oil and tonic treatment, it almost entirely disappeared. It seems to me it is a difficult matter, sometimes, to make a diagnosis between the various forms of anomalous chorea and hysteria and athetosis.

DR. PENGRA: I would say that according to the best authorities that I can find on the subject of diagnosis—that is, in print—this is the essential feature, which I quote from Dreidenburg, "that there is no trembling in any position of the hand or body, that the muscles of the arm are well developed, and there is no scanning in speech; that the movements are uniform and slow and quiet, that the muscles contract and extend together, and are firm and tense."

DR. FOLSOM: He evidently has in mind, I think, disseminated sclerosis, in his diagnosis; in regard to the scanning of speech, etc.

DR. PENGRA: I don't pretend to be an authority on the subject at all. I brought it before the Society to hear some opinions beside my own. Experience, of course, would be a teacher that a young man could not get from books. In regard to the treatment of the true athetosis, there was one writer, in fact this same Dreidenburg, who stretched the median nerve; but he finally had one case where he stretched the nerve and the nerve remained stretched, and as in no previous case he got any result that lasted more than eight days, he finally gave that up, and resorted to electricity entirely.

DR. HAMILTON OSGOOD read a paper on

INVETERATE HEADACHE.

DR. WHITTIER: I heartily concur in all that Dr. Osgood has said with reference to the difficulty of dealing with the subject of inveterate headaches,—that it is quite as difficult as dealing with the disease itself. A difficulty which we all appreciate, with which all have had an experience more or less aggravating. The general practitioner, into whose care most cases of this disease come, early and late in life, generally concludes, from his reading and from his personal experience that but little can be done other than by palliative measures; that entered upon in puberty, the disease pursues in the great majority of cases a course more or less paroxysmal, of varying degrees in intensity and of frequency, until the grand climacteric; by which I wish to be understood as intimating that the disease is, by the influence of sex, in the proportion of five females to one male, and that the causative influence of sex, age, hereditary and temperament, exceed all other predisposing, in fact all other causes combined.

The difficulty of dealing with the subject of inveterate headache, so far as the literature of the subject is concerned, seems to me to be two-fold; first, in the diffusive character of the articles written by men in general practice, and secondly, in the technical character of the contributions made by neurologists.

Hughlings-Jackson, writes of a discharging lesion of the cerebral cortex in the sensory area. Elsewhere I find that the causative influence of headache is divided into two parts, "hemiparesis-sympathetica and hemiparesis-angio-paralytica," rather discouraging terms to the average student of general medicine, for whose instruction I may venture to assume that such writings were intended. We must, however, admit that a great advance has been made in the desirable direction of definition and of eliminating uncertain and undemonstrated causes of this most formidable malady.

Having had the customary and somewhat extended notification of an invitation to speak on this subject this evening, I quickly came to a realizing sense of the difficulties of the subject, and found it needful to apply to the subject the method which for many years I have applied, with results generally very satisfactory to myself, in examining any difficult subject; namely, a method of analysis and tabulation. I, therefore, have the pleasure of submitting for your examination,

A SYNOPTICAL TABULAR VIEW

arranged and grouped according to a system which has always been of the greatest assistance to me in fixing the essential elements of difficult subjects.

I offer this as my contribution to the topic under discussion.

DR. E. G. CUTLER said: I was much interested, Mr. President, in the first case that Dr. Osgood read. After he spoke to me about the case, in looking for some cases I found that I had nothing of my own, but I found in the library, in the last report of St. Bartholomew's Hospital a collection of fourteen cases not unlike those of Dr. Osgood. It is a paper written subsequent to another published several years ago, of cases in which was found a large increase in the uric acid in the urine, the chief symptom being that of headache. The history of these cases always showed

HEADACHE—A SYNOPTICAL VIEW.

LOCALITY DIVISION (DR. HUGHLINS-JACKSON)	{	Frontal headache (abdominal disorders)
	{	Vertical headache (cerebral disorders)
	{	Occipital headache (circulatory disorders)

PATHOLOGY OF "INVETERATE" HEADACHE.

Congestion	{ Active
	{ Passive
Cardiac hypertrophy	
Vaso-motor disturbances	
Abnormal conditions of blood	{ Hydræmia
	{ Defective arterialization
	{ Defective excretion
Meningitis	
Cerebritis	
Abscess	
Tumors	
Softening	
General plethora, or anemia	
Cardiac or pulmonary diseases	
Affections of	{ Stomach
	{ Liver
	{ Intestines
Renal and cutaneous diseases	
Fever and acute inflammations	
Acute and chronic malarial poisoning	
Gout and rheumatism	
Uterine disorders	
Hysteria	
Neurasthenia	
Syphilis	

FOR PRACTICAL PURPOSES THE ETIOLOGICAL ORDER MAY STAND AS FOLLOWS:—

Structural Headache (Intra-cranial disease)	{ Meningitis
	{ Abscess
	{ Cerebritis
Congestive	{ Tumors
	{ Cerebral hemorrhage
	{ General paralysis of the insane
Toxicæmic	{ Active hyperæmia
	{ Passive hyperæmia
	{ Altered conditions of blood
Nervous or sick headache	{ Alcohol, opium, carbonic oxide, lead, etc.
	{ Syphilis (periosis, etc.)
	{ Chronic malarial poisoning
Predisposing causes	{ Megrim
	{ Migraine
	{ Hemiparesis
Exciting causes	{ Hypertrophy left ventricle
	{ General plethora
	{ Mental and emotional disturbances
Sex, age	{ Catamenial irregularities
	{ Dyspnea
	{ Hepatic, intestinal or peripheral
Hereditary tendencies	{ General anemia
	{ Cardiac
	{ Renal
Nervous temperament	{ Pulmonary
	{ Renal disease
	{ Inflammations
Deficient tone	{ Defective arterialization
	{ Errors of refraction
	{ Anæmia
Exhaustion	{ Mental
	{ Physical
	{ Psychological disturbances
Mental	{ Impure air
	{ Bad hygiene
	{ Sexual excesses

the existence of gout or some such affection in some member of the family, and the headache usually was periodical, either lasting for a long time, or coming on at irregular intervals, perhaps of hours or days or weeks or months, and lasting for years.

The treatment which was found most successful, I believe, was that of a diet in which there was a great diminution in the nitrogenous matter, a diet largely liquid-farinae; and also the treatment by hydrochloric acid. It was found by experiments which have apparently not been disproved, that under the treatment with hydrochloric acid the amount of uric acid diminished, and with alkalis it increased, and it was found that at the same time this symptom of headache would be done away with more effectually than by any other means. This article is a very interesting one, and I have not seen that it has been contradicted.

Also, an interesting point in this first case that Dr. Osgood spoke of, was the matter of the tooth. I not do remember whether he said that it was a molar tooth that was affected. In looking over the literature of the subject I think it is claimed that those headaches which depend on the teeth are apt to be in the back part of the head; I think, in his "Disorders of Nutrition and Digestion," Lauder Brunton speaks of several cases where caries of the molar teeth either in the upper jaw or lower jaw was accompanied by a headache in a certain region. I think in the upper jaw he claims that the temporal region and the occipital region are the two seats of the pain, and the first thing that he does, when a man has a headache there, is to examine his teeth, or to send him to the dentist.

This regional method of diagnosis in headache and the treatment that is laid down for it I have had little experience in, so that I cannot judge as to how good it is. In my practice I have had very little of the sort. It is only in the Hospital and Dispensary that I have seen very much of the kind, and it is rather difficult to locate the headache there, I find, because you cannot always get the patients to locate it in the same place. I have, however, seen headaches which depended upon some disease of the teeth, which having been relieved, would subsequently disappear; or where there was tenderness which would be localized in the region of the trifacial, where it has seemed to me that gelsemium has worked well. I have also seen cases where some trouble in the nose was apparently the cause of it, and when they have been sent to the throat-room in the Hospital the pain has disappeared without further treatment. I remember also a case of frontal headache, such as Lauder Brunton says is relieved by acids; at first it seemed to illustrate that, but subsequent examination seemed to show that it was not so.

Dr. PUTNAM: Dr. Osgood's paper calls to one's mind a large number of very interesting points, and of course it would be impossible to do anything like discuss them all. That there is such a thing as gouty headache in the sense that the word "gouty" is commonly used in this country, as indicating in the most general way a disorder of the assimilation and nutrition, I suppose there can be little doubt. That is to say, that this is one of the many neurotic symptoms which are met with under these circumstances in what is called lithæmia, which is the nearest approach to gout which we have except in special cases. I

think it is difficult however, to determine that the lithæmic condition acts as a cause of the nervous symptoms. In the regard to the relation of the heart to headache, I suppose that we might do a good deal more than many of us do in the therapeutics of general diseases by stimulating the heart; although I think it is very hard to say many times whether the heart-sounds are a little weak or not, and that unless one examines with great care and many times, and both before and after treatment, it would be very easy to attribute to the cardiac remedy a result which really belonged to something else.

So far as the occipital headaches are concerned, I feel pretty sure with regard to some varieties of them, that they do not arise from the heart. I have seen a large number of these headaches, as every one must have who has to do with nervous diseases, because they seem to be extremely common, in connection, largely, with over-work, in persons otherwise in good health. I have, indeed, under my care at present, a lady who suffers greatly from this headache, which continues in spite of an improvement in her general health, and she has heart disease. On the other hand, I have treated for a long time a gentleman who prides himself on his vigor and his muscle, and he has had this headache for a very long time also, though not in a severe form; but in his case it has disappeared, apparently without any one being able to say why. At one time he thought that massage helped him, and at another time electricity. He has never presented any signs of weakness of the heart. Of course, I do not mean to imply that Dr. Osgood claims that all cases are due to that cause.

Another cause of occipital headache which should be borne in mind, is one which Dr. Seguin called attention to some time ago, and that is uræmia. I have recently had a patient, a lady with chronic Bright's disease, in whose case this symptom has been present. In regard to the flushing of the ears as occurring in these headaches, as a sign of cardiac disease, I must say that I cannot agree with Dr. Osgood. I think it is well known that flushing or paleness of ears or face is a very common one in migraine. Writers have been divided as to how much influence is to be attributed to alterations in the vascular supply of sensitive membranes as a cause of the pain, or whether the pain may be due to spasm or dilatation of the vessel itself; and for my part I am of the opinion that it is only a concomitant symptom as a rule; it is common to see cases of typical migraine without any such apparent changes and again, vascular changes occur so often in other neuralgias, that it seems to me on the whole that the fairest way of looking at it is as a concomitant symptom, and not as a rule, a cause of the pain.

And that leads me to say that the patient whom Dr. Osgood first spoke of, is one whose case I have known of for a number of years. I have cross-questioned her with great care in regard to the congestion of the ears, and she has assured me that although the flushing of the ears is almost always associated with the headache, the two conditions are not entirely parallel, and that occasionally, sometimes in the course of a long headache the pain may be on one side, and the flushing on the other. As regards the gouty tendency of this patient, it is a very interesting question, and I did my best, as I thought at the time, to treat her from that point of view, a year ago.

It is an interesting and important matter, and I am glad Dr. Osgood brought it up.

I advised her to give up sugar and starch. She did that, and got better. She took, also iodide of potash, and lithia for a considerable time. Then, after a time that diet failed, and we tried an opposite course, giving up the meat, and confining herself to a non-nitrogenous diet, and for a time that also worked very well, so that I became quite convinced, especially as I had seen something similar in another patient with migraine, about the same time, that it was the change in treatment, and not the specific diet that had produced the effect.

In a large number of these cases almost any change of the conditions under which the patient is living will be of service, and I will say in regard to this patient, that she was very free from headache at one time, as a result of a visit to another climate, but a second visit to the same place did no good.

DR. MYLES STANDISH: I want to refer to the headaches caused by errors of refraction, as we have heard very little about them here this evening. A very large proportion of the headaches in young children, children going to school, are due to errors of refraction, and are cured by correction of that error. In older persons very often error of refraction is the cause. I have seen very striking, almost marvellous cases. I remember one young lady who had been an invalid for a number of years, never going out, on account of her constant headache; a pair of glasses enabled her to go where she pleased, to go to picture-galleries, and a year later she came back, and said she had never had a headache since. It is not a single case, but we see it very often. I see many such cases every year. I perhaps have had this thing forced upon me from my own experience in the matter. From my boyhood I have had very severe headaches every two or three weeks. When I came to the medical school I took everything that I could find in the form of drug, without any result whatever; but correction of my error of refraction has reduced my headaches. I still have them occasionally, perhaps once in two or three months, where as formerly I had them every two or three weeks; and I have gone a year with only one or two headaches. When a headache lasts all the time, of course it is not so likely to be due to error of refraction as to some other cause, but when it follows close application of the eyes, especially near work, I think error of refraction should always be ruled out before going any further.

DR. PUTNAM: I simply want to say that I most sincerely agree with what Dr. Standish has said, and I did not speak of it because I did not think of it at the moment, and this lady had been to Dr. Wadsworth to have the refraction tested.

DR. FOLSON: I wish to speak of a case in connection with Dr. Putnam's allusion to the analogy between these cases and epilepsy. Of course, a sensory discharge may take the place of a motor discharge. I was reminded of a patient who was a type of health in every other respect, who had a very persistent headache for a number of years. She had her eyes examined for astigmatism by a number of ophthalmic surgeons and almost every remedy tried, until it occurred to me that it might be similar to epilepsy in type. The continuous use of bromide, as it is used in epilepsy, relieved her entirely. I wish that Dr. Standish would speak of the difficulty of detecting

this astigmatism, and the very minute amount, requiring most careful examination, which may cause headache, an amount that would be overlooked by the ordinary examination. It seems to me it is a matter which physicians in general practice should know, and it is a point which has embarrassed me a number of times. As an interesting point in regard to that, a person may have considerable amount of astigmatism, and yet have no headache except under certain physiological conditions. That is to say, if in perfect health he has no headache at all; he can read and write, and do it late at night; but as soon as he begins to run down, a very moderate amount of reading and writing will cause headaches. I have one patient who, when he finds that he needs glasses, goes on a vacation.

DR. STANDISH: It seems to me very rational that when the man's condition gets run down, his ciliary muscle, which is very delicate, might be affected.

DR. KNAPP: I agree with Dr. Standish on the importance and dangers of refractive headaches. In every case of severe persistent headache that I see I try to get a thorough examination of the eyes for any error of refraction. I may say that it is about the only form of reflex headache that I have been led to take very seriously. I have looked for the other forms of headache which are said to be due to displaced uteri, cerumen, and this, that and the other, and as a rule I have not been able to find them. But I do find them in errors of refraction.

DR. OSGOOD said he did not understand the rationale of the hydrochloric acid treatment of a uric acid condition, and the proof that alkalies were beneficial in that condition was that his patient steadily improved under the use of them.

In reply to Dr. Putnam, he said that the color of the ear in this case could not be merely a "concomitant" for, that it held a direct relation with the state of the heart, was shown by the fact that during attacks of pain the ear became less and less livid in strict coincidence with an actual increase of power in the first sound of the heart. Dr. Putnam virtually admits that in his cases of occipital headache, fatigue or debility always coexisted. Inasmuch, then, as the heart never rests, is always at work, and has less repose even than the lungs, it must partake of the general debility or fatigue of the body, and consequently has less than its normal power to send the blood through such sudden arterial curves as exist in the vertebral arteries.

In regard to the eyes of the patients he had cited, Dr. Osgood said that in his paper he had remarked that all possible care was given to the eyes of one of them. He had also made himself certain that everything had already been done to assure the proper condition of the eyes of the other two patients. He thought there would be no disagreement in relation to his assertion that inveterate headache was one of the most troublesome and discouraging ailments with which the physician has to deal.

AMERICAN OTOLOGICAL SOCIETY.

TWENTY-FIRST ANNUAL Meeting, held at Pequot House, New London, Conn., July 17, 1888.

MORNING SESSION.

The Society was called to order by the President, Dr. J. S. PROUT, Brooklyn, who alluded in his opening address to that loss sustained by the Society in the

death of Dr. C. R. Agnew of New York, and suggested that action be taken. On motion, Dr. Gorham Bacon and Dr. W. H. Carmalt were appointed to prepare an appropriate minute on the subject.

Drs. Green, Theobald and Carmalt were appointed as the Business Committee.

Dr. E. WILLIAMS, of Cincinnati, on account of failing health, presented his resignation. This was accepted and on motion of Dr. Carmalt the by-laws were suspended, and Dr. E. Williams were elected an honorary member of the Society.

Dr. W. H. CARMALT presented the report of the Committee of Conference on the Congress of American Physicians and Surgeons. The report was accepted, and it was decided that when the Society adjourns, it adjourns to meet at the Arlington Hotel, Washington, D. C., September 18th, 1888, at 11 A.M.

On motion of Dr. GREEN, it was decided that the meeting should be strictly for scientific matters, and should not be regarded as a business meeting; that is, should not take the place of the annual meeting.

The reading of papers was then taken up.

Two papers by Dr. S. SEXTON, of New York, entitled

PERIOTITIS EXTERNA OF THE MASTOID,
and

SOME OF THE INDICATIONS FOR EXCISION OF
THE DRUM-HEAD AND MALLEUS,

were read by title.

A CASE OF AURAL VERTIGO (MENIERE'S DISEASE),
RELIEVED BY EXCISION OF THE MEMBRANE TYMPANI AND MALLEUS.

by Dr. C. H. BURNETT of Philadelphia,

The patient was a young, unmarried woman, thirty-seven years of age, who six years previously had been under treatment for chronic naso-pharyngeal catarrh, and chronic catarrh of the left middle ear, accompanied with hardness of hearing, tinnitus aurium, and a sense of fulness in the affected organ. Treatment of the catarrhal disease of the ear produced no benefit. After the lapse of six years, the symptoms already named grew worse, and there was superadded marked aural vertigo. The membrana tympani in the line of the malleus handle was found adherent to the promontory, and the consequent retraction of the entire chain of bones was held to be the cause of the aural vertigo and the sense of fulness and of the tinnitus.

The operation of excision of the membrana tympani and the malleus was performed under ether, May 21st last, with entire and immediate relief to the aural vertigo (which before had often been sufficient to cause the patient to hold to a lamp-post for support) and to the sense of pressure and tinnitus, which good result has been maintained to the present time. The hearing was practically unaffected by the operation. The incus was detached from the stapes but could not be removed as it slipped into the attic and grappling for it is not advisable on account of the risk of irritation. Its removal, furthermore, would have no effect in the result of the operation.

DISCUSSION.

Dr. J. O. TANSLEY, New York. I have now under my observation a girl on whom this operation was performed some eighteen months ago. When she came to me the whole internal canal was filled with polypi

and she presented serious brain symptoms. I took out all the polypi and found a portion of the drum remaining and above a localized necrosis into which a probe passed at least one-fourth of an inch. The patient has been under observation every day for two months, the local necrosis is healed and she is doing well. There are still some brain symptoms. It seems to me that this is a very serious operation and I should hesitate sometime before performing it on account of the results that might occur. In this case the result seems directly traceable to the operation.

Dr. C. H. BURNETT, Philadelphia. My patient did not remain in Philadelphia but I was informed that two or three weeks after I saw her a discharge appeared. I think that there is still a slight discharge but the membrane is forming. In another case, a slight discharge appeared soon after the operation but ceased after the membrane had re-formed. The case reported by the last speaker was not one of the class to which I have alluded. The operation was evidently not properly performed if there remained a portion of the membrane and there was necrosis. I have not found this a dangerous operation. No one has reported bad results from this operation properly performed.

Dr. CHAS. J. KIPP, Newark. This operation has been performed a number of times by a foreign operator for the relief of tinnitus and vertigo, but he has given it up because it did not relieve these symptoms satisfactorily. He, however, did not have any bad results.

Dr. S. SEXTON, New York. I have performed this operation between fifty and one hundred times in the past few years, and have obtained decided benefit in a number of cases of tinnitus and other subjective symptoms. I have known of no case in which there was aggravation. In many cases where there has been no marked tinnitus the distressing sense of pressure has been overcome. The tinnitus is not always relieved by the operation.

Dr. BURNETT has referred to the closure of the drum-head. My principal endeavor has been to avoid re-formation of the drum-membrane. In a number of cases where this occurs the good hearing is lost. I have prevented this by the application of a solution of salicylic acid in ether to the margin of the closing membrane. This has succeeded even where the membrane has closed down to a minute opening. In regard to the purulent cases to which allusion has been made, I have operated on a number, and on the whole they are the more satisfactory cases.

Dr. B. ALEX. RANDALL, Philadelphia, was invited to take part in the discussion of the Society. He said: It may be that in Dr. Tansley's case the operation was done for the necrosis. The presence of polypi of the size referred indicates too great neglect, and the results are more probably attributable to this neglect than to the operation.

Dr. SEXTON, New York, then exhibited a new portable battery for the storage of electro-motor force, and a new head-lantern for the employment of electric light in surgery.

The battery was made at his suggestion by the River & Rail Electric Light Co., of New York. It consists of three cells, and will light a six-candle electric light. The lantern is a modification of that of Trouve, but much lighter, and having a non-conducting base. Such a light is almost necessary in operations on the

ear where ether is used as an anæsthetic. The battery will work continuously for twenty-four hours, and will retain its power for several weeks or months. It may be charged by a dynamo or by twelve gravity cells. When not in use, the storage battery may be kept in connection with the gravity cells.

REFLEX INFLUENCES IN THE PRODUCTION OF NASO-PHARYNGEAL CATARRH,

by DR. A. H. BUCK, New York.

The object of the paper was to call attention to those comparatively remote exciting causes of naso-pharyngeal catarrh, which act, so far as it is possible to explain their mechanism, through the intervention of the vaso-motor fibres of the sympathetic nerve. We know little of the direct exciting causes of naso-pharyngeal catarrh. The most common indirect cause is chilling of the surface of the body. According to certain authorities, affections of the teeth should rank next in order of frequency. The author had, however, seen very few cases in which dental disturbances played the part of a promoter of naso-pharyngeal catarrh, or of aural disturbances. Some of those indirect causes which he had observed were then enumerated. Irritation of the gastro-intestinal canal is, in not a few instances, a strong exciting cause of naso-pharyngeal catarrh and of all the aural disturbances growing out of such a catarrh. A male, forty-five years of age, had for years been more or less a sufferer from naso-pharyngeal catarrh, with tinnitus aurium, and slight impairment of hearing, and more recently had begun to suffer from feeble digestion. He noticed that after indulgence in certain articles, there would be abdominal discomfort, and at the same time marked exacerbation of the naso-pharyngeal catarrh. So long as the offending substance was in the stomach there was only a slight sense of discomfort, but in the course of three or four hours, a slightly painful peristaltic movement would set up in the bowels, and simultaneously the secretion from the vault of the pharynx would become unpleasantly active, and the tinnitus would increase. This condition would last for an hour, and then the naso-pharyngeal catarrh would return to its usual state. These attacks were accompanied with the escape of large quantities of gas by eructation. In many patients, usually men, between forty and sixty years of age, where we have reason to believe that the gastro-intestinal tract is habitually in a state of greater or less irritation, we find the faucial mucous membrane red and swollen. In these cases the disease which claims chief attention is the gastro-intestinal affection.

Reflex influences involving the vault of the pharynx and the ear may emanate from more distant sources. A lady of forty years of age complained of distressing tinnitus involving both ears. There had been mild naso-pharyngeal catarrh from time to time for many years. At times she was almost entirely free from tinnitus. I always succeeded in giving prompt relief by applying a moderately strong solution of silver nitrate with a mop of absorbent cotton to the vault of the pharynx. After a time this failed to give relief. It was then learned that for many years, she had suffered with pain in the pelvic regions and back, and at this particular time she was suffering in a more marked degree. A specialist was then consulted, and it was found that there was retroversion of the uterus, and subacute parametritis. These condi-

tions were removed, and the tinnitus disappeared without treatment to the vault of the pharynx.

The author states that he had spoken of these as indirect causes, that is, as factors competent to aggravate a preëxisting, but perhaps latent catarrhal disease, but he saw no reason why these reflex influences may not in certain cases play the part of direct exciting causes. He considered it impossible to demonstrate the correctness of this belief, and therefore preferred to adopt the view which assigns to them a less independent rôle.

DISCUSSION.

DR. J. G. TANSLEY, New York. I meet with many cases of naso-pharyngeal catarrh in young girls, fifteen to twenty years of age, who are decidedly anemic and chlorotic, and who suffer with constipation; and I have found that this was the cause of the catarrhal symptoms.

DR. S. O. RISLEY, Philadelphia. It is pretty generally admitted that nasal and pharyngeal diseases are especially liable to occur in persons of a gouty diathesis. Naso-pharyngeal disease is one of the most uniform manifestations of lithæmia; from the symptoms detailed in regard to the first case of Dr. Buck, I should suggest that the digestive disturbances was probably associated with a lithæmic condition.

DR. C. H. BURNETT, Philadelphia. I have seen a number of cases without deafness, due entirely to dyspepsia. The use of nitrate of silver has been referred to. While this may be of service in other locations, I think that it is the worst application that can be made to the nose or the naso-pharynx. Its use will be followed sooner or later by sclerosis and atrophy. It will apparently cure a hypertrophic catarrh, but the case comes to the rhinologist later with a marked atrophic process in the mucous membrane. I have entirely abandoned the use of nitrate of silver in affections of the nares.

DR. S. SEXTON, New York. I have seen many cases in which irritation in the mouth has been the cause of naso-pharyngeal catarrh and aural symptoms. A lady was brought to me with intense pain in the ear and the head. There was nothing in the condition of the ear to account for these symptoms. Examination of the mouth showed that she was wearing a plate to bring the teeth closer together. The gum was intensely inflamed although the patient complained of no discomfort. The removal of the plate caused a disappearance of the pain in the ear and head. I have seen many such cases.

DR. J. O. TANSLEY, New York. I have seen many cases in which irritation of the teeth caused aural symptoms. I agree with Dr. Burnett that nitrate of silver should not be used in the nasal cavity. I have not made such an application for a number of years. There is in catarrh an increased thickening of the basement membrane; this tends to contraction, and the tendency to contraction is increased by the use of nitrate of silver. I employ such agents as induce an exosmosis.

DR. J. F. NOYES, Detroit. This paper brings up the fact that it is important that in our special practice we should consider general practice. I have always recognized these so-called reflex causes, and have treated cases by searching out these causes. A remarkable case came under my notice of a lady who after confinement developed naso-pharyngeal catarrh.

There was profuse secretion; the trouble continued for a year in spite of treatment. Finally she passed into the hands of a gynecologist and the cause was then discovered, and treatment of the uterine disease cured the naso-pharyngeal disease.

DR. SAMUEL THEOBALD, Baltimore. I think that where atrophy follows hypertrophic catarrh it is the result, not of the application of nitrate of silver but of the continuance of the catarrh. I question whether a solution of nitrate of silver, ten to fifteen grains to the ounce, will produce sloughing. I regard this agent as a valuable application in disease of the nasal membrane.

DR. CHAS. J. KIPP, Newark. I agree with Dr. Theobald as to the value of nitrate of silver. I rarely use it in a stronger solution than twenty grains to the ounce and neutralize it afterwards by salt water.

DR. HENRY D. NOYES, New York. I have frequently noticed the connection between the lithæmic condition and certain affections not only of the naso-pharynx but also of the external auditory canal. There are certain eczematous conditions associated with the gummy diathesis.

DR. F. P. CAPRON, Providence. I have seen a number of cases of so-called hay-fever in which the premonitory symptoms were those of indigestion; for two or three weeks before the time of the onset of the regular attack, the patient would complain of digestive disturbance.

(To be continued.)

AMERICAN OPHTHALMOLOGICAL SOCIETY.

TWENTY-FOURTH Annual Meeting, held at the Pequot House, New London, Conn., July 18 and 19, 1888.

WEDNESDAY, FIRST DAY. MORNING SESSION.

The Society was called to order by the PRESIDENT, DR. W. F. NORRIS, of Philadelphia. The deaths of DR. C. R. AGNEW, DR. E. G. LORING and DR. JOSEPH AUB, were reported.

DR. H. P. NOYES, New York, read a memorial of the late Dr. C. R. Agnew.

DRS. W. H. CASWELL and C. S. BULL were appointed a committee to preface an appropriate minute in regard to the death of Dr. E. G. Loring, and Dr. Charles J. Kipp was appointed to preface a similar minute in regard to the death of Dr. Joseph Aub.

The members of the American Otolological Society were invited to take seats with the Society. The following gentlemen were invited to take part in the discussion, DR. KÖLER (Vienna), DR. SKINNER and DR. NODINE.

A CONTRIBUTION TO THE TREATMENT OF MEMBRANOUS OPACITIES IN THE VITREOUS,

by DR. C. S. BULL, New York.

These opacities in the form of membranes or shreds are rarely freely movable, and usually resist internal treatment. Operation by incision with a needle was first performed by Von Graefe. In the experience of the writer the operation had been found useful. Some opacities as a result of hæmorrhage or inflammation of the choroid sometimes respond to internal remedies, but as a rule these failed. By incision of the membrane a direct improvement of vision may be obtained and the process of absorption may be stimulated.

Posterior opacities are more easily reached, with less danger to the lens and with more favorable results, than in the case of anterior opacities. The author has done this operation in seventeen cases of chronic membranous deposits in the vitreous. In some cases the ordinary decision needle was used; in others a broader needle and in a few a slender cataract knife. Cocaine was employed in all cases. The point selected by preference for the introduction of the needle was just in front of the equator of the eye and below the insertion of the external rectus muscle. There seems in this operation to be no danger of loss of vitreous through the small opening, nor is there danger of hæmorrhage. The puncture should be posterior to the ciliary process and pressure with the forceps should be avoided. Little or no reaction follows the operation as a rule. A protective bandage is required only a few days. Antiseptics were employed in all cases.

The details of the seventeen operations on fifteen patients were given. Fourteen showed decided improvement in vision. Three were failures. There was no loss of vision from the operation in any case. The operation is appropriate in certain cases, but it is wise to wait until all inflammatory symptoms have subsided before attempting any operative procedure. The eye should be absolutely free from all irritation before surgical interference is attempted.

DISCUSSION.

DR. W. F. MITTENDORF, New York. I think that vascularity of the vitreous membrane should always speak against operations of this kind. Vascularity even if all inflammatory signs have subsided, points to a fatal prognosis.

A CASE OF PULSATING EXOPHTHALMUS CURED BY LIGATION OF THE COMMON CAROTID,

by DR. F. BULLER, Montreal.

Pulsating exophthalmus occurring spontaneously or as a result of traumatism is rarely met with. The pathology is so well understood that little remains to be done in this direction at the present time. In the matter of treatment, there is no rule so firmly established but that much must be left to the judgment and discretion of the surgeon.

The author had seen four cases of this affection. In the first the condition followed a blow upon the head. Some months after the appearance of the pulsating exophthalmos, ligation of the carotid was performed, but the patient died in the course of a few weeks from repeated attacks of epistaxis.

The second case has already been reported.

In the third case the affection followed a blow on the brow from a piece of iron. The patient was seized with severe epistaxis and died in a few minutes. There was found a depressed fracture of frontal bone with a fissure extending across the orbital roof and body of the sphenoid bone directly beneath the cavernous sinus. As a result of caries of the bone there was a direct communication between the nasal cavity and the internal carotid artery.

The fourth case, the subject of the paper, came under observation May 24, 1888. A young man aged twenty-eight, fell a distance of twenty feet, striking the right side of head, rendering him unconscious for twenty-four hours. After the swelling had subsided the patient noticed diplopia, one image being higher and less distinct than the other. There was also a

loud beating sound in the right ear. Two weeks before coming under observation, prominence of the eye was noticed. There was still diplopia, the higher image moving up and down with each heart-beat. Four days before coming under notice, the pain became intense. On examination there was at the inner extremity of the right brow a swelling which imparted a distinct thrill to the finger. There was also a harsh bruit. Pressure over the common carotid diminished the intensity of the thrill and lessened the pulsation.

It was decided to ligate the common carotid in the upper part of its course, and this was done May 25th, two ligatures being applied and the vessel divided between them. The immediate effect was softening of the swelling, partial reposition of the eye-ball, great diminution in the pulsation and disappearance of the bruit. The patient made a good recovery and left the hospital with very little prominence of the ball. $V = \frac{20}{20}$: movements normal.

PULSATING EXOPHTHALMUS,

by DR. CHARLES J. KIPP, Newark.

A lady, seventy-six years of age, presented herself with the history that shortly after striking the head in a fall she noticed noise in both ears, followed by protrusion of both eye-balls, the right $\frac{1}{16}$ inch; the left $\frac{1}{16}$ inch. There was no marked pulsation, but there was a thrill and a bruit could be heard over the anterior half of the head. This could be arrested by compression of the right carotid and partially so by compression of the left carotid. In view of the age of the patient, no radical measures were recommended, but it was suggested that pressure be made on the right carotid as often as convenient. Iodide of potassium was also given. Three months later the patient stated that the noise had suddenly disappeared. This was followed by disappearance of the exophthalmus first in the left eye and subsequently in the right. The external appearance of the eyes are now normal. There is, however, a marked pulsation of the right subclavian artery, but no aneurism can be discovered.

DISCUSSION.

DR. S. D. RISLEY, Philadelphia. I would call attention of the Society to the fact that Dr. Harlan reported a case of this kind cured by compression, and that I also reported a case in which compression of the vessel for a short time was followed by disappearance of the symptoms and subsidence of the exophthalmus.

AN ANALYSIS OF 576 CASES OF THE REFRACTION OF HEALTHY HUMAN CORNEÆ, EXAMINED WITH THE OPHTHALMOMETER OF JAVAL AND SCHIOTZ,

by DR. SWAN M. BURNETT, Washington.

These 576 corneæ belonged to 301 persons examined within a little over a year by Dr. Burnett. Pathological states of the cornea were excluded for consideration at another time. The corneal refraction was found to be the same in both eyes to within 0.25 D in 110 persons. The horizontal meridian (to within 5°) was the least refractive (astigmatism according to the rule) in 420 eyes. The vertical meridian was the least refractive (astigmatism against the rule) in 20 eyes. In 88 eyes the meridians were oblique. In 58 eyes, the difference in the refraction of the two meridians was less than .25 D. In 101 eyes there was *emmetropia*. The largest number has a corneal refraction

of from 44 D. to 45 D.; the next largest from 43 D. to 44 D. The strongest corneal refraction was 47 D., the weakest 39 D. In 55 eyes, there was *simple myopia*. The strongest refraction in the weakest meridian was 47.25 D.; the weakest 39 D. The corneal refraction did not in any considerable number of cases bear any close relation to the degree of the myopia. *Simple hypermetropia* was present in 59 eyes. Weakest refraction in the weakest meridian was 40.5 D.; the strongest 46 D. As in myopia, the corneal refraction was no indication as to the degree of general hypermetropia, *myopic astigmatism* was found in 140 eyes. In 4 eyes, the general astigmatism was greater and in 11 it was less than the corneal. In 14 eyes, the difference in the axes of the corneal membrane and that of the prescribed glasses was greater than 5°. *Hypermetropic astigmatism* was present in 96 eyes. In 4 eyes, the corneal astigmatism was greater and in 2 eyes it was less than the general. The axes corresponded in all but 9 eyes. *Compound myopic astigmatism* existed in 63 eyes. In all but 7 eyes the corneal and general astigmatism corresponded and in 44 eyes the axes corresponded. *Compound hypermetropic astigmatism* was found in 55 eyes. In 31 corneal and general astigmatic meridians corresponded. The corneal and general astigmatism was the same in all but 4 eyes, *mixed astigmatism* was present in 8 eyes. In 4 the corneal and general astigmatism was the same. In 2 the corneal was less and in 1 greater than the general. The corneal and general astigmatic meridians were the same in 5 eyes.

In 42 eyes the general astigmatism was against the rule, while in only 13 of these eyes was the corneal astigmatism against the rule. From examinations under a mydriatic the author felt himself warranted in thinking that many cases of lenticular astigmatism are due to an oblique position of the lens.

Corneal astigmatism is, with very few exceptions, according to the rule (vertical meridian, the stronger). From a study of these statistics the author feels warranted in concluding that while the corneal refraction gives no indication of the general refraction of the eye, its astigmatism in the vast majority of cases, expresses the general astigmatism both as to degree and direction of its axis, and considers, therefore, the instrument of Javal and Schiotz one of, if not the most important instrumental means for the diagnosis of the anomaly. He does not think astigmatism more productive of progressive myopia than other forms of ametropia.

DISCUSSION.

DR. H. D. NOYES, New York. I have used the ophthalmometer of Javal and Schiotz with great satisfaction. In the immense majority of cases the evidences of the ophthalmometer without the use of atropine have corresponded with the evidences of the trial case. The amount of astigmatism and in a general way the axis of the astigmatism is obtained. The use of this instrument has led me to believe that mixed astigmatism is more common than we usually imagine. I have also noted the influence of the eyelids in altering the curvature of the cornea. I have also satisfied myself that the tension of the eye-muscle modifies the curvature of the cornea. I have also noticed in some cases a pulsation of the corneal reflex due to the fact that the cornea was so thin that the

circulation of the eye impressed itself upon it. This I have seen particularly in conical cornea. The use of this instrument does away to a large extent with the necessity for the employment of atropine.

DR. SAMUEL THEOBALD, Baltimore. I infer that the author thinks that when a midriatic is employed, the lenticular astigmatism is done away with. My experience leads me to believe that the asymmetrical condition in the lens, does not at once disappear on paralysis of the ciliary muscle. I think that the discrepancy between the total and general astigmatism may often be accounted for by this persistent asymmetrical condition of the lens. This condition gradually disappears after suitable glasses are worn.

DR. B. ALEX RANDALL, Philadelphia. I cannot agree with the author that simple astigmatism is so common and predominates over other forms. Taking the records of the Hospital of the University of Pennsylvania for the last ten years, I find 4,000 refraction cases determined almost without exception under a midriatic. Compound hypermetropic astigmatism constituted about 40%; compound myopic astigmatism constituted 30%; simple myopia and hypermetropia about 8% and 12% respectively; mixed astigmatism only about 1 or 2%; compound astigmatism constituted at least 70% of the total number of cases.

PROGRESSIVE HYPERMETROPIC ASTIGMATISM,

was the title of a paper read by DR. J. B. EMERSON, of New York.

DR. EDWARD JACKSON, Philadelphia, exhibited a new form of Cataract Knife. It was designed to combine the advantages of the Graefe and Beer knives. The point, resembling that of the Graefe knife, allowed the puncture and counter-puncture to be made in the same way as with the Graefe knife; while the rest of the blade having the shape of Beer's knife enabled one to complete the incision as with that instrument. With it the puncture and counter-puncture are completely under control, the flap is completed at a single thrust, the aqueous is not lost until the incision is nearly finished and the counter-pressure by the back of the knife assists in steadying the eye.

DR. J. O. TANSLEY exhibited the following instruments: An improved Lachrymal Syringe, in which the nozzle ends in a closed bulb, the opening being on the sides of the tube; a Clamp to prevent the passage of atropine solutions through the lachrymal duct into the nose in cases where the free use of atropine is called for; an improved Lachrymal Probe, and improved Style.

DR. SAMUEL THEOBALD exhibited Probes made of aluminium.

CEDEMA OF THE CHOROID AND RETINA,

by DR. EDWARD JOHNSON, Philadelphia.

The author reported the case of a young man struck in the eye with a marble or small stone causing a bruise of the eye-ball. The ophthalmoscope showed localized swellings of the choroid and retina, at the posterior pole of the eye; the choroidal spots having the usual grouping of ruptures of the choroid in that region. These spots disappeared in about a week. There was also at first some 0.75 D. myopia astigmatism which gradually diminished, and in three weeks entirely disappeared, leaving the sight perfect.

SYMPTOMATIC MYOPIA,

by DR. W. F. MITTENDORF, of New York.

But little attention has been called to myopia as a symptom of various affections of the eye. Three forms of myopia may be spoken of, axillary, refractive, and symptomatic. The latter form may be caused by traumatism, but more commonly by diseased conditions. It may be produced by displacement of the lens forward. More frequently it is due to swelling of the lens accompanying beginning cataract. This is sometimes relieved by the use of concave glasses; very strong glasses being occasionally required. Plastic exudations may also cause myopia, but these usually so interfere with vision that it is impossible to demonstrate the existence of myopia. Glaucoma, serous choroiditis and iritis are frequently accompanied with myopia as a symptom. A number of illustrative cases were cited. In these cases the myopia is not permanent but as the disease disappears, the myopia passes away, leaving the refractive condition of the eye the same as before the attack.

DISCUSSION.

DR. J. O. TANSLEY, New York. Some years ago, I reported a case of localized exudative choroiditis just beneath the macula, with myopia. The myopia gradually increased as the attack reached its height and as the inflammation subsided, the myopia passed away.

DR. CARL KÖLER, Vienna. I think that in these cases of myopia in iritis, the condition may be due to the irritation of the ciliary muscle. There is hyperæmia of the ciliary body, and as the irides are contracted, it is to be supposed that the ciliary muscle is also contracted. Although atropine may be used there is not full dilatation of the irides. It is, therefore, reasonable to suppose that the myopia is a result of spastic contraction due to inflammation.

DR. S. D. RISLEY, Philadelphia. In a few instances it has seemed to me that in these cases of iritis and choroiditis the myopia was due to the dread of light and the cramp of the lids.

DR. JOHN GREEN, St. Louis. In two attacks of iritis of which I was myself the subject, I carefully studied this myopia. In my case the eyes were completely under the influence of atropia. The pupils were dilated and the ciliary muscles paralyzed.

Adjourned until 8 P. M.

(To be continued.)

—The annual meeting of the Rhode Island Medical-Legal Society was held July 19, 1888. The following officers were elected: *President*, Dr. G. D. Wilcox; *Vice-President*, Dr. J. H. Morgan; *Secretary and Treasurer*, Dr. F. B. Fuller. A paper entitled "Belgium and her Insane Institutions," was read before the Society, by Clark Bell, Esq., of New York.

—The *St. Louis Medical Journal* is also among the prophets. Among its aphoristic maxims are the following: The physician who values his time and advice is the man who is appreciated. He who sells himself for nothing generally gets all he is worth. He who goes for half-price, when patients are able to pay a reasonable fee, goes for more than he would bring on the market. A community never values a physician higher than he values himself. He who works for love may gain the reputation of a good Samaritan, but good Samaritans are not all good doctors.

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THURSDAY, JULY 26, 1888.

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THE FOURTH YEAR AT THE HARVARD
MEDICAL SCHOOL.

It has been an interesting question among those anxious for the welfare of the Harvard School, but not informed as to its plans, what course would be adopted as to its fourth year. The recommendation by the faculty of a four years' course has not hitherto met with an encouraging response on the part of the students. Some few have seen the advantage of the more extended course of study, but the fourth-year class has not increased in numbers nor in scholarship, and no great progress has been made towards the establishment of a compulsory four years' course. Certain changes in the curriculum are already announced which seem calculated to make a very desirable change. The faculty retain the recommendation of four full years of study, and still expect that the time may not be very far distant when four years shall be compulsory. The changes are mainly in accord with the dominating idea at Harvard, of allowing the student an election in his courses of studies, though fortunately the existing three years' curriculum is not disturbed.

In addition to the existing requirements for the third-year degree, each candidate will be obliged to take examinations from a list of elective studies, to be chosen at the commencement of the year. He may choose to pass an examination of two hours in either of the following subjects, — Dermatology, Diseases of the Nervous System, Diseases of Children, or Gynaecology; or he may pass two examinations, of one hour each, in any two of the following subjects. — Ophthalmology, Otology, Mental Diseases or Legal Medicine.

The course of study for the fourth year will be entirely elective. To obtain the fourth-year degree each candidate must pass examinations amounting to ten hours chosen from the following list of studies, the choice to be made at the commencement of the year and to be regarded as final —

Examinations of two hours each in Ophthalmology, Dermatology, Otology, Clinical Obstetrics, Gynaecology, Diseases of Children, Diseases of Nervous System; of one hour each in Mental Diseases,

Laryngology, Operative Obstetrics, Operative Surgery, Legal Medicine, Hygiene, Bacteriology. The above are entirely distinct from the third-year courses of the same title, and in addition there will be given clinical and laboratory courses in Orthopedic Surgery, Genito-urinary Diseases, Syphilis, Ovarian Tumors, Clinical Microscopy, Preparation of Food for Infants and Invalids; in these courses no examination is required.

The hospital service in Boston differs from that of many cities in that candidates for hospital positions are required not to have received their medical degree. Such positions are awarded after a competitive examination, for the most part, and are usually taken at the close of three years of study. The successful candidates for these positions have usually taken later the degree of the three years' course, though evidently among the best of the students: a condition which has without doubt done something to render the fourth degree less popular. For the future the fourth-year degree is attainable by hospital internes under the following conditions:

House-officers in the Massachusetts General Hospital, Boston City Hospital, Carney Hospital, McLean Asylum, Massachusetts Charitable Eye and Ear Infirmary, Boston Children's Hospital, and Free Hospital for Women, may obtain the fourth-year degree by entering the fourth class, passing an examination in the elective amounting to five hours, and presenting a certificate of satisfactory performance of duty in the hospital for a period equivalent to the school year, and an acceptable thesis or clinical report based upon observations made during their service. On account of the shorter services in the Lying-In Hospital and Adams Nervine Asylum, internes of these institutions will be required to pass an aggregate of seven hours examination, and present a certificate and thesis as above.

Provision is also made for students who desire to devote their fourth year to special Laboratory Work, and the fees of the fourth year are diminished by one-half to men who complete four years in the school and to a nominal sum for hospital house-officers.

This course has not been elaborated without the careful consideration of other plans. It will doubtless prove attractive to many who failed to be attracted by the very laborious courses previously presented. It is to be expected that its numbers will be recruited from the start from the hospital internes, and it certainly presents on paper a plan which bids fair to be successful. The elective system is given a sufficient representation in the new plan; to allow it to interfere with the studies hitherto required in the first three years would certainly be a mistake.

— ♦ —
HYPERTENSION OF THE ARTERIES: THERAPEUTIC INDICATIONS. II.

IN angina pectoris, there is exaggerated and permanent arterial tension, and here, as in instances cited in the former paper, the beneficial influence of cardio vascular depressants, such as nitrite of amyl, glenoin, morphine, which open up the capillary sluiceways of the organism, is seen, while digitalis which raises arterial pressure, but aggravates the condition.

Permanent hypertension has been supposed by some excellent authorities to belong exclusively to

Bright's disease or to that form of the latter known as interstitial nephritis. As the older theory puts it, the heart is overworked, owing to the obstruction in the renal circulation, and hypertrophies; more work is also imposed on the arterio-capillary system, and changes in the arteries and minute vessels take place (increase of muscular tissue, fibroid thickening). This theory was eventually abandoned for what is now known as the "stop-cock theory," which makes both heart and arteries hypertrophied in a constant antagonistic struggle, the heart laboring to force into the tissues blood poisoned by waste elements which the kidneys, being diseased, have failed to eliminate, the arteries contracting preternaturally in the endeavor to shut the blood out of the tissues. A third theory which has had many advocates, notably Mahomed, who defends it in his treatise on "Chronic Bright's Disease without Albuminuria," and other papers, regards certain generalized circulatory changes, a condition known as arterio-capillary fibrosis, as primary, and Bright's disease only as one expression of this alteration of the bloodvessels. Without doubt this is an extreme view; there is too much evidence that in very many instances the renal disease comes first, and the arterial lesions are secondary to blood changes therefrom ensuing. The existence, however, of a general arterio-capillary fibrosis, apart from any renal affection, or at least, anterior to such affection, is very probable, and Huchard in the paper referred to last week, and to which we have again to call attention, presents some weighty considerations in support of his proposition that "arterial hypertension is the cause of the arterio-sclerosis, preceding for a considerable time the evolution of divers maladies (cardiopathies and arterial nephritis) which are themselves dependent on the vascular sclerosis." The order of facts is this: arterio-capillary spasm, arterial hypertension, arterial sclerosis, visceral sclerosis. Huchard cites instances where the long precedence of the arterial condition seemed clear to him; where for years there were the signs of exaggerated arterial tension (the sphygmographic tracings, the diastolic resonance of the aorta, the dyspnoea of exertion, etc.), then finally all the symptoms of interstitial nephritis manifested themselves. Such cases are often attended with considerable oedema of the lower extremities long before there is a trace of albumen in the urine. Here are witnessed the benefits of an exclusive milk diet, of iodide of sodium, of trinitrine, which often bring down arterial tension from 27-30 to 20, or even below this figure, as is shown by the sphygmomanometer. By such treatment the worst issues are often staved off for years, or kept permanently in abeyance.

The pathogeny of arterial hypertension is to be sought in the state of the heart, of the blood, or of the vessels. As for the influence of the heart, this would seem to be very limited, as, in this writer's estimation, it is doubtful if cardiac hypertrophy ever precedes a condition of arterio-capillary fibrosis.

The quantity and quality of the blood, Huchard thinks, have a restricted but real influence. If the water of the blood is augmented (serous plethora), arterial hypertension must ensue. The quality of the blood has a certain rôle. It is known that saturnism causes arterial hypertension; and this is undoubtedly the case with toxic products generally, which are retained in the blood through failure of the excretories to eliminate them. But the most efficient cause of hypertension is *spasm of the arterioles and capillaries*. This may be brought about by various agencies: gout, "which is to the arteries what rheumatism is to the heart;" rheumatism; the influence of tobacco; the abuse of alcoholic stimulants. Heredity has an important predisposing influence. Overwork has undoubtedly an etiological part; and so have mental emotions, which, Huchard says, often determine attacks of vascular spasm, and contribute to produce temporary or permanent hypertension. Huchard finds arterio-sclerosis to be especially frequent among members of the medical profession: this he attributes largely to the hurry, anxiety and overwork incident to this profession.

Among the symptoms of hypertension may be mentioned the oppression, the dyspnoea on exertion, palpitations, which are often of a distressing character, local accessions of alidity, of pallor, etc. Broadbent mentions besides, a tendency to somnolence, headache, vertigo, certain neuralgias, in a word, all the morbid incidents peculiar to arterial spasm. Acute dilatation of the heart and aorta often accompany this condition of vascular hypertension; this is revealed by peculiar signs, such as the diastolic aortic resonance alluded to in the previous paper. At the same time, the precordial shock is increased, giving to the organ the character of the "impulsive heart." The beatings of the arteries are exaggerated, the radial pulse is "strong, vibrating, concentrated, tense," *corded*, as the old writers called it.

The therapeutic indications are clearly deducible from the foregoing considerations. The heart must be sustained, and the peripheral obstacles diminished: everything capable of bringing about vaso-constriction and arterial hypertension must be avoided, all medicines, for instance, such as chloral, ergot, lead, belladonna; beverages, such as tea, coffee, alcoholic stimulants; tobacco, excesses of the table, too animalized a diet; finally, excessive or depressing emotions, and overwork of mind or body.

Among medicines, such as are known to be vasodilators or depressors, are indicated, such as opium, aconite, trinitrine, nitrite of amyl, the iodides. A mixed diet is to be recommended, such as white meats, fresh vegetables and salads, bread and fruits and milk. In some cases of great vascular fulness, abstinence from liquids, the "dry diet" of Chomel is to be advised. The functions of the skin and other excretories should be promoted, the hours of sleep regulated, and exercise should be just sufficient: in fact, the most effective treatment is the prophylactic.

MEDICAL NOTES.

—The medical officer in charge of the Marine-Hospital Service reports from the Ship Island Quarantine Station, Miss., that the captain and four men died of yellow fever, on the Norwegian bark "*Magnolia*," on the voyage from Rio Janeiro. The vessel was bound for Pensacola, Fla., and is now undergoing quarantine at Ship Island, having been sent to that station by the Pensacola health authorities.

Two cases of yellow fever were reported at Tampa, Fla., July 16th, one convalescent, and the other probably fatal. There are several cases at Manatee. On July 19th, the governor of Florida made application to the Secretary of the Treasury for aid to the local health authorities in suppressing the disease, and the Secretary informed the Governor, that aid would be furnished through the Marine-Hospital Bureau. A house inspection at the villages named will be immediately commenced.

Seventeen deaths from yellow fever were reported at Havana, Cuba, for the week ending July 7, 1888.

The health officer at San Francisco, Cal., telegraphed under the date of July 18th: "Cholera reported epidemic at Hong-Kong." The State Department has cabled the consul at Hong-Kong to report the facts.

—We learn from an English exchange of the sad death of Mr. Edmund Gurney, Secretary of the Psychological Society, and author of "The Power of Sound" and other works. The deceased gentleman suffered from obstinate sleeplessness and occasional neuralgia, and succumbed to an overdose of chloroform which he incautiously took one evening when alone at the Albion Hotel, Brighton, whither he had gone for a night on business. This emphasizes the danger of the reckless habit of the self-inhalation of anesthetics.

—Dr. Thomas Wood recently showed before the Obstetrical Society of Edinburgh an experiment showing that the caudal extremity of the fetus is specifically heavier than the cephalic. (*Edinburgh Medical Journal*, July, 1888.) In a glass vessel was put a fluid composed of salt water and spirit of such a density that the fetus which it contained neither rose to the top nor fell to the bottom, but was suspended in the centre—in fact, the specific gravities of the fluid and of the fetus, were almost if not entirely equal. The position which the fetus assumed, therefore, showed which is the specifically heavier end, and this, as was seen, is the caudal extremity. The fetus floats in the fluid almost in a vertical position with the head uppermost.

—Dr. Thomas Linn, writing from Paris to the *Philadelphia Medical Times*, says, that some attention has been paid to the recent treatment by which the old Emperor of Brazil was brought out of his illness at Milan, and he is now fast recovering at Aix les Bains. It was hypodermic injections of caffeine that saved him, and in this connection it should be remembered

that caffeine is an uncertain drug, that has to be given in sufficient quantity in heart failure, and yet if too much is given it may prove fatal. It is also very insoluble in most of its salts, such as the citrate, etc., and it may be well in this connection to give Dr. Huchard's formula:

R	Caffeine.	.	.	.	.	.	.	2 grammes
	Benzoate of soda.	.	.	.	.	.	.	3 "
	Distilled water.	.	.	.	.	.	.	6 "
M	(Make the solution while it is warm.)							

From four to six injections per day, the usual syringe used each time of this solution, is the proper dose. It will be found to act as a general tonic, a cardiac tonic, and above all as a *diuretic*, being perhaps the best of all for this purpose. The salts of caffeine are not used here now at all but the drug itself combined with benzoate of soda to make it soluble.

—Dr. Richard J. Levis in his presidential address on the "Traditional Errors of Surgery," (*Philadelphia Medical Times*, July 21st,) before the Medical society of Pennsylvania, tells some truths which are not gratifying about professional prejudice, especially in connection with the subject of ether anæsthesia, and ovariectomy. As to the former, he quotes from the *Philadelphia Medical Examiner*, 1846:

"We should not consider it entitled to the least notice but that we perceive, by the *Boston Medical and Surgical Journal*, that prominent members of the profession in that city have been caught in its meshes. We are persuaded that the surgeons of Philadelphia will not be seduced from the high professional path of duty into the quagmire of quackery by this will-o'-the-wisp. We cannot close these remarks without again expressing our deep mortification and regret that the eminent men who have so long adorned the profession in Boston should have consented for a moment to set so bad an example to their younger brethren, as we conceive them to have done in this instance. If such things are to be sanctioned by the profession, there is little need of reform-conventions or any other efforts to elevate the professional character. Physicians and quacks will soon constitute one fraternity."

Regarding the infant operation of ovariectomy, Professor Charles D. Meigs thus emphatically expressed himself: "I detest all abdominal surgery." "I am free to say that I look upon all operations for the extirpation of the diseased ovary as not to be justified by the most fortunate issue in any ratio whatever of the cases." "Dr. Atlee's coolness in cutting open a woman's belly does not, I think, entitle him to judge more clearly than I, as to the morals of such surgery. . . Dr. Atlee likes ovarian operations; on the contrary I detest them, and should be glad to see them prevented by statute."

. . . "I should be glad if you would look over the statistics of ovariectomy to discover how many bellies have been ripped up by the surgeons in the expectation of having the blessed satisfaction and *praise* of curing a tumor. Suppose a surgeon to open a woman's belly to extirpate an ovary; that he finds no ovary there; that he then sews up the gash; and next, that

she dies! What should the attorney-general say? It would scarcely be unfair to say, of all the fatal results of operation for extirpation of the ovary, that the patient is compelled to render her soul to God, and her carcass to the surgeon."

NEW YORK.

—Some alarm was recently caused by the appearance of small-pox among the patients in the city insane asylum on Ward's Island; but the most vigorous measures were at once taken to prevent the spread of the disease, including a general vaccination of the inmates. Five cases in all were removed to the small-pox hospital on North Brothers Island, and it is probable that no additional cases will now develop. The disease appears to have been carried from the city by some of the attendants in the asylum.

—The Health Department has issued a notice calling attention to the fact that a large proportion of the records of births, marriages and deaths received for filing in the Bureau of Vital Statistics are written in aniline inks, which will be illegible in a few years. The Board therefore requests that in documents sent them, only good and permanent black ink be used.

Miscellaneous.

THE HARMLESSNESS OF CERVICAL LACERATIONS.

DR. EMIL NOEGGERATH has attacked an article of the gynecologists' creed in the following radical utterances:—

(1) Women with uterine disease conceive more easily if the cervix is lacerated than if it is intact. They abort less often in the first condition than in the second.

(2) The position of the uterus is not influenced by cervical laceration.

(3) The uterine axis is not lengthened by cervical laceration.

(4) Erosions and ulcerations are equally frequent in lacerated and in intact cervixes.

(5) Erosions of the lips are never the direct result of cervical laceration.

(6) Disease of the tissues of the cervix are not more frequent in lacerated than in uninjured cervixes.

(7) Cervical tears have no influence on the development of uterine disease either as to intensity or frequency.

In his concluding remarks he recommends that lacerations and tears be left alone.

LABORATORIES AND MUSEUMS OF HYGIENE FOR TEACHING PURPOSES.

DR. PROUST, the Professor of Hygiene in the Faculty of Medicine, Paris, recently gave a lecture congratulating the students that this school is at last to have a laboratory and museum specially designed for use in the teaching of practical hygiene.

The model for buildings of this kind has been the institute built and equipped by the University of

Munich for the use of Professor Von Pettenkofer. Laboratories specially devoted to giving instruction in hygiene now exist in Berlin, Leipzig, Göttingen, Buda-Pesth, Amsterdam, and in connection with the medical faculties of most of the great universities. Of these the largest and most completely equipped is that at Berlin, under the direction of Dr. Koch, which has in connection with it a large museum containing most of the exhibits which were in the Berlin Exposition of Hygiene in 1883.

In France the organization of such an institution is just beginning, Dr. Proust stating that thus far he has had at his disposal neither laboratory nor museum nor assistance or material of any kind in teaching.

In this country the first steps towards the organization of a laboratory and museum of hygiene have been taken at the School of Mines of Columbia College in connection with the departments of chemistry, engineering, and biology, and similar materials exist and are used in the Massachusetts Institute of Technology.

The amount and variety of apparatus, models, etc., required for effective teaching in practical hygiene, whether this instruction is to be given to medical students or to architects and engineers, is very considerable, but it is in every way worth its cost, and the institution which is best provided with such material is the one which, in the long run, will succeed the best. For the last few years the tendency has been to consider a laboratory of hygiene as synonymous with a bacteriological laboratory, and for this there was good reason. There are, however, many problems to be worked out in the former which find no place in the latter, and while the hygienic laboratory must include all the means of bacteriological research, it should also contain many things whose relations to bacteria are very remote.

The only museum specially devoted to hygiene which we have in this country is the one under the direction of the Medical Department of the United States Navy in Washington. This contains a large amount of interesting material brought together by the first director of the museum, Dr. J. M. Browne, who is now Surgeon General of the Navy, but it is not well housed, being overcrowded, and is not located where it would be of the most interest. It is not at present used for teaching purposes.

It seems not improbable that a well-equipped laboratory and good museum for instruction in practical sanitation will be soon formed at the School of Mines in New York where it is needed and will be most useful, and it is probable that in all our technological schools such institutions will soon be developed.

To what extent practical instruction in hygiene is given in medical schools in this country we do not precisely know. Many of them have courses of lectures on hygiene given to the students; we believe that in the course of these lectures a few specimens of plumbing fixtures, good and bad, are occasionally shown, and bacteriological instruction is now given in the better class of medical colleges, but no one of our medical schools has anything comparable with Pettenkofer's Institute at Munich.

It is safe to predict that there will soon be a change for the better in this respect, and that the larger and more reputable schools will find that they cannot afford to neglect this branch of study as they have done in the past. — *The Sanitary Engineer*, July 14.

THE ELIMINATION OF MERCURY.

M. F. BALZER and Mlle. A. Klumpke during the past year have made a long series of observations at the Lourcine Hospital, in Paris, on the amount and rapidity of the elimination of mercury by the urine during a treatment of long standing. (*Revue de Med.*, April 1888, and *Practitioner*, June 1888.) The condition of the mercury in the system, in whatever form it is administered, is according to some authors the bichloride held in solution by albumen or sodium chloride; or perhaps more accurately an albuminate of the oxide of mercury united with sodium chloride. Others, again, show some cause for thinking that metallic mercury in a state of extreme division is precipitated by hæmoglobin and circulates in the blood. The point cannot be considered settled. It accumulates in all tissues, but more especially in the liver and kidneys. It is eliminated almost entirely in the urine, but is also found in the saliva, sweat, feces, and, which is an important point, the milk. There are many methods for the estimation of mercury in organic fluids; M. Balzer and Mlle. Klumpke have throughout adopted that of Witz, as modified by Souchow and Michaelowsky, which permits of the easy detection of a thousandth of a grain in an ounce. After a single dose of mercury its elimination is rapid and seems complete in twenty-four hours. If a continuous treatment is interrupted its excretion continues for some

time after the interruption, and it has been found in the liver as much as a year after its administration has been stopped (Kussmaul, Gorup-Besanez). During a continuous treatment by equal daily quantities of mercurial ointment, Michaelowsky found from 1,500 analyses of the urine in seventy-four cases, that the amount eliminated gradually increased along with the length of time the treatment had been used, but became nearly constant after about a month. Souchow showed the same thing during a treatment by injections. After either treatment had been continued for some months and then been stopped, slow elimination went on for from six to nine months. It is sometimes desirable to hasten this final elimination, and potassium iodide has been thought to be of use. But this is at least doubtful, and hot air baths producing much diaphoresis have been found of more service. The amount of mercury that can be steadily eliminated for many weeks from the kidneys when the body is saturated is about a sixteenth of a grain (0.06 gramme). Less than half this quantity is excreted by the saliva; and the remainder, if there is any, passes with the intestinal excreta and may give rise to diarrhœa. The practical conclusion to be drawn from these minute researches is that it is well to stop the administration of mercury when the amount eliminated by the urine has reached its normal maximum, for neither abnormal polyuria can be counted upon to carry it off, nor is its passages by other channels likely to be innocuous.

REPORTED MORTALITY FOR THE WEEK ENDING JULY 14, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Diph. & Group.	Whoop'g Cough.
New York	1,526,081	1087	661	42.94	9.12	34.96	4.46	1.06
Philadelphia	1,016,758	419	235	26.18	12.10	18.92	14.52	1.32
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	700,000	—	—	—	—	—	—	—
St. Louis	440,160	237	79	28.00	6.40	22.00	2.00	—
Baltimore	157,155	216	154	40.48	6.08	36.45	.81	1.22
Boston	407,024	123	45	24.30	13.77	12.15	2.43	7.29
Cincinnati	325,000	128	—	19.50	9.36	14.60	1.56	—
New Orleans	248,000	—	—	—	—	—	—	—
Buffalo	220,000	—	—	—	—	—	—	—
Washington	225,000	120	67	31.54	5.81	22.62	.78	3.12
Pittsburgh	210,000	91	52	32.70	9.81	26.16	1.09	3.27
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	125,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	35	17	28.57	17.16	25.94	—	—
Charleston	60,145	50	23	36.00	12.00	26.00	—	4.00
Portland	40,000	17	4	—	—	16.66	—	—
Worcester	76,528	25	9	20.00	16.00	—	—	—
Lowell	68,530	—	—	—	—	12.00	—	—
Cambridge	64,079	22	10	27.24	—	13.62	—	9.10
Fall River	61,203	29	17	41.40	6.90	37.95	—	—
Lynn	51,467	9	3	11.11	33.33	11.11	—	—
Lawrence	40,175	—	—	—	—	—	—	—
Springfield	39,452	—	—	—	—	—	—	—
New Bedford	36,228	15	3	26.66	20.00	13.33	—	—
Somerville	33,307	16	0	37.50	18.75	12.50	12.50	—
Holyoke	32,887	14	11	85.68	7.14	71.40	14.28	—
Salem	28,781	11	4	27.27	9.09	9.09	—	—
Chelsea	27,552	5	2	20.00	—	—	20.00	—
Haverhill	24,979	4	0	—	—	—	—	—
Taunton	24,716	—	—	—	—	—	—	—
Brockton	24,784	3	0	33.33	33.33	33.33	—	—
Gloucester	23,187	—	0	—	—	—	—	—
Newton	21,105	3	0	—	—	—	—	—
Malden	18,982	4	2	—	25.00	—	—	—
Fitchburg	17,534	2	1	—	—	—	—	—
Waltham	16,651	2	0	—	50.00	—	—	—
Newburyport	15,839	4	0	—	—	—	—	—
Northampton	15,419	7	3	28.56	28.56	14.28	14.28	—

Deaths reported 2,708; under five years of age 1,399; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 680, consumption 233, acute lung diseases 124, diarrhoeal diseases 744, diphtheria and croup 79, whooping-cough 33, typhoid fever 29, measles 24, scarlet fever 18, puerperal fever 15, cerebro-spinal meningitis 12, malarial fever 11, erysipelas eight, small-pox (Philadelphia) seven. From typhoid fever, Philadelphia 13, St. Louis four, New York three, Boston and Salem two each, Baltimore, Washington, Pittsburgh, Charleston and New Bedford one each. From measles New York 19, Philadelphia, St. Louis, Baltimore, Cincinnati, and Washington one each. From scarlet fever New York 15, Baltimore and Cambridge one each. From puerperal fever, New York eight, St. Louis five, Charleston and New Bedford one each. From cerebro-spinal meningitis, New York, St. Louis, Washington, Worcester and Somerville two each, Cincinnati and Nashville one each. From malarial fever, New York and St. Louis three each, Baltimore two, Cincinnati, Charleston and Fall River

one each. From fevers, New York six, Boston and Pittsburgh one each.

In the 28 greater towns of England and Wales with an estimated population of 9,308,275, for the week ending June 30th, the death-rate was 15.5. Deaths reported — infants under one year of age 2,864; acute diseases of the respiratory organs (London) 156; whooping-cough 85, diarrhoea 73, scarlet fever 43, diphtheria 34, measles 32, fevers 22, small-pox (Preston 1), Sheffield three, Hull one) 15.

The death-rates ranged from 10.4 in Brighton to 27.8 in Preston; Birmingham 11.2; Blackburn 14.5; Bradford 15.0; Hull 11.7; Leeds 13.3; Leicester 15.3; Liverpool 16.1; London 15.1; Manchester 21.2; Nottingham 15.1; Sheffield 17.0; Sunderland 13.4.

In Edinburgh 16.9; Glasgow 21.7; Dublin 24.8.

The meteorological record for the week ending July 14, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, July 14, 1888.	Barom- eter.	Thermometer.			Relative Humidity.		Direction of Wind.		Velocity of Wind.		State of Weather. ¹		Rainfall.		
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Sunday, ... 8	29.91	68.0	78.0	63.0	49.0	52.0	55.0	N.	W.	23	6	C.	F.		
Monday, ... 9	29.93	68.0	74.0	63.0	58.0	76.0	67.0	S. W.	S. E.	12	10	C.	O.		
Tuesday, ... 10	29.90	73.0	80.0	63.0	57.0	52.0	51.0	N. E.	S. E.	10	6	F.	O.		
Wednesday, ... 11	29.87	70.0	86.0	62.0	61.0	81.0	72.0	S. W.	S.	12	16	F.	K.		
Thursday, ... 12	29.42	65.0	79.0	56.0	54.0	38.0	46.0	W.	W.	40	12	C.	C.		
Friday, ... 13	29.68	66.0	73.0	56.0	60.0	60.0	60.0	N. W.	N.	29	9	C.	O.		
Saturday, ... 14	29.96	71.0	82.0	59.0	52.0	57.0	54.0	N.	S.	6	10	C.	O.		
Mean, the Week.	29.61		75.	60.		.56									

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 21, 1888, TO JULY 27, 1888.

MCFARLIN, THOMAS H., surgeon United States Army. Leave of absence extended one month. Paragraph 10, S. O. 160, Department of the Platte.

WOLFEKTON, WILLIAM D., surgeon United States Army. Leave of absence extended twenty days. S. O. 142, Headquarters Division of the Atlantic.

CONSON, JOSEPH K., assistant surgeon United States Army. Leave of absence for one month with permission to apply for an extension of one month. S. O. 78, Headquarters Department of the Columbia, Vancouver Barracks, W. T., July 13, 1888.

DAVIS, WILLIAM B., captain and assistant surgeon United States Army. Will proceed to Fort Niagara, N. Y., for the purpose of completing his target practice for this year with Co. C, 23d Infantry. Upon completion of this duty Capt. Davis will return to Fort Porter, New York. S. O. 145, Headquarters Division of the Atlantic, Governor's Island, New York City, July 17, 1888.

WOOD, LEONARD, first lieutenant and assistant surgeon United States Army, is relieved from duty at Fort Huachuca, Ariz. T., to take effect at the expiration of his present leave of absence, and will report to the commanding officer at Fort McDowell, Ariz. T., Paragraph 14, S. O. 162, A. G. O., July 14, 1888.

APPOINTMENT. HARVARD UNIVERSITY.

The appointment of Dr. T. M. Rotch as Assistant Professor of Children's Diseases was inadvertently omitted from the list of appointments published a few weeks ago.

ERRATUM.

In the last JOURNAL, on page 52, first line, "in spite of a possible removal" should have read "in spite of a possible removal."

DEATH.

Died at Uxbridge, Mass., July 19, 1888, Alonzo White Bennett, M.D., M.M.S.S., aged sixty-seven years.

BOOKS AND PAMPHLETS RECEIVED.

Biennial Report of the President of the Board of Health to the Legislature of the Hawaiian Kingdom. Session of 1888.

Fourteenth Annual Announcement of the Medical Department, University of Tennessee, Nashville Medical College. 1888.

Fifteenth Annual Report of the State Charities Aid Association to the State Board of Charities of the State of New York. December, 1887.

Conservatism in Gynecology. By A. Reeves Jackson, A.M., M.D., Professor of Gynecology in the College of Physicians and Surgeons, Chicago. Reprint.

The Treatment of Hemorrhoids. By Hunter P. Cooper, M.D., Atlanta, Georgia. Professor of Chemistry, Atlanta Medical College, Atlanta, Georgia. 1888.

The Early Diagnosis of Spinal Caries with remarks on Treatment. By Hunter P. Cooper, M.D., Professor of General and Medical Chemistry in the Atlanta Medical College. Reprint.

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Original Articles.

MASSACHUSETTS LUNACY LAWS.¹

BY WALTER CHANNING, M.D.

THE subject of this paper may not seem a very appropriate one to introduce at one of our meetings; but it is one which has been on my mind for several years, and I shall not feel satisfied until I have done everything in my power to at least bring it forward for discussion.

We can hardly hope in this world to find laws which will satisfy every one, as they owe their origin to human weaknesses, which require guidance and control, and the subjects of these defects do not care particularly to be guided and led, because they are incapable of managing themselves. None the less society must be maintained by rules and regulations which will be found to produce the greatest amount of good to the greatest number of persons.

More than any persons requiring laws for their protection are the insane, who especially appeal to our sympathy as a class, helpless through no voluntary transgression of social restraints, but through disease, the result of the age in which we all live and form a part. We are responsible for this disease, we ourselves may at any time succumb to it, and be thrown on the tender mercies of these very laws. Let us keep this idea then constantly in mind, and in considering the question, see if we should be willing to personally subject ourselves to the restraint and control liable to be forced upon us against our will, diseased and weakened though it may be.

As a starting-point, I wish to give it as my opinion, that our own State laws on lunacy, and those of many other States, are founded on a mistaken theory, as to the nature of insanity. This theory had its origin in the crude ideas of many years ago which regarded insanity as a loss of moral control, resulting in the free and unchecked play of the most vicious elements of human nature. The natural treatment of an insane person was in consequence similar to that which would be adapted to a person of criminal instincts, who had committed no overt act, but would be liable to commit such an act if not forcibly held in restraint. It was justifiable to confine and securely bind persons who were dangerous to society if at large. The safety of society was the first consideration. The suffering of the individual was of little importance, especially as it was due to his own wicked disposition.

During the present century, starting at its beginning and continuing to the present time, constant progress has been made, the details of which are familiar to you all, in the knowledge of insanity, and the treatment of the insane. One of the most striking tendencies in this progress has been toward the full recognition of insanity as a disease, in the pure sense of the word, and not as a moral weakness. And this simple and scientific doctrine of disease has revolutionized the intelligent treatment of insanity, and made, or is making institutions for the insane, *hospitals* instead of *prisons*.

That the public, though constantly growing more enlightened, do not yet fully comprehend the disease explanation of insanity is illustrated by the frequent details of brutal treatment of the insane at their own

homes. The manner in which patients are carried to asylums is also another illustration of the same thing. Last year (1887) for instance, sixteen patients were carried to the State Asylum at Utica in restraint, which was immediately removed on admission. Sixteen patients was also admitted the same year into the State Asylum at Buffalo in restraint. Of these eleven were hand-cuffs; three had in addition, shackles, one was brought in a muff, and one woman had her hands and feet tied with bandages. Almost any asylum could easily give deplorable details of the inhuman manner in which excited, but not dangerous patients have been treated before admission, and are brought to the institution.

But public opinion must be largely moulded by those having the direct care and treatment of the insane in their hands, and at the best can be expected to advance slowly and some distance behind its instructors.

The important and practical lesson we have been learning the last few years is—that the insane can be allowed a very large degree of liberty, and require little and probably no mechanical restraint while inmates of institutions. Unconsciously, almost, as to the influence at work to produce these results, we have rapidly increased the former and diminished the latter, until many of the tenets of ten years ago as to the asylum architecture, and management are already obsolete.

Ten years ago the rectilinear building, congregate treatment, and mechanical restraint were sacredly cherished, and strongly defended by nearly the entire body of American insane hospital authorities. Abroad they were striving after better things, and accomplishing them to some extent. In this country they were tabooed, or at least frowned upon and discountenanced.

Look at the transformation to-day! New York the head and front of conservatism in some directions in the care of the insane, not in all be it understood, is about to erect a new institution with twenty-two different buildings, many of them on the cottage plan, with congregate dining-rooms, diversified architecture, and every arrangement to carry the patient from a perfect hospital to a nearly ordinary dwelling-house.

The State Insane Asylum at Utica where for many years mechanical restraint was freely and openly applied and as openly advocated, has during the last year abolished restraint and given away the last "cribbed"!.

Certainly no more striking proofs of change and progress could be given than these.

During the ten years it will also be found that many small private institutions have been started, some of them being highly successful in every sense of the word. It is no accident that has given birth to these places. They come to fill a demand for greater freedom, more home-like surroundings, more privacy, more comfort than were formally to be found in large asylums. The improved condition of the insane required something more like the homes they had been accustomed to, and less institution-like, to fulfil the necessities of treatment.

With all these changes in the character of the insane and the consequent requirements of their treatment, it is well to examine our laws and see if the time has not arrived when they, too, may be revised with benefit. Are they not too narrow, too stringent, too inelastic? Is it necessary still to assume that the

¹ Read before the Boston Medico-Psychological Society, April 19, 1888.

managers of insane institutions are not to be trusted? Are committing physicians still to be held as corrupt and willing to aid in schemes to incarcerate insane persons in lunatic prisons? Are hospitals for the insane to be surrounded with so many safeguards, that the persons requiring their treatment must be frightened away? Is it not an outrage to make an insane hospital difficult of ingress? Should it not be made easy instead?

I cannot help feeling that the elaborate laws concerning insane hospitals help to keep alive the spirit of distrust at times more or less noticeable throughout the community. They constantly say to the public, "these institutions are dangerous places, they are full of temptations to lure the feeble, sick, and impoverished inside their gates, and when once within, to abuse and maltreat them."

It is always urged by the friends of these cast-iron laws, that the liberty of the person is sacred, and should only be controlled by law. This is true enough as long as the person is in his right mind, but once he loses his power of reason, he forfeits the right to use what he cannot be held to be responsible for. If he loses this controlling power by means of *disease*, no court can restore it to him. This, medical treatment alone can do. And medical knowledge only can determine when the power is lost, and when it is regained.

It is just here that the element of *trust* comes in. The sick and insane man must be absolutely *trusted* in the hands of the physician, and no court, or law must interfere to say where, or how he shall be treated, any more than if he has a fractured leg, or typhoid fever. The law may manage his property, and guard his interests, and keep any rights for him, or restore them to him, but his medical treatment it has no concern with.

We seek by our lunacy laws to do away with this element of trust, but after all they only divide the trust, or throw it into incompetent hands. Let us for a moment, for instance, consider the final order of commitment which sends the certified insane person to the asylum. This may be signed by "a judge of the supreme judicial court, or superior court, in any county where he may be, and a judge of a probate court, or of a police district, or municipal court." As we all know the majority of commitments are signed by judges of the probate court. "These judges shall see and examine the persons alleged to be insane, or state in their final order why it was not deemed necessary or advisable to do so."²

Now these judges often do not see the alleged insane persons; and it is not necessary for two reasons. (1) They can *trust* in the certifying physician, and (2) They know very little about insanity, and cannot be expected to judge what form of treatment the insane person may require.

The law should not have been optional, for it leaves a loop-hole open for the judge to shirk the responsibility, and further offers an opportunity for dishonest persons to so deceive the judge that he shall not deem a personal interview necessary. It is one of those laws that is more honored in its breach, than in its observance. As far as I can see there is nothing in this law which can prevent the possibility of a sane person being committed to an asylum, and the mistake would be a worse one if done with the approval of the judge, and harder to rectify.

As a matter of fact I do not believe any respectable physician is guilty of conspiring to falsely restrain an insane person. It would be too dangerous, and risky, too easily found out, and apart from moral considerations, no man of ordinary sense would be tempted to do such a thing.

Consequently it is my opinion that as far as corrupt practice on the part of the physicians is concerned, the order of the judge could be dispensed with.

The procedure under the laws of New York for committing insane persons to insane institutions is more reasonable and practicable both from the point of view of the judge and the physician. These laws³ specify that "no person shall be committed . . . except upon the certificate of two physicians, under oath, setting forth the insanity of such person. But no person shall be held in confinement in any such asylum for more than five days, unless within that time such certificate be approved by a judge, or justice of a Court of Records . . . and such judge, or justice *may* institute inquiry, and take proof as to any alleged lunacy before approving, or disapproving of such certificate."

It will be noticed that the function of the judge is here simply that of approval that the medical certificate is properly executed according to law. The responsibility of deciding as to the *mental condition* of the lunatic is not thrown upon him. But he has the authority to make a judicial investigation if for any reason he may think it necessary. And certainly no one would wish to take away this power from him, as his hands are the proper ones to place it in.

Contrast the Massachusetts law which places on the judge's shoulders the responsibility of saying "that the person committed is insane, and is a fit person for treatment in an insane asylum. And said judge shall see and examine the person said to be insane, or state in his final order the reason why it was not deemed necessary or advisable to do so."⁴

Even the laws of Pennsylvania of 1883 are much more reasonable in regard to commitments, than are the Massachusetts laws. The section of the laws on this subject is as follows: "No person shall be received as a patient for treatment, or for detention into any house, or place where more than one insane persons are detained for compensation without a certificate signed by at least two physicians resident in this Commonwealth, who have been actually in the practice of medicine for at least five years; both of whom shall certify that they have examined separately the person alleged to be insane, and after such examination had do verily believe that the person is insane, and that the disease is of a character, which in their opinion, requires that the person should be placed in a hospital, or other establishment where the insane are detained for care, or treatment, and that they are not nearly related by blood, or marriage to the person alleged to be insane, nor in any way connected as a medical attendant, or otherwise, with the hospital, or other establishment, in which it is proposed to place such person. The certificate above provided for shall have been made within one week of the examination of the patient, and within two weeks of the time of the admission of the patient, and shall be duly sworn to, or affirmed before a judge or magistrate of this Commonwealth, and the county where such person has been

² Sec. 34, Laws Massachusetts.

³ L. 1874, chap. 436, title 1, art. 1, sec. 1.

⁴ Section 12.

examined who shall certify to the genuineness of the signature, and to the standing and good reports of the signer."

The next section of the Massachusetts law,⁵ which provides for the physician's certificates is well enough as far as it goes, with one exception, and that is the absurd clause which specifies that neither of the certifying physicians shall be connected with any hospital, or other establishment for the treatment of the insane.

Nothing could be less necessary, or more unreasonable than this provision, and further than this, it works real injury to the lunatic, for he loses the services of asylum specialists who are certainly more competent to certify intelligently than most physicians as to his mental state.

The apparent animus of this law is to guard against the asylum physician certifying, and helping to commit a patient to an institution in which he may have an interest, but supposing he has an interest in one institution only, what possible reason can there be in preventing his signing certificates for other places? Both the English and New York and Pennsylvania laws adequately and properly cover this point. The laws of the latter State say: "⁶ It shall not be lawful for any physician to certify to the insanity of any person for the purpose of committing him to an asylum of which the said physician is either the superintendent, proprietor or officer, or a regular attendant therein."

Just this should be the law. When carried further and made to include every physician connected with a lunatic asylum, it is unjustifiable from every point of view.

The New York laws contain a very good provision in regard to the physician's qualifications which might be incorporated into our own laws with advantage. This is—that his qualifications shall be certified to by a judge of any court of record. Such a provision as this is a guaranty that as far as ordinary requirements and reputation go, the certifying physician is competent. It strengthens the hands of the physician, and gives more value and weight to his certificate.

The sections of our laws, numbers 26 and 27, which relate to emergency certificates, or commitments, have never seemed to me entirely satisfactory, as they either put into motion a good deal of cumbersome machinery, or are not strictly adhered to. Their object is to bring the alleged insane person under treatment within the shortest possible time, but if literally adhered to, the attainment of this object is under some circumstances extremely difficult, if not impossible. In the first place the applicant must answer the numerous list of questions given in section 15; the physicians' certificates must be *separately made* and signed, and in addition the application must be signed by one of the selectmen of the town, or the mayor, or one of the aldermen of the city in which the person to be committed resides.

It takes time to answer the questions, and a portion of them might be easily omitted, still they can usually be answered and perhaps the time required may not be ill-spent. There is certainly no need that the physicians' certificates shall be separately made and signed. If a provision is made that both physicians have examined the patient personally, one certificate with both signatures is sufficient.

The most troublesome feature of all is that providing for the signing of the application. In each individual instance, of course, the official specified should be found, and he should first investigate the case before signing his name. It is often, however, no easy matter so find any of these persons, at night, in midsummer and at other odd times, out of business hours. If the law is observed to its letter, nearly, if not quite as much time will be required to make out the emergency commitment as the ordinary commitment. There is a little more red tape about the latter, but where it is regularly and systematically tied up every day, the difference is insignificant.

Then, too, the emergency commitment requires a bond to the amount of one hundred dollars, to be given by the party committing the insane person. I must say I see no reason for this section of the law. The bond is to be given to the treasurer of the asylum, or hospital, which would lead one to suppose that it was to secure payment for the board of the insane person for the five days allowed by the emergency law. But I can see no more reason why a bond providing for payment of board should be necessary in the emergency case, which is for five days only, and in the exceptional case, than in the ordinary case. If there is any other or better reason for this bond, why should it be given to the treasurer of the hospital? Is it a guaranty of good faith? If so, it is a very unusual proceeding to make money the basis of such a guaranty. The other provisions of the law should make such a guaranty unnecessary. We may further question who is going to give the bond in the case of the ordinary pauper. The law says the "person committing." Who is the person committing? An application is to be signed, but the maker is not mentioned. Is the physician? Has he any right to make both the application, and the certificates? It may be held that the signer is the applicant. The next question is, shall the signer, be he mayor, alderman, or selectman, give the bond? If he does this, additional time will be required to consider this question.

I know now that physicians often go on this bond, but it is placing an unnecessary burden on them, and one not intended by the law.

The next section to be considered is that relating to *voluntary commitments*, a recent and important addition to our laws. A similar law is now in force in Scotland, and the Commissioners in Lunacy say of it in their last report for 1886: "Forty-nine voluntary patients were admitted into asylums," (the total number of registered lunatics being 11,025). "We have for some years been able to state that nothing has occurred to indicate any difficulty or disadvantage traceable to this class of patients in asylums; and we continue to be of opinion that this is a useful provision of the law which permits persons who desire to place themselves under care in an asylum to do so in a way which is not attended with troublesome forms, but which, nevertheless, affords sufficient guarantee against abuse."

I am glad to see this testimony in favor of the Scotch law, though the number of voluntary commitments is small. I have not at hand the Scotch law and do not know whether it is essentially like our own.

Perhaps evidence from our own hospitals and asylums would be somewhat similar. But the whole number of voluntary commitments is small, which may mean that the institutions do not generally favor

⁵ Section 13.

⁶ Section 2.

them, or that few persons among the public understand, or care to avail themselves of the law.

We find from the Report of the Board of Lunacy and Charity, for 1887, that during the six years the voluntary commitment act has been in operation, only two hundred and sixty persons have availed themselves of it, and most of these have gone to the McLean Asylum. During these six years the whole number of commitments from the general community was eighty-five hundred, and the number of voluntary commitments was scarcely four per cent. of the whole number. During the year 1887 there was less than fifty voluntary commitments, thirty of these being to the McLean Asylum. The balance was scattered about among the public lunatic hospitals. At Danvers there were but three voluntary commitments in 1887, which seems a very small number out of so large a total number of admissions, four hundred and forty-six in all. The deduction from this fact might seem to be that among the poorer classes in the community there are none, or nearly none of those persons "whose mental condition is not such as to render it legal to grant a certificate of insanity." Otherwise how can we explain the large number of voluntary admissions at the McLean Asylum, twenty-nine persons out of a total of seventy-four persons?

There is undoubtedly another explanation, which is something like this: The ignorance of the lower classes is always an obstacle in the way of early treatment, and the poverty of the middle classes, or those persons a grade above the lower classes, prevents them from seeking those surroundings which would be agreeable to them while still retaining their reason. Both of these classes, when once unable to care for themselves, must be sent away to those institutions provided to take them at the lowest cost. It is no longer a voluntary question with them, or their friends, but rather a necessity, and this settles the question of commitment.

With the upper classes the question is the exact opposite. They can be influenced at an earlier period in their disease to seek treatment and they further have the requisite means to pay for surroundings in keeping with those at home, to which they are willing to go, and their friends are willing to send them, at an early period.

I suppose the provision laid down in section 28 of the law is, however, rarely adhered to as to whether the mental condition of the alleged insane person is "not such as to render it legal to grant a certificate of insanity." If the person is undoubtedly insane, then the institution has no legal right to admit him, no matter how willing he may be to voluntarily commit himself, but as far as my observation goes, the admission has usually turned on the latter point. We all know that many insane persons are quite able to sign voluntary agreements, but no such person can be admitted under the law. If the mental condition of the person is obvious, then of course a certificate can be made out, and he must be committed in the ordinary manner.

The voluntary law from its language, is intended for the sane and not for the *insane*, and should not be used to commit the latter. Of what use otherwise are complicated lunacy laws, if persons deprived of the natural use of their ordinary reasoning and will power can shut themselves up in insane asylums under the pressure usually of their friends and relatives? And further, supposing the voluntary patient becomes vio-

lently insane, what is his legal status then in the asylum? If he entered the institution of his own accord, in a semi-insane condition, he certainly passes when violently insane, into a perfectly defenseless condition, and could under no circumstances more need any protection the law may grant than at such a time. Is he still to be regarded as a voluntary inmate, able to leave after three day's notice? This is manifestly absurd, and leads to the inevitable conclusion that if the voluntary patient admitted sane, becomes insane, he should be regularly committed.

Section 29 provides for immediate notice to the Board of Lunacy and Charity of the voluntary admissions, and the Board is required to immediately investigate such cases. What this investigation may be, I do not know, but it should be made at once by a medical man capable of judging of the various degrees of mental disease, and the Board of Lunacy and Charity should from time to time make a special examination of the voluntary cases. In my opinion there should be some legal provision whereby the person desiring to enter an insane asylum voluntarily, may so commit himself independently of the asylum authorities. For instance, one or two physicians should certify to his mental disease partial or developed, and to the asylum being an appropriate place for his treatment. This certificate then to be approved by a judge of probate, or some other official.

As the insane asylum is primarily, and strictly should be for the insane alone, the sane should be excluded, rather than invited to seek its treatment, but cases of partially-developed disease for the time practically insane, should gain easy admittance. The certificates of one or more physicians need only certify to the facts, and to the desirability of treatment. The approval of a judge would be the only bit of red tape, which could be easily managed, and the voluntary cases would then be placed on record and have some legal standing.

The small private institutions are at present discriminated against so far as the voluntary law is concerned. The law says (sec. 26), "The superintendent, or keeper of any lunatic hospital, . . . may receive into his custody, etc." It has been held by the Board of Lunacy and Charity that the small private institutions were not included in the meaning of this law. Such may, or may not be the correct interpretation of the law, the Board has, at any rate, the power to enforce this interpretation, and we now find that no small places receive voluntary cases.

As they, more than any other institutions are especially adapted to receive just such cases, there is manifest injustice somewhere. If they are not properly organized and managed, they should be brought up to the requisite standard. If the law is not full enough to take them in, it should be enlarged.

There are probably defects in both these directions in consequence of the possibility of which the Board ruled against them. The remedy is to include them clearly in the law admitting voluntary cases, and then to provide for adequate supervision. The latter is both necessary and just, as they have no trustees, are proprietary, and are growing steadily in number.

Another unnecessary provision in our law is section 30, which provides that "Any physician who wilfully conspires with any person unlawfully, or improperly to commit to any lunatic hospital, or asylum . . . any person who is not insane, shall be punished by fine, or

imprisonment at the discretion of the court." This section may have been suggested by the English law, 16 and 17 Victoria, chap. 96, sec. 13, which says, "Any physician, surgeon or apothecary, who shall sign any certificate, or do any other act (not declared to be a misdemeanor), contrary to any of the provisions herein contained, shall for every offence forfeit a sum not exceeding twenty pounds."

It must be remembered that the history of institutions for lunatics in England is entirely unlike that in this country. The English laws have been made from time to time to meet the special requirements of the circumstances, and often stringent laws were at the time necessary.

With us the case is different. Our lunatic asylums are well-managed. The public has confidence in them, and is satisfied with them. The small private asylums are strictly medical in character, and up to the present time have received few patients.

We do not require stringent laws to regulate admissions, but rather the doors of lunatic asylums should be easily opened to encourage early treatment. Neither do we require elaborate laws regulating the care and treatment of the patients while in the asylum. The mismanagement and abuse formerly somewhat prevalent in the English proprietary asylums are hardly possible in this country.

What we do need, however, is careful medical supervision of our whole system of provision for the insane. Every year this need becomes more apparent and urgent. A medical commissioner in lunacy, of ability and experience, is the person to whom this work should be confided. No other person, however competent, would in my opinion, be able to satisfactorily supervise the details of work, which must never be allowed to lose its medical character.

In Massachusetts the institutions for the insane are so compact that they can be easily visited, and the details of a practical system could be put into operation somewhat after the manner of New York. But here the result would be of a very different character; for while no one man can efficiently supervise the system of provision for the insane covering such an immense territory as in New York, here, one man could do it thoroughly.

The theory under which the New York commissioner in lunacy acts is excellent, but he is expected to do the work of three men, as a consequence of which his work loses very much in value, and the theory is never carried into practice as far as it should be.

I have merely outlined a few of the defects of our Massachusetts lunacy-laws. There are others which might be referred to perhaps rather as *blemishes* than defects. Our laws are in many ways excellent, and have worked pretty well, partly, I fear, because they have not been strictly followed. They would have been less satisfactory if followed to the letter. The time is coming, however, when some revision of these laws will be necessary, both for the purpose of improving on those in existence, and adding on others to cover the need of medical supervision, the wisdom of which I think no one will question.

The time for this revision may not have arrived as yet; but thinking that it is not far off, I have prepared this paper for the purpose of introducing a discussion on the three following points:

(1) Do our Massachusetts lunacy laws need revising?

(2) Has the time arrived for this revision?

(3) Shall a committee of this Society be appointed to prepare a revision of the existing laws, and a draft of new laws establishing a medical State commissioner in lunacy, to serve as the basis of future legislation?

KATALYTIC ACTION OF ELECTRICITY; ITS PRACTICAL VALUE IN RHEUMATIC AFFECTIONS.

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It has been long recognized that the effect of the electrical current on animal tissues comprises something more than the stimulation of nerves and muscles. Remak first called attention to the alteration produced in living tissues by the passage of the galvanic current, and applied the name "katalytic" to this function. Experiment has shown also that fluids may be made to pass into the body by means of special electrodes adapted to the purpose, a property of the electrical current which has been termed its "kataphoric" action. Whether the latter is an element in the production of the katalytic action, or whether vaso-motor changes, improved nutrition by stimulation of the trophic mechanism, increased tissue-metamorphosis, osmosis, or molecular changes, each or all, are important factors, cannot as yet be accurately determined; the conditions are too complicated for satisfactory experiment and analysis. The practical bearing of the question lies in the fact that therapeutic experiment has demonstrated beyond a doubt that such changes may be produced in the tissues as to cause improvement and even recovery in certain disorders not yielding to other treatment. Prominent among these disorders are subacute changes in or about the joints, of rheumatic origin.

Erb¹ quotes the observations of Remak, Rosenthal, Meyer, Cahen, Cheron, Weisflog, Benedikt, Onimus, Legros and Erdmann, as well as citing his own personal experience, to illustrate the practical benefit of electricity as a therapeutic agent in various forms of arthritis, including acute and chronic rheumatic and traumatic affections. It appears proved that exudation and pain may be made to disappear, and the normal mobility of the joints restored, in cases where other remedies have failed. Rosenthal and Bernhardt² allude to the effects of the galvanic current on rheumatic affections of muscles and joints, choosing the subacute and monarticular joint affections as the most promising objects of experiment. They recommend especially the galvanic current, considering faradism also valuable as a counter-irritant, as well as faradization of neighboring muscles. They state that even in acute rheumatism the faradic current and the wire brush have been found to lessen pain and shorten the disease, but throw doubt on its supplanting salicylic acid and other remedies. They allude to the passage of galvanism or faradism as promoting absorption of joint exudation and lessening the pathological processes in the neighborhood of the joint (fasciæ, tendons, periosteum and muscles). Beard and Rockwell³

¹ *Handbuch der Elektrotherapie*. Leipzig, 1882, p. 251.

² *Elektrizitätslehre für Mediziner und Elektrotherapie*. Berlin, 1884, p. 459.

³ *Practical Treatise on the Medical and Surgical uses of Electricity*. New York, 1878, p. 641.

state that electricity has been employed with more or less success in rheumatism from the early periods of the history of electrotherapeutics, and add that this is the disorder against which (next to paralysis), the original experiments of electrotherapeuticians were most frequently directed. They lay stress on the importance of the general application of electricity, inasmuch as the disease is constitutional, and recommend general faradization quite as strongly as local application. They find subacute and acute cases far more amenable to treatment than chronic. For the local treatment galvanism and faradism are recommended alternately. The general application is said to increase the flow of urine, to cause generally more or less exhilaration, and to relieve pain; the local application relieves pain, reduces inflammation, and when effusion has taken place, causes absorption; the latter being affected by both currents, in some cases more powerfully by the galvanic. The caution is added that if the currents are used too strong or too long, the pain and inflammation may be increased. In the cases quoted by these authors, general faradization seems to have been the chief agent, although in one case the application was made with special reference to the diseased parts. In myalgia, or muscular rheumatism (characterized by pain on movement diffused through the muscles, and caused usually by exposure to cold and dampness), local faradization with the mild current either stable or labile, usually causes relief in a short time. Stable galvanism may relieve at once; severe applications may increase the pain. They add: "Of the large number of cases that we have treated, nearly all have been relieved by one, two, or more applications. A single application with a mild current, prolonged for one or more hours, may sometimes dissipate an attack of myalgia." In one of the two cases cited, general faradization was used in a case of several years' standing, cure resulting in three weeks. In another case, muscular rheumatism existing in the hips and limbs for a month, recovered in a fortnight under daily faradization of the affected parts. Duchenne¹ reports cases of muscular rheumatism, rheumatic paralysis, and rheumatic contracture, cured by the use of faradism.

Other authorities could be cited to confirm these observations, but enough have been mentioned to show that the subject is one which has attracted universal attention among electrotherapeuticians from the first. It seems, therefore, somewhat remarkable that the profession in general have made so little of this branch of electrotherapeutics, even while the application of electricity has been greatly in vogue for all forms of paralysis, for which it has for a long time been applied indiscriminately, sometimes in accordance with, but oftener in defiance of scientific principles. The experience of the writer has been most satisfactory in the treatment both of muscular and articular rheumatism; successful results have followed, almost without exception, in the cases where it has been tried; a careful selection of subjects having contributed largely to this result. Long standing, chronic cases, such as deforming arthritis, have not been operated upon, for in no such case has the prospect of recovery seemed sufficient to warrant the trial. Cases of acute rheumatism, again, have hardly seemed to me appropriate subjects for this form of treatment, in which opinion I coincide fully with Rosenthal and Bernhardt,

quoted above. Indeed, far from electricity replacing internal remedies in the treatment of acute rheumatism, it is to be feared that more harm than good would be brought about by its use.

The cases selected have been limited to subacute, monarticular rheumatism, to muscular rheumatism of not too long standing, and to allied conditions. In every case the electricity has been applied locally. I would not underrate the value of general faradization for cases of general debility resulting either from persistent rheumatism or from other causes. I do not, however, feel convinced that the root of the disease, as such, is directly attacked by general faradization as implied by Beard and Rockwell. My experience leads me to emphatically endorse the caution of Beard and Rockwell regarding excessive length and strength of application, especially in acute cases. A medical friend, suffering from subacute rheumatism, having found the faradic current extremely efficacious in reducing the swelling of the finger-joints, gave himself a sitting of forty-five minutes with a strong current, and produced thereby a decided accession of pain, stiffness and swelling. In one case of muscular rheumatism, again, quite acute, the galvanic current was given by my advice, and ten cells of the chloride of silver battery, applied ten minutes, aggravated the trouble so greatly as to cause its discontinuance. The exact amount of electricity received in the case cannot be accurately determined, since no galvanometer was used. The following will serve as illustrations of more favorable cases.

CASE I. J. R., janitor, thirty years of age, treated in conjunction with Dr. W. J. Otis. Two months previous to the commencement of treatment, had rheumatic fever with pain and swelling, involving principally the right fingers and wrist, the right shoulder and ankle being also affected. The symptoms rapidly disappeared, excepting in the right wrist, where considerable pain, and marked swelling and stiffness persisted.

Examination shows the wrist red and swollen: it can be flexed fairly well, but neither extended nor adducted without great pain, and not to a great degree even with pain. He cannot double the fist, nor approach the thumb to the little finger: flexion of the fingers, both active and passive, is impossible, and spreading of the fingers is difficult. The grasp with the dynamometer is zero. Massage is painful. The muscles of the extensor group are wasted, — the right forearm measuring 9 inches, the left 10½ inches; the right wrist measuring 7½ inches, the left 7½ inches. The reaction of the extensor muscles, both to the galvanic and faradic currents, is decidedly lessened in degree, though not altered in quality (that is, no degeneration reaction). Lead-poisoning, poliomyelitis and neuritis were carefully eliminated.

Treatment. — A moderate galvanic current passed through the wrist and fingers (medium-sized electrodes of metal covered with chamois-leather); faradism and galvanism to the muscles. The electrodes were placed opposite each other, at different points about the wrist, and held quietly, so as to allow the current to pass directly through, the current being occasionally reversed. Each sitting lasted about twenty minutes, and was repeated daily.

Improvement was apparent after the first sitting. On the third day the patient could flex the fingers, and reach the last phalanx of the little finger with the

¹ De l'électrisation Localisée, p. 883.

thumb: slight adduction of the wrist was possible, and the grasp was improved. At the end of the first week the dynamometer registered six: there was no pain on movement, little on massage. At the end of the second week the dynamometer registered ten; there was no pain on movement or massage; the fingers were easily spread, and the thumb could be approximated to the base of the little finger; adduction fair; extension possible to the straight line; swelling lessening, and forearm increasing in size. A splint was applied to assist extension. At the end of the third week the right forearm had increased from 9 to $9\frac{3}{8}$ inches, and the right wrist had decreased from $7\frac{1}{2}$ to $7\frac{1}{4}$ inches; the dynamometer registered fifteen. At the end of the fifth week no swelling was perceptible at the wrist; all movements of the wrist and fingers were free, excepting a very slight restriction in extension; the grasp was good, although the fist could not be clenched quite as firmly on the right as on the left. Treatment discontinued.

CASE II, kindly referred to me by Dr. J. R. Chadwick. A prominent lawyer, beyond middle age, a rather heavy man, had suffered during the previous winter from a severe attack of sciatica, which entirely disabled him, and required the use of opiates. This wore off, and by spring he was able to get about easily. Early in the summer the ankles began to show a tendency to swell, more especially the left. The trouble increased until it caused the patient considerable annoyance. The swelling was unaccompanied by noticeable pain or redness, but was increased by exercise, being particularly marked at night.

Treatment was commenced in the middle of October, no promise of benefit being held out. The faradic current (every other day) was first applied, and the result was so gratifying that this form of electricity was used throughout. The swelling could be seen to lessen, and the movements of the feet to become more free during each application. The return of the swelling between the applications became gradually less marked, and in two months and a half the ankle was virtually normal, and the treatment was discontinued. Recurrence of the trouble one month later caused the treatment to be recommenced, with similar result, two weeks proving sufficient for recovery. During the two years succeeding there have been occasional intervals of moderate swelling, accompanied by slight pain and stiffness, not sufficiently marked to require treatment. There has been, also, one attack of sciatica.

I have treated a number of cases of muscular rheumatism, notably of the neck and back, with results coinciding with those of Beard and Rockwell and other writers. No case, however, offers sufficiently marked or unusual characteristics to justify especial mention. The rapidity with which pain and stiffness sometimes disappear under the treatment certainly warrants the assumption that the current produces some definite change in the tissues, and acts as something more than a stimulant to nerves and muscles. It seems not improbable that here, too, we have to do with the absorption of a moderate degree of exudation. Cases of the ordinary form of stiff neck from exposure to cold have shown marked results from the use of galvanism to the affected side and faradism to the opposing muscles.

Swelling of the ankles like that seen in the second

case quoted above is not an uncommon symptom in corpulent people, without cardiac or renal troubles, and even without the rheumatic tendency evident in his case. In several cases of this nature, as well as in the troublesome cases of pain in the heels and soles of the feet caused by overuse, and which can hardly be classed either under rheumatism or neuritis, but which tax severely the patience of both physician and sufferer, I have been surprised at the degree of benefit obtained from the use of electricity, and in place of suggesting it as a last resort have become encouraged to recommend it in many of these cases with considerable confidence. In this class of cases the faradic seems fully as efficacious as the galvanic current, the explanation of which it would be premature to attempt in the present unsettled state of our knowledge regarding the effect of either current upon the organism. The thought would suggest itself, however, that counter-irritation and the modification of the superficial circulation play a great part in the cures effected by faradism, in contradistinction to the catalytic action of galvanism. Further investigation is desirable to aid in the classification of cases, and to permit more definite indications for the choice of currents, the object of this paper being rather to emphasize the practical advantages to be gained by this form of treatment than to discuss the theory of its action.

REPORT ON FOOD AND DRUGS, THEIR SOPHISTICATED AND ANALYSES.

BY B. F. DAVENPORT, M.D.

FRANCO-SWISS MILK FOOD.¹

COMPOSITION.

Water	4.16 per cent.
Fats	1.94 "
Milk sugar and grape sugar	9.70 "
Cane sugar	84.62 "
Starch	33.02 "
Soluble carbo-hydrates	46.85 "
Ash	1.43 "

Its agreeable flavor resembling cake is due to the milk solids, and the mode of preparing the cracker before powdering.

LEFLUND'S CREAM EMULSION.¹

COMPOSITION.

Water	24.32 per cent.
Fats	15.32 "
Soluble albuminoids	2.24 "
Insoluble	4.50 "
Maltose and lactose	43.16 "
Dextrine	6.27 "
Ash	2.60 "

Similar in appearance, smell and taste to butterfat, the advertised analysis agrees reasonably well with the above, which is unusual for any proprietary food. But what is more remarkable it has over twice as much butter fat as is claimed for it, while usually such preparations contain less than a fair whole milk would naturally yield. It does not dissolve readily in water, white curds separating and coming to the top. It is much too sweet to resemble cow's milk. Such an excess of saccharine matter is highly objectionable.

WELLS AND RICHARDSON'S LACTATED FOOD.¹

The name of this food conveys a false impression for it does not contain any milk.

The claim that it contains fifteen per cent. of malt diastase, retaining its full activity, is not sustained by the analysis, where no diastatic action upon the over

¹ Report of N. J. State Dairy Commissioners for 1887.

one-third part starch was found when the food was brought into solution. In the presence of so large an excess of alkali no such action is to be expected. Its albuminoids are derived from the gluten, etc., of the cereal, and not from milk.

COMPOSITION.

	As advertised.	As found.
Water	7.76	per ct.
Fat	1.64	"
Milk-sugar	25.00	per ct.
Malt-diastase	15.00	"
Soluble carbo-hydrates	41.67	39.00
Starch	"	36.43
Gluten and soluble albuminoids	16.35	"
Albuminoids	1.25	11.85
Potassium bicarbonate	0.25	"
Phosphates	0.48	"
Sodium chloride and other salts	"	2.61
Ash	100.00	"

MALTED MILK.²

COMPOSITION.

Water	2.18	per cent.
Fat	5.30	"
Albuminoid	16.88	"
Soluble carbo-hydrates	66.99	"
Starch	5.57	"
Malt-sugar and milk-sugar	50.40	"
Ash	3.13	"

This food differs from Nestle's and others like it in that most of the starch has been converted by malt diastase into maltose. The malt extract in the food as sold, has no diastatic activity. The claim that the caseine has been predigested by the diastase, that is converted into a soluble form, is not found to be true. The caseine in the "Malted Milk," is present with its properties no more changed than they are in Nestle's, the Anglo-Swiss, Carurick's Soluble Food, or other similar milk foods, prepared by evaporating down baked wheat powder with condensed milk. In all of these it is left behind as separate, hard, unchanged particles of caseine.

REED AND CARRICK'S LIQUID PEPTONOIDS.²

COMPOSITION.

Water	64.69	per cent.
Alcohol	15.136	"
Albuminoids	2.021	"
Fat	0.031	"
Carbo-hydrates, mostly sugars	17.666	"
Ash	0.359	"

This claims to be "concentrated beef and milk with gluten perfectly digested." It is a strongly alcoholic liquid of a light yellow color, with an alcoholic burning taste, and with a smell similar to that of many preparations of hair oil. It appears that the insidious introduction into the bed-room of an invalid, of a preparation claiming, as this does, to be of a highly nutritious character, and yet which is principally composed of alcohol, is a criminal act. There is nothing on the label to make him suppose that he is drinking something which is almost entirely sweetened alcohol. In communities where the sale of spirituous liquor is prohibited, this liquid peptonoids could supply in secret, a morning dram to every toper, under the guise of medicine.

RHUBARB.³

Chinese rhubarb may, according to Dr. Boni, be distinguished from the European by the amount of lime occurring in the ash. The former yields 20 to 25% ash, while the latter 8 to 9%. This difference being due to the amounts of calcium oxalate which they contained.

UNFERMENTED WINES.⁴

Mr. Millard reports on his examination of unfermented wines sold for sacramental purposes as free from alcohol, that where he found the alcohol absent, some preservative, such as salicylic acid was present. None of these were genuine, but rather merely adulterated and colored syrups. Cochineal or some other coloring was present in all.

PEPPER.⁵

Of late years, grain of paradise has become a frequent form of adulteration in powdered pepper. This may be detected not only with the aid of the microscope, but also from the presence of tannin which is not to be found in the genuine pepper. The powder treated with a mixture of alcohol and ether yields the tannin, which is shown by its reaction with tincture chloride of iron.

SWEET WINES.⁶

Considering the extensive use of such for medicinal purposes, the results of the analysis of American samples by the United States Agricultural Department, are of interest to physicians. They were, that but little of the pure juice of the grape entered into their composition, but that they were chiefly composed of alcohol, sugar and water, and partook more of the nature of a liquor than of a natural wine. The samples were of California, Sherry, Port, Burgundy, Muscatel and Angelica.

COGNAC PRODUCTION AND TRADE OF FRANCE.⁷

According to "Weinlaube," France yearly exports about 300,000 hectolitres of alcohol, while it imports 200,000 to 330,000. There is distilled from wine about 20,000 to 25,000 hectolitres of cognac, and about 6,000 more is imported, making altogether 26,000 to 31,000. There is, however, 150,000 to 160,000 hectolitres of so-called cognac exported annually, over 100,000, to England alone. One can judge from these figures what an immense quantity of artificial brandy is exported annually from France under the name of cognac.

PRIZE FOR THE DETECTION OF ADULTERATION.⁸

The Minister of Commerce in France has informed the Academy of Science that he is authorized to offer a prize of 50,000 francs to any one for the discovery of a simple and useful instrument for the detection of adulterations in wine and spirits.

CHAMPAGNE ADULTERATIONS.⁹

The perfection of adulteration is shown in the following circular sent out by a German wine dealer. "Our very large trade in champagne, enables us to offer you our cheap quality of champagne at 15.60 francs per dozen, inclusive of packing and shipping by way of Rotterdam or Antwerp. We wish to call your attention that we leave to you the selection of any labeling you desire, and beg that you allow us to send you a sample"—to leave thus to the purchaser the selection of the label, is to attain to the inimitable.

⁴ Pharm. Journ. and Trans., April, 1888.

⁵ Journ. der Pharm., Elias-Lothig, 1888.

⁶ U. S. Agricultural Department Bulletin, No. 13, part II, p. 368.

⁷ Zeitschrift f. Nahrungs-mittel, and Hygiene, Mai, 1888.

⁸ Revue Internationale des falsifications des Denrees Aliment, Mai, 1888.

⁹ Revue Intern. des falsification, etc., Mai, 1888.

¹ Report of N. J. State Dairy Commissioners for 1887.

² Pharm. Post, Jan. 22, p. 51.

THE NATIONAL FORMULARY.

A collection of unofficial preparations issued by authority of the American Pharmaceutical Association, 1888. This work is intended to include the more important of the large number of medicinal preparations which are more or less frequently prescribed by physicians, or demanded by the public, but which are not recognized in the United States Pharmacopœia, either because they were not deemed by the revisers to be of sufficient importance to be included in this official work or because they originated subsequently to the appearance of that work, or for other reasons. Owing to the absence of an authoritative standard, many of these unofficial preparations have been, and are being made after different formulae, and in varying strength, so that pharmacists, particularly in the larger cities, are compelled to procure and keep on hand a variety of brands of what is intended to be one and the same preparation, to satisfy the demands of their patrons, professional or otherwise. In compiling the work, the needs of all sections of our country have been consulted. The list even includes a small number of formulae in imitation of some of the popular nostrums of the present day, but constructed on rational principles for uniform composition and reliable effect, rather than for mere external appearance and taste. It is hoped that these will be used as directed to be used in place of the proprietary articles, the composition of which is generally kept secret.

As the mission the work is to fulfil can only be properly accomplished by the coöperation of the physicians, it is of the greatest importance that they make themselves acquainted with its object and contents, and that then they will consent to accept the preparations made in accordance with the formulae contained in it, instead of designating any special maker's product.

The list of formulae given in the work numbers 435, and includes 86 elixirs, 54 extracts, 41 liquors, 19 mixtures, 21 pills, 35 syrups, 33 tinctures, and 12 wines, besides the many lesser groups, and single members. In constructing the formulae of the compound preparations, it has been endeavored to make them as independent from each other as possible, so that only a comparative small number of what may be called basic preparations are needed. If these, numbering about a dozen, are kept in stock by the apothecary in reasonable quantities, most of the compound preparations contained in the formulary may be prepared in a short time.

Clinical Memorandum.

HALLUCINATIONS OF HEARING.

BY J. ALBAN KITE, M.D., NANTUCKET, MASS.

A CASE recently came under my care, presenting hallucinations so peculiar as to warrant their being recorded. Mr. E., the subject, is over eighty years of age, and, with the exception of deafness has retained his faculties to a remarkable extent (deafness $\frac{1}{2}$). Until the last few years he has led an active public life. Has been temperate in all things save mental activity. A few days prior to my seeing him, he was one evening startled by a loud rapping on the window. He arose to ascertain the cause, when the sound was repeated on the opposite window, and followed by a shrill, derisive laugh. His wife, on being questioned, assured him there had been no noise. On returning,

the same performance was repeated, save that there were two actors, a deep bass voice having come upon the scene, and a lively discussion was carried on between the two. The fourth night two female characters, or rather voices, presented themselves. The various events of the day were discussed in which all seemed to take a lively interest; but what seemed strange, their conversation was flavored with such laxity of speech, that Mr. E., although assured the condition was purely subjective, felt very uncomfortable with his wife sitting beside him.

These debates lasted for several evenings, and interested Mr. E. not a little. About 9 p. m., they adjourned, and did not again appear until the next evening, when reinforced by other members of the same troupe, they announced their presence by singing "Home, Sweet Home," without an error. This was followed by several solos; and the concert was kept up until after midnight. The number of these little creatures of his imagination increased from day to day as did the variety of their antics. They visited him in daylight; followed him in his walks; called to him from doorsteps, windows, and from behind trees.

Mr. E. never saw these creatures, but knew each by his or her voice. Those who first appeared never failed to pay him a visit during the day. Not one, however, assumed the voice of a friend. Under what, I trust, was appropriate treatment, although the number of voices remained the same, they had less and less to say, and more time elapsed between the visits, until I think the sixth day of treatment, all met in the evening, and after a quiet and peaceable gathering, dispersed, their exit being accompanied by a drum-corps: the latter, in Mr. E.'s own words, "seemed to beat a retreat."

Three weeks have elapsed with no return.

Mr. E. is perfectly sane. Has, so far as I have ascertained, no organic disease, save a slight cardiac valvular insufficiency, and the deafness which is due to lesions in both internal ears. He is in the best of spirits, but occasionally suffers from epistaxis, and, at night finds his ankle slightly swollen. Whether these hallucinations are the resultant of abnormal cerebral circulation and of irritation of already diseased aural ganglia or sensory nerves, I am ignorant. The treatment was with the bromides. Mr. E. has told me the substance if not the exact words, of conversations he has had with Daniel Webster, and can give last week's stock quotations as accurately as any financier. His opinion is often asked on various subjects, and results have shown his good judgment. I know of no one whose calm reasonableness is more to be depended upon, nor have I seen this latter condition departed from.

Reports of Societies.

BOSTON MEDICO-PSYCHOLOGICAL SOCIETY.

PHILIP COOMBS KNAPP, M.D., SECRETARY.

APRIL 19, 1888. DR. C. F. FOLSON in the chair.
DR. WALTER CHANNING read a paper

MASSACHUSETTS LUNACY LAWS.¹

DR. GEORGE F. JELLY said that he saw as much of the workings of the present lunacy laws as any mem-

¹ See page 97 of the Journal.

ber of the society, and he admitted that the laws had their defects. Commitment by the judge was less objectionable than if the judge had to see every case. He thought that that provision of the law protected the physician and the asylum superintendent, and that it was better that the judge should have the right to use his own discretion in the matter of seeing the patient, as thus there was less likelihood of abuse. Outside of Boston the judge sees most of the cases, but in Boston he sees only one-third to one-half. In some ways the New York laws are better, but while this provision is discretionary there is no special objection to it. The emergency law was probably intended to apply to those cases where no judge could be found, and it is a question whether it is legal to commit patients under it when the judge is accessible. He regarded the bond as a penalty, to be forfeited if the five-days' provision was not complied with.

DR. CHANNING said that the wording of the law was obscure on this point.

DR. JELLY said that in emergency commitments he signed the bond himself, regarding it as a penalty, and he thought that the physician could sign it. The clause requiring the signature of the mayor, alderman, or selectman, to an emergency application was too severe, but it was evaded in Boston by giving the Board of Public Institutions power to sign it by their clerk, who signed blank applications ahead for emergency use. These were accepted as legal by the Board of Lunacy and Charity. He thought that in ordinary commitments some judicial approval should be required, but there was no great danger of harm. It was unjust that no man connected with an asylum could sign. The reason why the public asylums have so few voluntary patients was not because patients refused to go on that basis, but because, in pauper cases, the towns objected to paying for board unless the patients were legally committed. He did not use to think that a lunacy commission was necessary, but he had now come to regard it as very important; a commissioner would revise the laws and report as to the necessity for changes.

DR. GEORGE T. TUTTLE said that he had supposed that the law intended that the judge should see every case, but that discretion was allowed in case it were likely to be injurious to the patient to have the judge see him. The judges who commit the fewest patients hold most strictly to the law. As papers from physicians out of the State are worthless, a number of the patients at the McLean Asylum have to be recommitted after they are brought there, so the judge holds court at the Asylum. If a patient is once there, however, the judge never has any scruples about committing him. The judge is very strict about not permitting any employee of the asylum to sign the application in such cases, but the signature of a saloon-keeper in Somerville will be accepted without question. He cited several absurd and questionable methods in which the emergency law was stretched in particular cases. He felt a security in commitment by a judge, and he regarded it as a protection to the asylum, especially in the case of a private asylum like the McLean. He liked the idea of regarding an asylum as a hospital and not as a prison. He agreed with Dr. Channing in regard to voluntary patients. They got many voluntary patients at Somerville, but only by a most liberal interpretation of the law. Many of these cases could be legally committed, so that their admission on

a voluntary basis is illegal. Before the patient signs the request, Dr. Tuttle always explains to him the workings of the law, pointing out that the three-days' notice is merely to give time for a legal commitment, so that, if he gives notice of a desire to leave before it is advisable, he will be legally committed and be obliged to stay. If the patient knows this it often settles the matter, and the subject of leaving is never broached. Patients who know that an attack of acute mania is impending often came in as voluntary patients, to be cared for during their attack, which is also illegal. The Board of Lunacy and Charity are notified when a voluntary patient is received, but they do not investigate for some time. They may read the statement sent with the notice, but they never make any medical investigation. The voluntary basis is a good one for the patient, but the letter of the law is not strictly followed.

DR. J. H. DENNY commended the appointment of a lunacy commission most heartily, especially with reference to the importance of its having the responsibility devolved upon it, of making the initial inquiries and determining what should be done, in cases reported to it, where no one is willing, or in position to take the requisite steps. In this way the numerous homicides due to insanity might be checked, in all probability, as to frequency, if some central authority should assume the responsibility that individuals shrink from in making due inquiry and taking prompt action.

DR. T. W. FISHER said that the laws in the different States varied greatly, from a jury trial in every case in Illinois to the unsworn certificate of two physicians in Rhode Island. He gave an instance of the laxity of laws in the latter State, in a case which occurred in his own practice. The Massachusetts laws were better, but still they were faulty, and were more severe than the English laws in forbidding asylum superintendents to sign certificates. He thought that the judge should decide in every case of commitment, but it was too much to ask him to see every case. The emergency law as modified works well, but it is little used except in Boston and at the Boston Lunatic Hospital. It should be retained with modifications. The bond and extra certificate are needless, and the mayor and alderman clause is a farce, for blank signed applications are always kept on file. The voluntary law as practiced is a good thing, and beneficial for the patient, but, if strictly construed, the asylums could hardly take a case under it. Poor patients are often committed because if they went as voluntary patients, the physician would get no fee. The Board of Lunacy and Charity are sticklers for the letter of the law, but if the papers are correct they take no further interest and they never make any proper medical inquiry into the condition of the patient. It was none too soon to discuss these laws, and he believed fully in the necessity of having a commissioner in insanity.

DR. J. B. AYER liked the present method of commitment, but the law could not expect the judge to see every case; still it was well for him to do so if the physician were unknown. It was wise to require three years' practice, although it was unfair in some few cases.

DR. H. R. STEDMAN thought that the paper threw light on the flagrant deficiencies of the laws, but there were many minor defects. One was the narrow limit allowed for a patient's visit at home. It would be wise, if the physician saw the patient in the meantime, to

permit the patient to be returned to the asylum at any time within a year without a new commitment. Thus the patient could have the advantages of home life for a longer period, and would be spared the expense of a new commitment. The boarding-out laws were also defective. All hinged, however, upon the lack of a medical commissioner.

DR. W. M. KNOWLTON thought it time to discuss the laws, although the Massachusetts laws are better than those of Connecticut, where the judge appoints only one man to examine the patient and sign the certificate.

DR. P. C. KNAPP believed fully in a revision of the laws and of the State and city boards. He had had occasion early in the winter to criticise the provisions of one of the recent enactments, but the only result was to call out a discourteous and irrelevant answer from an employee of the Board of Lunacy and Charity. He remembered that when he first committed a patient, although he was unknown to the judge, the commitment was made in the usual manner and the judge evinced no desire to see the patient. He saw no advantage and felt no relief from responsibility in a commitment by a judge. When he advised removal to an asylum he felt morally if not legally responsible for it, and the signature of a man who had never seen the patient and who knew nothing at all about insanity could do little to relieve that responsibility. In his brief asylum experience his method of informing the Board of Lunacy and Charity of the reception of a voluntary patient was by the bare formula, "A. B. has been admitted this day as a voluntary patient," without any statement as to the patient's condition. This was apparently accepted by the board, and no medical investigation was ever made. He believed fully in a commissioner or a board of commissioners in lunacy, or at least, that one or more alienists should be placed upon the present board. The present state of things—a State Board of Lunacy and Charity, without a single man on it or connected with it who was an expert alienist—was absurd and disgraceful.

DR. FISHER said that the judge is really responsible for the commitment, and he is the only person connected with the commitment who cannot be sued for infringement of the law.

DR. JELLY, in answer to Dr. Ayer, said that practically no one was ever sued in this State, but the physician might be sued for malpractice.

DR. C. F. FOLSOM said that laws were not the rules which were best for the community, but what the community demanded, and this was true of the lunacy laws. There was even now in the community a distrust of insane asylums. The clause forbidding asylum superintendents to sign certificates, was objected to at the hearing, but it was carried almost unanimously in the legislative committee. The laws can be criticised, but he knew of no respect in which by stretching them, they worked badly. The judge's share in the commitment he thought was a protection. If an attempt is made to revise the laws, may it not do harm by causing the passage of still more stringent laws? The voluntary law was of later origin, and was not passed as it was originally drawn. It included any one whether insane or not, but this provision was objected to and was stricken out. He doubted whether we could get the laws changed without getting more restrictions added. A lunacy commission

was very desirable, but it was impracticable, for the whole Board of Lunacy and Charity and the State officials objected; furthermore, if it were established, it would not be possible to get provision for over \$2,500 a year for the commissioner's salary, which was not enough to get a suitable man. In answer to Dr. Fisher he said that, for political reasons chiefly, very strong objections had been made to appointing an expert in insanity on the present Board of Lunacy and Charity.

DR. CHANNING, in answer to Dr. Folsom's criticism, said that he was of the opinion that there were serious defects in our laws, as had been generally testified to by those present, and he did not feel that because it might be difficult to change the laws on account of public opinion we should give up trying to improve them. No reform came without effort. He therefore moved that a committee be appointed to consider the advisability of preparing a revision of the existing laws, and of drawing up new laws establishing a commissioner in lunacy, to serve as a basis for future legislation.

This motion was carried and the following committee was appointed: Dr. T. W. Fisher, chairman, Dr. Walter Channing, Dr. George F. Jelly, Dr. C. F. Folsom, Dr. P. C. Knapp.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M.D., SECRETARY.

MARCH 26, 1888, DR. C. F. FOLSOM, President *pro. tem.*

DR. J. J. PUTNAM showed a case of

PERIPHERAL PARALYSIS FOLLOWING THE USE OF THE RUBBER TOURNIQUET.

He said: I asked this patient to come around principally because he exhibits in quite a marked way an interesting electrical reaction. It is not anything new to those who are accustomed to making electrical examinations, but it is rarely seen so well. He is one of two patients that I have seen within a comparatively short time, where a paralysis of considerable severity of the nerves of the arm has been caused by a rubber tourniquet; although the tourniquet was applied with every care and with great precaution. He is a patient of Dr. Porter, who, in operating on his hand, had occasion to use this apparatus. He had particularly in mind this accident, which had happened to another patient, and took especial care that it should not happen in this case. The injurious compression of nerves by a tourniquet is of course not unknown. It occurs from time to time, but as a matter of fact, I have rarely happened to see it with the old-fashioned tourniquet.

The point for which I asked the patient to come down is this: The tourniquet was applied at about the middle of the upper arm, and as a consequence he has complete paralysis of all the muscles below that point. When I say he has, I mean he had two or three days ago. For both these patients' improvement was so rapid that I will have to ask you to take on my authority the symptoms which they ought to show. He can slightly move the thumb, and very slightly the ends of the fingers. But he is practically paralyzed. In spite of this, the sensation is preserved over the

skin except to a very limited degree in the parts supplied by the radial nerve along the radial border of the index finger. Otherwise he is well. The nutrition of the muscles and nerves is also very well preserved. The muscles of the thumb show to a very slight degree the familiar degenerative reaction, indicating that the degenerative process has travelled down the nerve-fibre to the muscle, and that the latter has become the seat of a subacute inflammation.

The flexor muscles, however, do not show that, and they feel tolerably firm; so that a portion of the influences which are necessary for the life of the nerve are still permitted to travel through the injured portion. On the other hand, the voluntary impulse is not able to make its way through the part. Not only that, but the electrical stimulation is not able to make its way through. This is shown strikingly, and it is not often that one has an opportunity to examine so easily an arm in this condition. I will put the electrode in the right hand, and with the other follow up the course of the median nerve. The muscles contract until the point of injury is reached, and at that point and above it they fail to respond. At the point where the injury occurred the reaction ceases entirely.

I think the fact that sensation can travel through this injured part, and that the nerve can carry the influences for the preservation of the muscle, suggests some interesting speculations. It has seemed to me that it is perhaps a question of degree of impression, and that a very strong voluntary impulse could get through this part. A case occurred to me a few years ago which I think lends a certain support to that view. The patient had got his arm injured by sleeping on it, and had been treated a long time without gain. He belonged to a fire company, and at the time of the great fire in 1872, went out to serve with the engine, using all his force without thinking about it, and the result was that from that moment his arm began to improve, and recovered rapidly. It has occurred to me that it might be a good policy to advise patients to make strong efforts within certain limits, in the treatment of such paralyses.

CORTICAL APHASIA.

The other patient is one whose main symptom has to a great extent passed away. He is the subject of aphasia, and at the time when I first saw him, which was two or three weeks ago, it was a sensory aphasia to a considerable degree. At that time he spoke but very few words, but those he used correctly, but he did not understand what was said. When I asked him to shut his eyes or show his tongue, he did not do it. Now he understands almost everything. The case is complicated by the fact that the patient is a foreigner, and speaks only broken English, still, he used to talk with his fellow-workmen with ease, and must understand a good deal. He can read English, and speak English with comparative facility. He says that two weeks before New Years, while he was working, he had a sensation of a peculiar kind in the finger and thumb of the left hand, a kind of pricking sensation. This travelled like a sort of aura up the arm, and reached the face and went down the leg. It followed the regular course of the auræ in certain epileptic cases. This happened four or five times. Then the same thing occurred in the right arm, and then he lost his speech. There was a slight degree of right hemiplegia. Even at the present time the lines upon

the right side of the face are relatively obliterated. When he talks a very slight degree of facial paralysis is seen. The hemiplegia is now gone. He can walk about as well as ever.

He shows also a peculiar change in vision of the right eye. I wanted to discover whether he had any hemianopsia, and so I tried a method which was suggested to me by Dr. Gowers in London, and that was to see whether he would wink when the hand was moved before the eye one side, and not when moved in the field of the other side. I thought I found that he had hemianopsia, but Dr. Wadsworth examined him and found that the whole right eye was more or less insensitive. He had a sort of crossed amblyopia, and that I think still persists to a certain degree. The interesting thing is that although the sensory aphasias are by no means uncommon, forming a part of almost any aphasia, still sensory aphasia to the extent which this patient shows, I think is uncommon when combined with a motor aphasia, and yet not associated with more paralysis than in this case.

Here is another patient, who, a few days ago, presented a marked facial paralysis, which is undoubtedly cortical. It seems that this came on in the night. She felt a chill and pain in the right arm. Then this paralysis of the face came on. She could not at first speak a word. In a few hours she spoke a few words, and then she gradually improved, and is still improving. When I saw her first the lower facial muscles were entirely paralyzed on this side. Even now the masseter muscles contract with very different degrees of force. The left hand is not paralyzed, although she drops very heavy objects.

What she evidently had was the blockage of a little vessel not going to the aphasic region, but supplying, probably, the lower end of the ascending convolutions, where the ordinary motions of the mouth are represented. In the beginning, either from the effect of shock upon the neighboring parts, or oedema, or because the circulation in them, too, was in a measure impaired, there was first aphasia, which faded away, and the symptoms are now reduced to the facial paralysis; and even that is now fading away by reason of the re-establishment of the circulation on account of the anastomoses in the pia mater.

Dr. E. H. BRADFORD showed by card a specimen of

OSTEO-CHONDRO-SARCOMA OF THE LEG,

which he had removed from a young man twenty years of age. The tumor had existed for three years, and had grown to immense size. Dr. Whitney, who examined the specimen, had stated that it was of periosteal growth.

Dr. JOHN HOMANS said: It reminds me of a case I had of the thigh a year ago, where I amputated. The young man did well for about four months, then he had a recurrence inside the pelvis.

Dr. BRADFORD: I had a similar experience in an amputation of the hip for a sarcoma of the thigh. It was well for two months and then came back again. The disease in the specimen shown is below the knee and I amputated above the knee. I am in hopes that he will get on without recurrence. There is no enlargement of the glands.

(To be continued.)

—Talc has been found by Paris physicians effective in infantile diarrhoea, in doses of 20 to 30 grammes daily, in milk.

AMERICAN OPHTHALMOLOGICAL SOCIETY.¹

EVENING SESSION.

HYSTERICAL BLINDNESS IN THE MALE, WITH A REPORT OF THREE CASES,

by DR WILLIAM OLIVER MOORE, New York.

The average proportion of cases of hysteria in the male to hysteria in the female is one to fifteen.

CASE I. Male, aged twenty-five, farmer; family history good. During past two years had suffered with nervous symptoms. Did not smoke or drink. In June, 1886, complained of failing vision in left eye. When seen June 16th, according to patient's statement vision in left eye = 0; in right eye normal. Ophthalmoscope showed normal fundus except a slight patch of opaque nerve-fibre near the papilla. Testing with prism and candle gave double vision as did pressure on one eye-ball. The patient was informed that treatment by electricity would cure him in a few days. A severe faradic current was applied, causing the patient to jump from his chair exclaiming that there already was improvement. In ten days $V = \frac{20}{xx}$ emmetropic.

CASE II. Male, aged twenty-two, student and farmer, fine looking; history of insanity in the family. Eighteen months previous to coming under observation atropia had been instilled by a physician to determine whether or not glasses were required. He thought from the effect of the atropine that he was going blind. He then put on smoked glasses, subsequently bandages and kept in a dark room. He would not open the lids and declared that he was blind. For ten months he kept in a dark room with covering over the eyes. On examination the lids were closed but not by spasm; the corneæ clear. $V = 0$. Ophthalmoscopic examination under ether, normal fundus. Hysterical blindness was diagnosed, and a favorable prognosis given. Canthoplasty was then performed. Coming from the ether the patient opened his eyes and evidently saw clearly. He was told that the cause of the disease had been discovered and that he would be well in a few days. In two days he was walking around without glasses. Has remained well since.

CASE III. Boy, aged fifteen. Developed blindness in right eye after a disappointment at school. Normal appearance of eyes. Tests with prisms and colored glasses showed that vision was present. Ether was administered and patient assured that he would be well, and under electricity recovery was rapid.

DESCRIPTION OF A SERIES OF TESTS FOR THE DETECTION AND DETERMINATION OF SUB-NORMAL COLOR-PERCEPTION, (COLOR-BLINDNESS), DESIGNED FOR USE IN RAILWAY SERVICE,

by DR. CHARLES A. OLIVER, Philadelphia.

It is a well-known fact, both from theoretical and practical stand-points, that many "color-blinds," especially those of medium grades, have the power of differentiation even by day-light, of the most difficult colors when placed at ordinary metre distance of wool selection employed in the detection and determination of color-blindness. The writer has been induced through a hope to overcome the dangers that might arise from this power in situations such as railways, marine and naval service, where the safety of lives and the protection of property is oft-times solely de-

pendent upon proper recognition of color at great distances and frequently through the intervention of more or less translucent media, to combine two modifications of his method of color selection to a simplified plan of the former procedure by which the candidate is placed in the actual position of after-work and under exactly similar circumstances as during employment. The method is divided into three parts.

First, the selection and registry of a definite number of loose wools from twenty-three pure and confusion match skeins thrown upon a dead black surface at one metre distance.

Second, the selection and registry of the same number of similar reflected colors under various intensities of diffuse day-light stimulus, placed at distances requisite for safety.

Third, the selection and registry of transmitted colors under various intensities of artificial light stimulus placed at distances requisite for safety.

In addition to the advantages shown to refer to the first test alone, this method has the following additional ones:

- (1) Much faster in time than any other method.
- (2) The selection of loose wools at a distance. (3) No necessity for an expert except in doubtful cases.
- (4) Employment of the same character of signals for testing as is used in daily routine. (5) Placing the eye during testing at a distance necessary for future safety. (6) Bringing the eye during testing directly before the true condition of weather experienced as it is upon duty. (7) Test and match colors all graduated in proportionate size.

CASE OF EMBOLISM OF THE CENTRAL RETINAL ARTERY,

by DR. CHARLES A. OLIVER, Philadelphia.

The patient, a young man, was seen October 5, 1887. Twenty-six hours previously, while slowly walking in the shade, he was suddenly seized with blindness in the left eye. There were no other symptoms, and there had been no previous illness. The right eye was normal. Ophthalmoscopic examination of left eye showed clear media; nerve substance of a grey tint and swelling of the retina. All the retinal vessels were reduced in size. The veins were somewhat contracted, especially toward the nerve entrance. The characteristic cherry spot in the macular region was distinct. There was a small hemorrhage out from the disk. Careful physical examination failed to reveal any lesion in other parts of the body. The case was kept under observation for some time, but there was no return of vision, the patient remaining completely blind in the left eye.

DISCUSSION.

DR. H. D. NOYES, New York. The result of autopsies shows that the great majority of these cases are really due to thrombosis and not to embolism.

Adjourned until Thursday morning.

THURSDAY, SECOND DAY. MORNING SESSION.

A CASE OF DOUBLE CONGENITAL IRIDODEREMIA IN A CHILD WHOSE MOTHER EXHIBITED A CONGENITAL COLOBOOMA OF EACH IRIS,

by DR. SAMUEL THEOBALD, Baltimore.

James O., aged eighteen months, was seen December 9, 1887. His mother brought him on account of the red appearance which the pupils presented. Upon

¹ Concluded from page 99.

examination, besides a congenital squint of the left eye, complete absence of each iris was discovered. The lenses were clear, and there seemed to be at least in the right eye, fairly good vision. The interest of the case lies in the fact, accidentally discovered, that there existed in the mother a congenital coloboma of each iris. In her right eye the coloboma was large, its direction being directly upwards; in the left eye it was somewhat smaller and was in an upward and outward direction. In neither eye was the choroid involved in the congenital effect. The mother volunteered the statement that an older child had had a similar appearance of the eyes, so that it is probable that to this mother with congenital coloboma, there was born not only one, but two children, with absence of the irides.

DISCUSSION.

DR. DAVID WEBSTER, New York. I think that the direction of the coloboma in the mother's eyes was unusual. I have seen a number of cases of congenital coloboma of the irides, but I do not recall an instance in which the coloboma was upwards. It is almost always downwards.

DR. B. ALEX. RANDALL, Philadelphia. Having had occasion to look up the literature of this subject, I can say that there are a number of cases reported of coloboma inwards or outwards, but not upwards. This case seems to be unique in this respect.

PUNCTURE OF THE RETINA FOR DETACHMENT,

by DR. T. Y. SUTPHEN, of Newark, N. J.

The results of the three operations were reported.

A male, sixty-two years of age sought treatment, April 1, 1887, for a cloudy appearance before the right eye. This he had noticed only a few days. He was near-sighted but had never used glasses. Examination R. S. = $\frac{1}{10}$, raised to $\frac{1}{3}$ by $-\frac{1}{10}$. Field of vision defective downwards and towards the median line. Tension slightly diminished. L. S. = $\frac{1}{10}$, raised to $\frac{1}{3}$ by $-\frac{1}{10}$. Ophthalmoscope showed myopia with choroiditis in both eyes. In the right eye the retina was found detached in its upper and temporal portion. The patient refused to undergo vigorous treatment in bed. He was given iodide of potassium in gradually increasing doses, rest being enjoined.

Five months later the patient returned with commencing detachment in the upper and temporal portion of the left retina. He was then kept in bed for two weeks with the eyes bandaged, while profuse diaphoresis was frequently induced, but without benefit. He was then sent to the country, the iodide being continued. By December 1st there was in the right only perception of light; in the left there was vision confined to the outer and lower field. On this date puncture of the retina from beneath the detachment was made. Thorough antiseptics was employed; cocaine was instilled, a sickle-shaped needle was thrust into the globe between the insertion of the external and inferior recti muscles, on the equator and on a plane with the lens, it was pushed onward until it was thought that the retina had been pierced. It was then withdrawn with a sweeping motion, the object being to enlarge the opening in the retina. Atropine was instilled, the eyes bandaged and the patient ordered to keep quiet. The following day, the sub-retinal fluid had disappeared, field of vision was normal, a red reflex was obtained from the fundus in every direction and the patient could distinguish large objects.

Bandage reapplied. Two days later patient could count finger at twelve feet, the retina appeared in the normal position but the vitreous was quite cloudy. The vision continued steadily to improve. December 10th, a similar operation was performed on the left eye. Two days later there was marked enlargement of the field of vision, but some detachment was still to be seen on the temporal side. December 16, field of vision in both eyes normal. No detachment of retina in either. The patient remained in bed twenty-eight days. February 10th, detachment began to reappear in the left eye. By March 3d it was as great as before. Needling was again performed, with the escape of very little subretinal fluid. March 5th, field again normal. April 1st, partial return of detachment in left eye. July 6th, seven months after first operation, S. R. $\frac{1}{10}$, raised to $\frac{1}{3}$ by $-\frac{1}{10}$. No return of detachment. Field of vision normal. Blindness for red. In the left eye almost complete detachment of the retina.

After referring to the history of the operation the speaker said that the interesting facts were these: The apparently perfect safety of the operation under modern antiseptics; one success and two failures under exactly similar conditions, barring the escape of the fluid outwards in the successful case; encouragement to try this operation in otherwise incurable cases; the absolute freedom from all reaction. The best results will probably follow where the operation follows closely upon the subsidence of the acute affection causing the detachment. The chances of success are increased by a free flow of fluid outwards. It was suggested that a narrow Graefe knife might be used after accurately measuring the depth of the detachment, provided the point be so directed that the wound in the retina shall be directly opposite the scleral puncture.

DISCUSSION.

DR. J. F. NOYES, Detroit: I have tried operative procedure in only one case. I drew off the fluid with a hypodermic syringe. After drawing off the fluid the retina returned to its normal position, and in it the outline of a small tumor was discovered. The detachment soon returned. The ball was enucleated one year later.

A CASE OF GLIOMA,

by DR. E. P. CARRON, of Providence.

The patient was a child three and-a-half years of age. The growth was removed, but has since involved the submaxillary glands and the glands in the neighborhood of the ear.

Photographs showing the appearances were presented.

DISCUSSION.

DR. D. B. ST. JOHN, Hartford: I would ask whether aid in the diagnosis between glioma and other affections is obtained by attention to the state of the tension.

DR. DAVID WEBSTER, New York: I think that I have never been able to detect any increase of tension until the second or inflammatory stage has been reached. Then there is always, I think, increase of tension. In at least two cases I have diagnosed glioma from the history with the existence of increased tension, when no tumor could be discovered. There is now on record a case in which Dr. C. R. Agnew removed both eyes of a child one year of age for glioma. This was fifteen years ago, and the individ-

ual is still living. In this case the diagnosis was verified by microscopical examination. In some cases where the diagnosis was made but enucleation refused, the patients are still alive, and the disease has not progressed, retrograde metamorphosis having, it is said, taken place.

The President, Dr. W. F. NORRIS: My impression is that in true glioma, retrogressive metamorphosis does not take place. Fatty degeneration may occur in parts of the growth, but I am not aware of a case in which the growth entirely disappeared. Such cases are, I think, instances of mistaken diagnoses. The diagnosis is difficult unless the growth has reached such a size that the vessels may be seen in it.

MODELS EXHIBITING REFRACTION BY CYLINDERS,

by DR. SWAN M. BURNETT, Washington.

It was shown how the refraction and focal line change with the variation in the shape of the lens, and with the alteration of the angle of crossing of their axes. The models were made at his suggestion by Mr. C. E. Prentice, of New York. Diagrams were exhibited showing by geometrical construction how it was possible to tell the course of any given ray after its refraction by any two cylinders of differing power, and at any angle of crossing of their axes. A formula applicable to any axis of crossed cylinders, calculated by Mr. Prentice, was also shown.

Dr. B. ALEX. RANDALL, Philadelphia, exhibited some drawings showing

ANOMALOUS OUTGROWTHS UPON THE OPTIC DISC, and also drawings of

ANOMALIES OF THE RETINAL VESSELS.

DESIGNATION OF PRISMS BY THEIR REFRACTIVE POWER,

by Dr. EDWARD JACKSON, Philadelphia.

The author pointed out the inconveniences and errors arising under the present method of designating the strength of prisms, and recommended their designation by their refractive power as much more accurate. A Committee consisting of Dr. H. D. Noyes, Dr. Edward Jackson, and Dr. Swan M. Burnett was appointed to take the matter into consideration and report at the next meeting.

EXTRACTION OF A PARTIALLY ABSORBED CALCAREOUS LENS,

by Dr. DAVID WEBSTER, of New York.

March 15, 1888, C. C., aged twenty-three, consulted Dr. Agnew and the author at the Manhattan Eye and Ear Hospital. She had phthisis bulbi, left, and in the right eye were the calcified remains of a mostly absorbed lens, with a discolored, atrophic-looking iris attached to the membranous mass by numerous adhesions. Visual field good. V = fingers at two feet. The vision of the left eye had been lost through a blow with a whip at the age of two years. A catarrh developed in the right eye some time afterwards. Seven years ago (1881), her sight having been lost four months, both eyes were operated on by a surgeon in another city several times. Violent inflammation followed one or more operations on each of the eyes. Eighteen months ago another needling was done by another surgeon, by which sight was somewhat improved. The atrophic eye, of late, has been painful and tender on pressure.

March 16th. Dr. Agnew enucleated the atrophic eyeball. A calcific plate was found in the choroid, and a small calcareous lens. While the patient was still under ether, he did an iridectomy on the right eye.

April 27th. Dr. Webster divided with Knapp's knife-needle two or three of the adhesions which were on the stretch. At least, one could be heard to snap when cut. An attempt to penetrate the thinnest-looking portion of the membranous mass failed. There was considerable effusion of blood, which was soon absorbed.

May 14th. An attempt to remove the pupillary obstruction with a sharp hook failed. Very little reaction.

June 6th. With a keratome bent on the flat, a wound was made for iridectomy on the superior nasal corneal border. The pupillary obstruction was drawn out and cut off close to the cornea. Not a drop of vitreous escaped. There was some pain in the eye for three or four hours, probably the reaction from cocaine. Four days later pain again appeared, and was relieved by iced cloths.

June 18th. Fundus normal; no floating bodies in the vitreous, but the remaining portion of the pupillary membrane, which, by the way, was very thick and so tough that the iris-scissors would scarcely cut it, extends backward horizontally and flaps up and down with the movements of the eye.

June 22d. V = $\frac{3}{20}$, with $-\frac{3}{2}$. Reads Jaeger No. 1 with $+\frac{1}{2}$.

June 26th. Discharged, wearing the above spectacles.

Dr. SAMUEL THEOBALD, of Baltimore, exhibited an unusually long cilium. The hair was over an inch in length, and was removed from the eyelid of a young lady suffering with some conjunctival irritation. The other cilia were of the usual length.

The officers for the ensuing year are: President, Dr. W. F. Norris, Philadelphia; Vice-President, Dr. Hasket Derby, Boston; Corresponding Treasurer, Dr. J. S. Prout, Brooklyn; Recording Secretary, Dr. Samuel B. St. John, Hartford.

It was decided to hold a special meeting for the consideration of scientific matters only, September 19, 1888, at the Arlington Hotel, Washington, D. C.

The regular meeting will be held the third Wednesday in July, at the Pequot House, New London, Conn. Adjourned.

AMERICAN OTOLOGICAL SOCIETY.¹

A CONTRIBUTION TO THE ANATOMY OF THE ELEPHANT'S EAR,

by Dr. A. H. BUCK, of New York,

The ear was exhibited, and the interesting points indicated. The external auditory canal is imbedded in air-containing cells, and is six and one-half inches long. The canal at the time of examination, was filled with desquamated material. In the middle ear, the handle of the hammer seems to lie in a horizontal plane. It is not vertical, as in the human being. The anterior part of the drum cavity is completely cut off from the posterior part. The eustachian tube comes up through a system of air-cells, and opens through one of them close to the drum membrane. Under the

¹ Concluded from page 88.

floor of the tympanic cavity, there are three septa making stall-like spaces. Two of these are quite long, six or seven inches. The labyrinth and other parts were not examined.

A CASE OF POLYPOID ANGIOMA OF THE EAR,

by DR. HUNTINGTON RICHARDS, of New York.

The patient, a girl six years of age, came under observation May 4, 1888, with profuse and badly smelling otorrhœa, unaccompanied by pain and dating only from the preceding February. Hearing seemed good; no bleeding from the ear had ever been observed. The general health was excellent. Examination of the affected ear revealed a polypoid mass almost occluding the canal. The color was deep purplish red. A considerable portion of the tumor was at once removed with the snare, and the remainder of the growth was extracted on the following day, having a small pedicle attached, seemingly to the outer surface of the drum membrane close to the prominence formed by the short process of the hammer. This stump was cauterized with chromic acid. Hemorrhage from the cut surface of the growth was unusually profuse at both operations. The child's hearing is now excellent, although both membranes are depressed and of a dark grayish-red color. The removed growth was pronounced to be an angioma. Three micro-photographs showing the appearance of the growth were shown.

A CASE OF FALSE DRUM MEMBRANE.

by DR. HUNTINGTON RICHARDS, of New York.

The patient, a man twenty-one years of age, was totally deaf in the affected ear. There was a vague history of an attack of otitis media in early childhood. The other ear presented the common appearance of otitis media purulenta chronica. Examination of the ear that was not discharging showed a membrane occluding the canal. It differed from the normal drum membrane in color, shape, relation of its plane to the long axis of the canal, and apparent thickness. It varied little in color from the skin lining the canal. The surface was perfectly smooth.

A triangular opening was made through this membrane; This caused no pain. Through this opening it was seen that there was no drum membrane, but the inner wall of the tympanic cavity came into view. The hearing was only slightly improved. When seen a few days later, no discharge had appeared! Since that time he has not returned to the infirmary.

DISCUSSION.

DR. S. SEXTON, New York. I have seen several such cases as that described in the last paper. In a case seen last year, I removed the membrane, and then took out the malleus and incus. This case made a good recovery. The improvement in hearing was decided. I would suggest this operation, in such cases, as a possible means of improving the hearing, for it opens up the tympanic cavity which is a good condenser of sound; and in the second place to prevent the accidental occurrence of inflammation in these parts when it might be difficult to obtain relief.

DR. T. Y. SUTHER, Newark. I have seen one or two cases of this trouble, which seems to me to be due to cicatricial closure of the external canal. It seems to me that the condition would be best spoken of as cicatricial closure of this canal.

DR. CHAS. J. KIPP, Newark. These cases result from granulations and I have watched the formation of these membranes. In treating this condition, I have incised the membrane and put in laminaria bougies, and it has disappeared.

DR. A. MATTHEWSON, Brooklyn. A lady was under my care for some time with an eczematous condition of the external meatus. She then passed from observation. Some time later she presented herself with a dish-like closure of the external canal. This was not complete, as there was a small opening in the centre. I dilated this opening with laminaria bougies, and the ear was left in perfect condition.

DR. SAMUEL THEOBALD, Baltimore. The members may recall a case which I reported, in which there was occlusion of both external canals. There was a history of suppurative, and no doubt there was ulceration and gradual closure.

DR. CHARLES H. BURNETT, Philadelphia. I have seen several of these cases of dermoid diaphragms in the canal. Three of these were in private practice. One was in an old man, and it remained imperforate during the whole time he was under observation. The other cases were perforate when they came to me. There was slight discharge, which I checked, and the perforation healed. In one case the discharge returned after a short time, and the perforation reappeared. Under treatment, it healed; and I have reason to believe has remained closed since, a period of four or five years. In the other case it remained closed for a year, when the opening returned with slight discharge. The discharge ceased under treatment, the opening closed, and has remained closed.

DR. B. ALEX. RANDALL, Philadelphia. In the case of a boy twelve years old, in which there was closure of the meatus as a result of injury with forceps during labor, I excised the diaphragm; the cavity was thoroughly washed out; the case was then treated in the ordinary way. The hearing obtained was certainly one-fourth of the normal.

EVENING SESSION.

THE FLEXIBLE CATHETER AS A DRAINAGE-TUBE, WITH CASES,

by DR. J. B. EMERSON, of New York.

The author cited several cases exhibiting the use of the flexible catheter as a drainage-tube. With deeply-seated inflammation of the auditory canal or mastoid cells, maintenance of drainage through a fistula is a necessity; and to prevent closure of the fistula either by granular growth or natural healing is important.

Dr. Emerson recommends the use of the flexible catheter as generally the best means to employ, and states his reasons to be the comparative comfort and safety, together with convenience of control by both surgeon and patient. The efficiency observed in the use of the flexible catheter was also referred to.

DISCUSSION.

DR. O. D. POMEROY, New York. Some years ago I recommended the use of a soft rubber tube in suppurative otitis in little children with closure of the canal, with no changes except swelling. The canals are so small that the tube cannot be pushed in the ordinary manner. A piece of small tubing was hooked to the extremity of a metal probe which passed through it. The tube was then drawn tight thus reducing its size. In this way it could be readily introduced,

When the tube was released, it tended to resume its proper size, and the probe was withdrawn. Almost all these cases did well.

THREE CASES OF TRANSIENT BILATERAL HORIZONTAL NYSTAGMUS IN CONNECTION WITH PURULENT INFLAMMATION OF THE MIDDLE EAR,

by DR. CHARLES J. KIPP, Newark.

CASE I. A young man, twenty-one years of age, had had otorrhœa seven or eight years previously. Three months before coming under observation he had an acute exacerbation and suffered intensely with pain in the ear and head. The otorrhœa much diminished. Two or three weeks later he came stating that he saw objects double, was dizzy and could not walk. There was marked nystagmus in a horizontal direction. The vertigo and nystagmus continued four days. With the cessation of the nystagmus the vertigo disappeared.

CASE II. A young man treated six years previously for acute otitis media purulenta, ending in recovery, appeared in March with an acute attack. Paracentesis was performed. The pain, however, continued for a long time. Finally, swelling developed behind the mastoid, and this was accompanied with several epileptiform attacks. One day, pressing on the swelling pus poured from the canal. With this there was a sudden jerk of the head and nystagmus. The latter continued for about ten minutes; this was produced every time pressure was made on the mastoid. The mastoid was subsequently opened; since then there has been improvement.

CASE III. A young man, after exposure, was seized with intense pain in the ear followed by otorrhœa. When he came under observation there was great pain. This was not relieved by treatment but continued two or three weeks. Then a swelling appeared below the ear. This was incised and a large quantity of pus evacuated with relief to the pain. Some days later while washing out the cavity, the fluid came through the ear when considerable force was used. At the same time there was a jerk of the head and nystagmus continuing several minutes. This could always be produced by making a forcible injection.

DISCUSSION.

DR. O. D. POMEROY, New York. Reference has been made to epileptic symptoms in one of the cases. I have recently seen a case of epilepsy in which the exciting cause was suppurative of the middle ear. With recovery from the ear disease the convulsions ceased and have not returned.

AN IMPROVED AURAL SNARE,

was exhibited by DR. J. O. TANSLEY, of New York.

The snare was devised to overcome an objection to the ordinary Wild snare, that is, the little jerk and rebound of the instrument when the growth is cut through. The instrument exhibited consists of a small tube, through which the wire passes to be connected with a small bobbin by the turning of which it is gradually shortened.

A paper by DR. S. SEXTON, New York, on

FOREIGN BODIES IN THE EXTERNAL AUDITORY CANAL, was read by title.

EXECUTIVE SESSION.

The following officers were elected: *President*, Dr.

J. S. Prout, Brooklyn; *Vice-President*, Dr. Gorham Bacon, New York; *Secretary and Treasurer*, Dr. J. B. Vermyle, New Bedford, Mass. *Committee on Membership*, Drs. A. Mathewson, D. B. St. John Roosa, and John Green. *Delegate to the Congress of American Physicians and Surgeons*, Dr. W. H. Carmalt, New Haven; *Alternate*, Dr. G. Bacon, New York.

The Society then adjourned, to meet at the Arlington Hotel, Washington, D. C., Tuesday, September 18, 1883.

Recent Literature.

The Applied Anatomy of the Nervous System. By AMBROSE L. RANNEY, A.M., M.D. Second edition, rewritten, enlarged and profusely illustrated. New York: D. Appleton & Co. 1888.

As the author states in his preface, the success of the first edition of this book has induced him to prepare another which is practically a new work. The difficulties of the nervous system make its applied anatomy very welcome. The author brings much learning to his work and gives an excellent account of the central nervous system in what we may call the diagrammatic style. We are best pleased with the chapters on the brain. It is as clearly and simply treated as its complexity permits. We think there is but little of it that a good student with a fair knowledge of the coarser anatomy of the organ could not grasp. The author shows commendable prudence in the matter of accepting theories, but he may appear to some rather too free in giving the discordant views of different authorities. This is confusing to the student, but in the uncertainty that hangs over so much of this subject, it can hardly be avoided. The treatment of the nerves, especially the spinal nerves, is to our mind, rather less satisfactory. We will not say that there is too much of Hilton, whose views, if at times fantastic, are still fascinating and valuable, but there is too little of recent observations. The causes of the curious diversities of paralysis occasionally following division of some of the nerves of the forearm, require more extended discussion.

The book is profusely illustrated with figures of very unequal merit and appropriateness. There are beautiful plates showing cerebral localizations according to Horsley and Beevor. The diagrams are well-conceived and well-executed. Illustrations of minute anatomy seem out of place in a work of this kind. We can see no advantage in representing nerve-fibres, but if the author thinks otherwise he should at least give us something better than Kölliker's figure of thirty years ago, more or less, representing what we now know to be changed and distorted elements. The description of the figure of the separated brachial plexus from Sappey (p. 666), is incorrect. The musculo-cutaneous nerve is called the musculo-spiral, and the latter, from too close a following of the French idiom, is called the radial. This, however, is nothing to the blunders in the description of the plate on the next page. The median nerve is called the musculo-cutaneous, the ulnar the median, the musculo-cutaneous the musculo-spiral. The introduction of tests for astigmatism is, we think, irrelevant. The text is not free from error that moderate care would prevent. In the

chapter on the membranes of the brain the arachnoid is correctly described as a membrane between the dura and pia, and having the subdural and subarachnoid spaces on either side of it. We are told that "it is continuous with the membrane filling the same relative position in the spinal canal, known as the 'spinal arachnoid,'" but when we turn to the description of the latter we find, to our confusion, that it, "like all other serous membranes, consists of a closed sac with a cavity between its two layers." We regret these defects the more because we can heartily commend the book as a whole. It will, we are sure, be useful to both teachers and students.

T. D.

The Massage Case. By CYRIL BENNETT. London: S. Fisher Unwin. Boston: Cupples & Hurd.

This is the first novel that has come to our notice in which massage takes a prominent part. It is a very good story told with the simplicity and earnestness of truth, and probably part, if not all of it, is founded on fact. It is about a young lady worn out and sad from the illness and death of her mother, who, simply needed rest and change; but instead was sent by a managing aunt to a Nursing Home for imprisonment, in order to break up an injudicious love match. The patient quickly discovered that she was the only lady in the Home, and that she was being regaled with rather too much tobacco smoke, which proceeded from the rooms of other guests. The nurse was ordered to give her massage for two hours daily at first, and this was to be gradually increased to three hours daily. "It consisted of violent pinching from head to foot, and was a torture worthy only of the Spanish Inquisition." The administration of the electricity was no better. We need not go from home to find Nursing Homes and Private Hospitals of this kind.

There are some keen delineations of character in the book. The eminently successful practitioner, who overwhelms people with his powerful individuality, and compels them into saying and doing what he means them to say and do, is well described. So also is the highly appreciated old-fashioned nurse, who has become a little too knowing, and who freely expresses her opinion about massage, thus: "To begin with, it's very seldom done quite right. The doctors don't know how it ought to be done, and they depend on the nurses; and in nine cases out of ten the nurses have been taught badly, and it's the blind leading the blind." But what became of the patient? That is just how our readers can while away a few hours very pleasantly in finding out for themselves, during which they will not be bored with massage.

D. G.

—The increase of medical men in England from 1881 to 1886 was 1,908, being more than twice as many as the proportionate increase in population required. Yet in this increase, which is properly deplored by the profession, leaves our English brethren considerably better off than us. In 1881 there were 1,747 persons (that is possible patients) to each practitioner; in 1886, 1,662. In Sheffield there now are 2,593 persons to each practitioner; in Liverpool, 1,564; in Bristol, 1,232; in London, 939; while in Brighton, which is spoken of as a most unhappy place for a doctor, there 726 persons to each practitioner; about the same ratio, we believe, which obtains on the average throughout the United States.

THE BOSTON Medical and Surgical Journal.

THURSDAY, AUGUST 2, 1888.

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THE SURGICAL TREATMENT OF INTESTINAL OBSTRUCTION.

THE recent publication in full of Senn's experimental work¹ arouses anew the interest in this most serious class of cases. Encouraged by the success due to the modern method of dealing with gunshot wounds of the intestine, the writer determined to investigate the operative treatment of intestinal obstruction which constitutes, as he justly says, one of the darkest and most unsatisfactory chapters in the wide domain of abdominal surgery. His aim has been to devise if possible a method which should not only remove or render harmless the cause of the obstruction, but also by the same operation restore at once the continuity of the intestine.

For this purpose he has studied the subject in a most thorough manner. One hundred and fifty operations were performed on animals requiring a period of one and one-half years for their completion and the observation of their results. Not only were new operative procedures for the relief of intestinal obstruction thoroughly tested, but also the conditions resulting from the principal varieties of such affections. In this manner some very valuable data have been obtained, which in part confirm results of other observers, in part introduces methods and technique greatly increasing the possibility for relief of these cases. Most conspicuous among these results are: First: An improved method of uniting a resected intestine, which is a modification of the "Jobert" suture, if such a marked modification may be so described. Second: A method of relieving obstruction by forming anastomoses by means of "approximating plates." Third: The transplantation of omental flaps to render more certain the immediate union of intestinal wounds. These methods, according to Senn's experimental work, certainly do have decided advantages over the present method of uniting intestinal wounds by suture only, since they materially shorten the time required for such operations, a factor of the greatest

¹ Reprint. Ann. of Surg., 1888, January to June.

importance, and apparently increase the chances of immediate union, the failure to obtain which, usually costs the patient his life. They also avoid in a majority of cases the necessity of colotomy.

The interesting question of how extensively the intestine can be resected with safety, which Hahn² discussed some time since, and to the answer of which the cases of Kœberlé, Kocher and Baum contribute valuable data, has been investigated. In cases of multiple strictures, ulcerations, gunshot wounds or gangrene, where the lesions are large or in close proximity, excessive resection is unavoidable, and an accurate knowledge of the extent of intestine which can be removed with impunity, becomes of vital importance. It is not so much in regard to the immediate danger from so severe an operation, which is proportionate to the extent excised, but with reference to the remote risks from inanition resulting from the consequent impairment of digestion and absorption. In cats and dogs removal of more than one-half of the small intestine is dangerous to life. Excision of the entire colon invariably caused the death of the animal by shock due to the operation, and is, therefore, impracticable. These results coincide with Hahn's statement that loss of a large extent of small intestine is better tolerated than the resection of an equal amount of ileum and colon. It leaves unanswered the question as to whether the resection of a portion of the colon is more fatal than an equal amount of small intestine, except when the amount equals the entire colon, the removal of which was found to be invariably fatal.

The physiological exclusion of a certain portion of the intestinal tract is demonstrated to be a less dangerous operation than excision. This, in addition to the rapidity with which this can be accomplished, urge its employment rather than resection. It is especially of value where resection is impracticable, or where the pathological conditions which have caused the obstruction do not constitute *per se* an immediate or remote danger to life. An interesting and important fact in connection with these anastomoses is that the excluded portion of the intestine including the obstruction, does not become the seat of faecal accumulation, and Senn claims that peristaltic or anti-peristaltic action is effective in forcing back into the active current of intestinal circulation whatever portion of the intestinal contents may have entered this isolated tract. As soon as a free communication is established through the artificial opening a progressive atrophy of this occluded portion occurs.

The value and importance of Senn's method of anastomoses, which permits the restoration of the continuity of the intestine and enables the surgeon to avoid colotomy, an operation often attended by such deplorable results that many patients becoming objects of disgust to themselves and unendurable to their friends prefer death to such an existence, can be readily appreciated by one who has had to operate when the nature of the obstruction rendered its

removal impossible. Intestinal anastomoses furnish a means of escape from this distressing alternative, and only in inoperable cases of rectal cancer is immediate restoration of the continuity of the intestine contraindicated. It is especially desirable when an artificial anus for relief of obstruction in the upper part of the ileum or jejunum isolates so large an absorbing surface that the unfortunate victim dies from starvation. Gastro-enterostomy, jejuno-ileostomy, ileo-ileostomy, ileo-colostomy, ileo-rectostomy, colo-rectostomy, are terms which give some idea of the operations which this method of anastomoses by lateral apposition and approximation-plates renders possible.

Among the many facts obtained by Senn from his experimental work, the following are of especial importance:

Operations which reduce the lumen of the intestine to less than one-half its normal size cause danger from obstruction and perforation. Gangrene and perforation due to defective blood-supply invariably occur when the integrity of the mesenteric attachment is destroyed. Faecal accumulation above the seat of an invagination is one of the most important factors preventing spontaneous reduction, and causing gangrene with perforation. This gives, perhaps, an additional importance to gastric *lavage* as a means of removing such accumulations, and thus aiding reduction.

Ileo-cæcal invagination, when recent, is often reducible by distension of the colon with water, but the greatest gentleness should be used, since over-distension causes multiple longitudinal lacerations of the peritoneal coat, an accident from which the gravest consequences may ensue.

The omental "flap" or "graft" is a procedure which furnishes an additional protection against perforation in all cases of circular resections.

Intestinal anastomosis is preferable to resection or circular enterorrhaphy in all cases when it is impossible or impracticable to remove the cause of the obstruction; or where the obstruction, from its pathological character, is not an intrinsic source of danger. The method of lateral apposition with bone-plates should always be used in gastro-enterostomy, jejuno-ileostomy, and ileo-ileostomy. Obstruction in the colon and cæcum, and all cases of irreducible ileo-cæcal invagination, when gangrene or impending perforation does not contraindicate the procedure, should be relieved by the proposed method of anastomoses, or by lateral implantation of the ileum into the colon or rectum. Gangrene or perforation requires excision of the invaginated portion, followed by immediate closure of the resected ends with ileo-colostomy or ileo-rectostomy.

Lateral "appo-ition," or "implantation," permits the restoration of the canal where circular enterorrhaphy is impossible on account of the difference in size of the resected ends.

Searification of approximated peritoneal surfaces hastens the formation of adhesions and the healing of intestinal wounds.

² Berl. klin. Wochenschr., 1887, Bd. xxiv, 116.

THE MIND-CURE AND FAITH-CURE DELUSION.

REV. LEONARD WOOLSEY BACON, in a recent number of the *Forum*, discusses the "Mind-Cure" and the "Faith-Cure," and says some sensible things, for which he deserves the respect of all doctors.

The mind-cure, which, according to its leading representatives, is only a synonym for what is also called "Christian science," is, says Mr. Bacon, "an artless application to the subject of pain and disease of the well-known Berkelian argument for the non-existence of the material universe, or the argument which admits no refutation and produces no conviction." Since sickness and pain are only forms of consciousness, having no objective reality, what more obvious than that they should be treated as such? The seat of disease being the mind, let the mind be treated with mental influences, and not the body with drugs—admitting for a moment the popular prejudice that there are such things as drugs and bodies. This method of dealing with illusive diseases by an illusive treatment at the hands of an illusive practitioner has much to recommend it, if only it can be consistently carried out. But at one critical point it has constantly and conspicuously failed. The fee of the physician (or "metaphysician," as he delights to call himself), remains up to the present date a hard, metallic, refractory, and objective fact, which obstinately refuses to immaterialize itself. "Until the mind-cure makes this final and splendid advance, by which the doctor's bill shall be satisfied through his inward contemplation of ideal gold and greenbacks, its chief value must continue to lie in the popular protest which it makes against materialism by means of its funny books and its considerable number of devotees."

Concerning the "faith-cure," Rev. Mr. Bacon, from the standpoint of its advocates, presents a cogent argument to show that a flagrant error in exegesis has been committed, which vitiates the inferences which have legitimized this system of supernatural therapeutics. "It relies upon an alleged divine promise, which it claims to find in the epistle of James (Chap. v: 14), and consists in abstaining from medical advice and treatment of every sort, and in sending, instead, for the male and female practitioners of the 'cure,' who apply, instead, a sacramental 'anointing with oil,' together with prayer. It is claimed that the divine promise is express, clear, and unmistakable that the anointing and prayer shall be followed by the healing of the sick, although when this fails to follow, there is always some adequate explanation at hand to save the credit of the divine word. And it is further claimed that in the devotees of this system we have a shining example of primitive and apostolic piety, a childlike faith, an obedient following of the letter of the divine word, which puts the rationalizing half-belief of ordinary modern Christians to shame."

Mr. Bacon discusses this latter claim and the Scripture exegesis. The claim, he says, is not to be tolerated. It is quite without foundation. "Among

these high livers and 'faith-curers' there are some more or less intelligent people, and some not so good. As we meet them casually, we commonly find them pitifully bloated with spiritual self-conceit. Their childlike following of Scripture is apt to stand in a huge delight in their favorite scraps of the sacred text and their favorite blunders of interpretation. As a class, they are not one whit better than the plain, ordinary Christian who loves God and his neighbor, does his daily work faithfully, pays his debts a hundred cents to the dollar; and in point of humility and meekness and intelligent understanding of the Scriptures, they are decidedly worse."

In considering the interpretation of the famous text of the Epistle of James, Mr. Bacon shows: (1) That this verse does not inculcate or imply the instituting of a sacrament of religious unction for healing to be observed by all Christians; nor is there any allusion in the other apostolic writings to the practice of such a sacrament, nor is it recognized in the early Church after the Apostle's days. (2) The word *anointing* is sometimes spoken of in the New Testament in a secular sense, with reference to its cosmetic, antiseptic, hygienic, and medicinal uses. For this sense, a wholly secular word is used, which is never employed in a religious application; it is, says Mr. Bacon, a significant fact that this secular word is the one which we find in the text. The medicinal use of oil as an embrocation "was very common and important in the therapeutics of that age and region." The Good Samaritan, practicing the surgery of the period, poured oil and wine into his patient's wounds. Celsus, Pliny, Josephus, etc., mention oil baths and oil rubbings as an important part of the therapeutic applications of the times. (3) Having shown that the "anointing with oil," means simply resorting to the ordinary curative means of the day, Mr. Bacon discusses the meaning of "sending for the elders of the Church." This body of gifted men, he says, the leaders of the Christian brotherhood, included men endowed with talents fitting them to serve their fellow-believers, not only as leaders in worship and teaching, but also in more secular needs. These "gifts" were not necessarily miraculous. The catalogue of them in Corinthians (1 Cor., xii: 8-10), makes separate mention of the gift of miracles among other gifts which clearly were not miraculous. And a notable fact it is that the *gift of healing* is not included in the gift of miracle-working, but is mentioned separately with gifts of another kind. Among the talents bestowed for the good of the Church, was a talent for teaching, a talent for exhorting, a talent for managing affairs, a talent for comforting the sick and sorrowful, and a talent for treating diseases. There is not a particle of evidence that this last gift was any more miraculous than the others, and there is distinct evidence to the contrary." By considerations such as the above, Mr. Bacon shows that the text in James "begins to grow lucid in the light of the other Scriptures," and "congruous with the plain, hearty, divine-human, common-sense that is the

preëminent characteristic of this Epistle." Rightly understood, then, the text, instead of giving any encouragement for the founding of a "faith hospital," or the establishment of camp-meetings for "faith cures," is "the counsel of a wise spiritual leader, given apparently in a time of some prevailing epidemic, to the Church, that at the first outbreak of sickness in a family, instead of beginning on the case with a little amateur domestic practice, or with some simple prescription from the neighbors, or with the incantations of some heathen quack or 'medicine man,' they should at once send for the gifted and experienced professional physicians of the community, as well as for the spiritual counsellors and comforters."

The above interpretation of a much misunderstood and much perverted text, will pass for good Nineteenth Century Scripture.

LEPROSY IN THE SANDWICH ISLANDS.

THE leprosy of the Sandwich Islands is of especial interest to us in the United States because of our proximity to the Islands, and especially because the efforts of the Government to control the spread of the disease have a certain tendency to drive lepers to us to escape the isolation to which they would be condemned if they remained. The report of the Hawaiian Board of Health, just received, is devoted largely to questions connected with leprosy, and contains many interesting tables and statements concerning the disease and its progress. In the first place, the President of the Board states his conviction that the medical profession of the Islands are unanimous in the belief that leprosy is a communicable disease, and that every leper is a possible source of contagion to all who may come into more or less intimate contact with him. Leprosy was first clearly made out in the Islands about 1840. In 1868, the number of lepers was supposed to be 274. On March 31, 1888, the number of lepers at the leper settlement on Molokai was 749, 495 males and 254 females. The number of lepers still at large cannot be given with accuracy, but it is not over-estimating their number to put it at 644. No person is consigned to the leper settlement without his being declared to be a confirmed leper by, at least, three competent physicians.

The greatest obstacle to be overcome in carrying out the law of segregation lies in the fact that the Hawaiians themselves refuse to believe that leprosy is a communicable disease. Marriages between leprosy and non-leprosy individuals are freely contracted, and the most reprehensible intimacies are not prevented by patent evidences of the disease, and public sentiment does not support the executive in carrying out existing laws. One of the most embarrassing questions that the Board of Health is called upon to settle is who and how many of the relatives of the afflicted shall be allowed to accompany them to the leper settlement. It is necessary to retain at the leper settle-

ment a certain number of non-leprosy individuals for various services as helpers, and the number of applicants for such positions is largely in excess of the demand. In April last, a Commission visited the leper settlement and examined those on the list of lepers who thought themselves wrongly classified, and also those not on the list who were thought by themselves or others to be lepers. Of 66 helpers (kokus) examined by the Commission who had resided with the lepers for various lengths of time, and who, presumably, entered the settlement without the suspicion of leprosy in their bodies, 23 were found to present unmistakable signs of leprosy, and 11 more were designated as suspected lepers—a strong argument in the eyes of the Commission of the contagiousness of the disease.

Of the newspaper report as to the appearance of leprosy in a condemned criminal pardoned for the sake of experiment, no mention is made in the report.

The Board of Health is not satisfied with attempts to stamp out the disease by segregation, but is active in efforts to improve the condition of the lepers themselves. The methods of Unna are already in use in a special leper hospital, and the Board publishes a letter to Unna, in which they appeal to him for suggestions and assistance, asking him to receive patients to be sent to him at Hamburgh, or to suggest some one in his confidence who will put his services at the disposal of the Hawaiian Government.

MEDICAL NOTES.

—A new position at the Boston City Hospital has been created; namely, that of ophthalmic and aural interne. An examination of candidates for the term from September 1st next to January 1, 1889, is soon to be held. Candidates must send their names to Dr. E. J. Forster, at the Hospital, secretary of the staff, before August 8th.

—A full report of a lecture on personal identification, by Mr. Francis Galton, appears in *Nature* for June 21st and June 28th. Mr. Galton here presents a practical application of his favorite pursuit, the accurate description of physical and mental peculiarities. He proposes a very ingenious scale of divergencies from the normal for any one feature, and has even invented a mechanical device by which the tedious labor of arranging a large number of such observations can be much abbreviated. The anthropometrical laboratory, at which any one can, under proper restrictions, have a record made of his chief physical measurements, is now open in London, and promises to yield valuable material for this line of study. In connection with this work, Mr. Galton has studied the striations of the human fingers, and is able to corroborate the value attributed to them as a means of identification. These markings are easily obtained, and the variety of them is larger than one would *à priori* imagine. The markings of a finger of Sir William Herschell made in 1860 and 1888 respectively are figured, and show a striking similarity. The difference in age of the two

prints testifies to the wearing of the epidermis. The study is still in its infancy; but the success of such measurements for identifying criminals, as exhibited in France, promises to draw more general notice to the subject. — *Science*, July 27.

NEW YORK.

— The Hudson County Medical Association of New Jersey, which was recently formed to prevent the swindling of members of the profession by patients who are able to pay for attendance, but refuse to do so, met at Taylor's Hotel, Jersey City, on July 25th, and adopted a constitution. It provides for the employment of a collector, in whose hands all questionable bills are to be placed, and who will be allowed twenty-five per cent. on all such bills collected. He is to report those from whom collections cannot be made to the Board of Governors, and the members of the Association are to be warned by circular against trusting them.

— A young man, twenty-two years of age, recently died at the Presbyterian Hospital from hemorrhage resulting from the extraction of a molar in the right lower jaw.

— A special meeting of the Fifth District Branch of the New York State Medical Association was held at the Sherman House, Babylon, Long Island, on the 31st of July, when papers were read by Drs. J. G. Truax, of New York, William Govan, of Rockland County, and others.

Correspondence.

OVARIOTOMY IN AGE.

LONDON, ENG., July 9, 1888.

MR. EDITOR, — I have read Dr. Billings's letter on this subject with great interest. It will clear up a very old text-book error, and I will do my best to make known the results of his "examination of the original records" of the cases to which I referred. I must note, however, that, had I not written the letter which you kindly inserted in your journal of June 7th, the error would have been overlooked.

I entirely agree with Dr. Billings's remarks on the danger of second-hand quotations; yet a second-hand quotation is surely a record when it is to be found in the works of standard authors like Olshausen and Peaslee. In Dr. Homans's valuable contribution, published in your journal of May 3d, I find the words: "Dr. Lorini made a thorough search without finding any case recorded older than seventy-eight years of age." This sentence, written by Dr. Homans, is immediately followed by Dr. Lorini's letter, which refers to "the subject of ovariectomy in women of eighty years and over." The writer has "failed to find a single case recorded in any journal, pamphlet or book." Thus, in the above quotations there is nothing about original records, of which Dr. Billings speaks. Indeed, that distinguished surgeon admits that it was my letter which led to the "examination of the original records" of the cases to which I referred. Again, a false record is still a record; hence it is incorrect to imply that "not a single case" of ovariectomy in women of eighty years and over is "recorded in any journal, pamphlet or book." Hence, had I not written my letter, several important fallacies would have escaped detection. It led to "the examination of original records," and to a specific declaration from Dr. Billings as to the originality of the said records. Dr. Lorini's letter, as I have above shown, said nothing about originality.

Thus, there are records of ovariectomy in patients of eighty years and over, but these records are mostly second-hand and inaccurate. Drs. Billings and Lorini, however, undoubtedly overlooked Schröder's cases until my letter led to the examination of "original records." Why does Dr. Billings say "the authority is merely a footnote by Schröder in his 'Krankheiten der Weiblichen Geschlechts' (Leipzig, 1887, page 640), as follows: 'Ich selbst habe Kranke im 79 und 80 Jahre mit Glück operirt?'" Why merely? Surely we have here an "original record?" Is a footnote of this kind in an original work to be distrusted? There can be no suspicion of misprinted figures (such as led me into error in respect to Miner's case), for the note refers to this passage in the text: "Hohes Alter und Mangelhafter Kräftezustand contraindiciren einfachere Operationen nicht."

I admit my oversight regarding Atlee, and am much indebted to Drs. Billings and Lorini for correction as to the remarkable mistake "eighty-two" for "thirty-two," which I copied from a widely-read American publication. The credit due to Dr. Homans for his successful ovariectomy in a patient aged eighty-two, and to your journal for the "original record" of the case is incontestable.

I remain, dear sir, yours truly,

ALBAN DORAN.

PRIVATE MENTAL SANITARIA AND THE INEBRIETIES.

TO THE EDITOR, — The officers of the Massachusetts Medical Society, in whose hands the paper was by their requirement, caused or permitted to be published in your issue of the 21st ult. an abstract of a paper entitled "Private Mental Sanitaria and the Inebrieties," which paper was read and "discussed" before the recent anniversary meeting of that Society in Boston. The abstract was not shown to the author of the paper, nor was he informed that it was to be made or printed. Whether it was made by the known officers of the Society, by its "experts," or by this journal, does not appear. But the writer is unwilling that his views, as given in the paper in question, should be left with the medical public in the form of the incomplete skeleton that has been given out as above described — minus a vertebra or so and the phalanges indicis. The question really considered is one of some importance. The members who, by invitation of Society officers, spoke in the meeting just after the paper was read, have edited their (as delivered) unwritten remarks, while the author of the paper was not invited by the managers to close the discussion. It is probable, therefore, that the writer whose paper has had so ample an oblique light cast or thrust upon it, will not come into the court of this journal's equity quite outlawed when he solicits a little space. Your readers, it may for your sake be hoped, are a larger audience than that to which the paper was read.

The position taken by the paper regarded the following suggestion or claim: That in the coming legislation of Massachusetts, when it is expected and hoped by all that a special institution for inebriates will be decreed, and hoped that inebriates will be committable by judicial process to such, very desirable institution, that then the existing law which allows the commitment of the inebriate to the public and private lunatic hospitals of the state shall not be abrogated. If all our lunatic hospitals should not treat more than a dozen such patients in a twelve-month, after the new provision is made, let that dozen be committed by law. It is comparatively easy to manage, to treat, sometimes to cure, such cases, when committed. If not committed, and thus restrained under proper authority, system and method, they are perhaps the most difficult sort one has to control, and as hard to cure as a broken bone without a splint. The power, aid and sanction conferred by the commitment procedure ought not to be withdrawn from any who shall be entrusted with the duty, or given the permission, to treat the inebrieties. It may fairly be assumed that the public and private superintendents in lunacy are competent and trustworthy for

the responsibility in question, or, if not, can be put out of the way for cause. Let them not be emasculated while *locum tenentes*.

The importance of this simple and narrow contention will not be the less appreciated when it is known, what the writer is in a position to state, that those who drew the law now in force, whose continuance is herein contended for, did not intend by means of it to ordain the commitment of inebriates to the *private* lunatic hospitals of the State, but to prevent such commitment. The failure of this part of their purpose, through overruling judicial construction of their words has been the fortuitous means of great good to a number of sufferers from addictions already.

The paper narrated that cures of inebriety in its various forms had been attained in the lunatic institutions under the charge, respectively, of our illustrious fellow, Dr. Pliny Earle, and of the writer, one a state, and the other a private hospital. And it would seem that, if under auspices of personal eminence and skill, and other conditions so diverse and separated as these—like alpha and omega, top and bottom—success had been reached, then, through the whole alphabet of varying abilities in superintendents much good work might confidently be expected.

Institutions of all names and functions are but servants of the public weal. They do not exist for the sake of pleasing certain specialists, or to exploit their ideas. It does not follow that an inebriate should not be sent to a lunatic hospital because some one's views of classification will be offended, nor because the patient may tax the hospital officers. It may be that he prefers the lunatic institution of the two, and that he will behave better and gain faster there. If so, and if the superintendent is willing to

admit him, why should not the courts have discretion to commit him to a lunatic hospital, even after we have the institution for inebriates?

But it would be a signal injustice and burden to the private hospitals to deprive them of their right to treat inebriates as committed patients. To them are likely to go in the future, as have gone in the past, the superior grade of habitués, more or less willingly, who would not, short of sheer compulsion, enter the pan-Massachusetts inebriate pound. Indeed, the writer must admit that, if he were in need of succor from any addiction, he would, for all the inebriate asylum, prefer to be committed, for example, to the care of that veteran and able alienist, Dr. Merrick Bemis, if he would accept the duty; and like sentiments are very common, as shown by inquiry. These patients have some right of choice.

The private hospitals are entitled to a fair chance to support themselves, for they have no manner of aid in that direction; and, as said already, commitment is a powerful adjunct to the treatment anywhere. Nor should it be quite forgotten that the inebriate clientele of the private hospitals includes patients from other States and countries in considerable proportion. The laws of Massachusetts should enable its guest-receiving institutions to take the best possible care of its ailing commorant population, who have come within our borders for the sole purpose of recovering their health.

SHADY LAWN HOSPITAL,
17, July, 1888.

[The brief mention of Dr. Thompson's paper in the Report of the Society Meeting to which reference is made, was, of course, the work of the JOURNAL'S reporter.—ED.]

REPORTED MORTALITY FOR THE WEEK ENDING JULY 21, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	963	594	45.98	9.13	32.56	.88	4.51
Philadelphia	1,016,758	456	242	26.84	10.78	19.14	3.74	1.32
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	163	125	26.23	6.71	19.52	3.66	1.22
Baltimore	437,155	261	152	42.18	8.74	39.14	—	.76
Boston	407,024	178	81	25.20	14.08	18.48	1.68	3.92
Cincinnati	325,000	117	—	20.35	9.55	25.80	.85	—
New Orleans	248,000	133	51	25.80	11.10	10.36	—	2.22
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	118	69	35.28	10.06	28.56	2.52	—
Pittsburgh	210,000	86	53	48.72	3.48	37.12	1.16	4.64
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	23	13	39.15	17.40	30.45	—	—
Charleston	60,145	34	12	23.52	11.76	11.76	2.94	—
Portland	40,000	8	5	12.50	—	—	—	—
Worcester	76,328	29	16	34.48	3.45	31.05	—	—
Lowell	69,590	—	—	—	—	—	—	—
Cambridge	64,079	26	19	46.10	—	38.46	—	7.70
Fall River	61,203	52	35	53.76	7.68	50.60	3.94	—
Lynn	61,467	19	0	—	3.23	—	—	—
Lawrence	40,175	26	15	46.20	11.55	38.46	—	—
Springfield	39,952	31	15	48.45	9.69	35.53	—	12.62
New Bedford	36,298	9	7	44.44	11.11	44.44	—	—
Somerville	35,307	6	3	50.00	16.66	33.33	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	11	2	36.36	27.27	18.18	9.09	9.09
Chelsea	27,552	5	3	20.00	60.00	—	—	—
Haverhill	24,979	8	5	12.50	12.50	—	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	7	1	14.28	14.28	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	11	3	9.09	18.18	—	—	9.09
Malden	18,932	3	1	33.33	—	—	—	33.33
Fitchburg	17,534	5	5	40.00	—	—	—	—
Waltham	16,651	5	1	20.00	20.00	20.00	—	—
Newburyport	13,839	4	3	25.00	—	25.00	—	—
Northampton	13,419	6	3	16.66	16.66	16.66	—	—

Deaths reported 2,703; under five years of age 1,582; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 1,005, consumption 269, acute lung diseases 127, diarrhoeal diseases 757, diphtheria and croup 74, typhoid fever 42, whooping-cough 39, scarlet fever 26, malarial fever 23, measles 21, puerperal fever eight, cerebro-spinal meningitis seven, small-pox three. From whooping-cough, New York 21, New Orleans and Washington four each, Baltimore three, Philadelphia and Pittsburgh two each, St. Louis, Boston and Fitchburg one each. From scarlet fever New York 21, Pittsburgh two, Philadelphia, Portland and Fitchburg one each. From malarial fever, New Orleans eight, New York five, Philadelphia three, St. Louis and Nashville two each, Baltimore, Cincinnati and Charleston one each. From measles New York 16, Baltimore and Lawrence two each, Pittsburgh one. From puerperal fever, New York five, Philadelphia two, Washington one. From cerebro-spinal meningitis, New York two, Philadelphia, New Orleans, Worcester, Somerville and Brockton one each. From small-pox Philadelphia three.

In 23 cities and greater towns of Massachusetts with an estimated population of 1,055,396, the total death-rate for the week was 21.33 against 15.89 and 18.20 for the previous two weeks.

In the 28 greater towns of England and Wales with an estimated population of 9,398,278, for the week ending July 7th, the death-rate was 15.0. Deaths reported 2,710; infants under one year of age 689; diarrhoea 194, whooping-cough 63, diphtheria 33, measles 32, scarlet fever 25, fevers 21, small-pox (Preston seven, Bradford one) eight.

The death-rates ranged from 9.1 in Brighton to 22.2 in Preston; Birkenhead 11.5; Birmingham 15.4; Bradford 13.4; Hull 13.7; Leeds 13.3; Leicester 11.4; Liverpool 15.8; London 14.8; Manchester 21.0; Nottingham 9.9; Oldham 17.4; Sheffield 14.3; Sunderland 18.2.

In Edinburgh 16.9; Glasgow 18.9; Dublin 20.2.

The meteorological record for the week ending July 21, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barom- eter.	Thermometer.		Relative Humidity.		Direction of Wind.		Velocity of Wind.		State of Weather. ¹		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Saturday, July 21, 1888.													
Sunday, . . . 15	30.045	69.5	75.0	59.2	55.0	55.0	N.	S.E.	5	8	C.	O.	00
Monday, . . . 16	30.205	63.0	69.5	76.4	70.0	70.0	N.E.	S.E.	10	3	C.	F.	00
Tuesday, . . 17	30.270	6.0	65.0	65.5	61.0	61.0	W.	S.E.	12	8	C.	F.	00
Wednesday, . 18	30.255	66.0	61.0	65.0	61.0	61.0	S.E.	S.E.	7	6	O.	F.	00
Thursday, . . 19	30.120	67.0	68.5	67.5	75.0	75.0	W.	S.W.	8	10	O.	O.	0.10
Friday, . . . 20	30.025	70.0	71.5	70.5	70.0	70.0	S.W.	S.W.	8	13	F.	O.	7.33
Saturday, . . 21	30.140	68.0	72.0	70.0	76.0	76.0	W.	S.W.	8	16	F.	O.	00
Mean, the Week.	30.16		69.35	64.89		73.64							

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 27, 1888, TO AUGUST 3, 1888.

MAGRUDER, L. L., surgeon United States Army. Is granted one month leave of absence to take effect on or about August 13, 1888. Paragraph 11, S. O. 171, A. G. O., July 25, 1888.

VICKERY, RICHARD S., major and surgeon, United States Army. Leave of absence extended two months. S. O. 166, A. G. O., July 19, 1888.

WAITE, ROBERT H., surgeon United States Army. Is relieved from duty with Battalion 1st Infantry, at Santa Barbara, Cal., and will proceed to Angel Island, Cal., on public business; on the completion of which he will stand relieved from duty in this department. Paragraph 1, S. O. 43, Headquarters Department of California, July 17, 1888.

MYNN, CURTIS E., assistant surgeon United States Army. Will proceed to Santa Barbara, Cal., and report to commanding officer of the 1st Battalion of Infantry, for duty. Paragraph 3, S. O. 43, Headquarters Department of California, July 17, 1888.

JOHNSON, HENRY, captain and medical store-keeper United States Army. Leave of absence granted for one month and fourteen days, from August 1, 1888. S. O. 170, Headquarters of the Army, A. G. O., July 24, 1888.

JARVIS, N. S., assistant surgeon United States Army. Is granted one month leave of absence on surgeon's certificate of disability, with permission to go beyond the limits of the Department. By Paragraph 1, S. O. 90, Headquarters Department of the Missouri.

COCHRAN, JOHN J., assistant surgeon United States Army. Will proceed to Benicia Barracks, Cal., on public duty, on completion of which he will return to these Headquarters. Paragraph 1, S. O. 41, Headquarters Department of California, San Francisco, Cal., July 20, 1888.

ROBERTSON, REUBEN I., assistant surgeon United States Army. Is relieved from duty at Fort Keogh, Mont. T., and will report to the commanding officer at Fort Buford, Dak., for duty at that post, and by letter to the commanding general, Department of Dakota, S. O. 167, A. G. O., July 20, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING JULY 28, 1888.

PENROSE, THOMAS N., surgeon. Detached from Navy Yard, Boston.

PAKKER, J. B., surgeon. Ordered to the Navy Yard, Boston.

MCCORMICK, ALBERT McD. Commissioned assistant surgeon in the Navy.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING JULY 28, 1888.

MURRAY, R. D., surgeon. To proceed to Manatee, Fla., on special duty. July 21, 1888.

WASDIN, EUGENE, passed assistant surgeon. To proceed to Key West, Fla., for temporary duty. July 21, 1888.

FATTIG, J. B., assistant surgeon. To proceed to Memphis, Tenn., for temporary duty. July 29, 1888.

WOODWARD, R. M., assistant surgeon. When relieved, to proceed to Boston, Mass., for duty. July 24, 1888.

GOODWIN, H. T., assistant surgeon. When relieved, to proceed to Cincinnati, Ohio, for duty. July 24, 1888.

GUTERAS, G. M., assistant surgeon. Appointed an assistant surgeon July 23, 1888. Assigned to duty at Marine Hospital, New Orleans, La., July 24, 1888.

HUSSEY, S. H., assistant surgeon. Appointed an assistant surgeon July 23, 1888. Assigned to duty at Marine Hospital, Baltimore, Md., July 24, 1888.

BOOKS AND PAMPHLETS RECEIVED.

Report of the Committee upon Courses of Reading and Study on Works on Civil Government. Massachusetts Society for Promoting Good Citizenship. 1888.

Fourteenth Annual Announcement of the Medical Department, University of Tennessee, Nashville Medical College. 1888.

Original Articles.

CASES OF LAPAROTOMY FOR TUBERCULAR PERITONITIS.¹

BY A. T. CABOT, A.M., M.D.

Surgeon to the Massachusetts General and to the Boston Children's Hospital.

LAPAROTOMY for the cure of tubercular peritonitis is an operation the usefulness of which was discovered by accident, and it is one of the benefits for which we have to thank the ovariotomist.

In the year 1862, Spencer Wells, the Nestor of abdominal surgery, operating for what he believed to be an ovarian tumor, opened an encysted peritoneal effusion, and found the walls of the cavity and the surrounding peritoneum thickly studded with tubercles. Recognizing his mistake, he closed the abdomen after thoroughly removing the fluid, and the patient not only recovered from the operation, but was speedily relieved of all symptoms and evidences of tuberculosis, and lived for more than twenty years afterwards. The significance of this success was not understood at the time, but gradually there accumulated a series of similar accidental cases scattered through the literature of ovariotomy which finally arrested the attention of abdominal surgeons, and seemed to show that peritoneal tuberculosis is often, if not usually, a local process which, if taken in time, may frequently be arrested by an incision into the abdomen.

Besides the array of patients that demonstrate this fact clinically, Hirschfeld has observed a case thus operated upon which subsequently came to autopsy, and it was found that the tubercles had disappeared from the serous coat of the bowels where they had been seen to exist at the previous operation.

The following cases are reported as a contribution to the statistics of this operation, and the second of the two is interesting as being one of the first cases in which the diagnosis of tuberculosis was made before operation, and the incision was made in the hope of bringing the tuberculous process to a standstill. This child was the youngest patient upon whom the operation has as yet been done.

CASE I. Minnie B., colored, aged sixteen. Entered the Massachusetts General Hospital June 15, 1886. She was well as far as she knew till two weeks before entrance, when she noticed swelling of the legs. One week later the abdomen was perceptibly swollen, and she began to be troubled with dyspnea. Examination of the heart showed a soft systolic souffle at the apex. The urine examination was negative.

June 16th. The patient complained of much pain in the upper part of the abdomen, shooting up into the chest. She was greatly prostrated. From this time the abdomen swelled rapidly, and soon became very tense.

June 21st (three weeks from the appearance of the first symptoms of ill-health), Dr. W. L. Richardson tapped her to relieve the distension, and drew off something over three quarts of dark yellow fluid. At this time the abdomen when emptied was felt to contain some ill-defined irregular lumps. After this tapping a circumscribed tumor slowly made its appearance in the middle line below the umbilicus.

September 8th. I saw her for the first time in consultation with Dr. F. C. Shattuck, and found a uni-

locular collection of fluid rising out of the pelvic cavity into the abdomen as high as the umbilicus. Vaginal examination showed the pelvis pretty well filled by a mass pressing down into the posterior cul-de-sac, in which fluctuation could not be well made out.

Dr. Shattuck, from previous examinations, had thought the case to be one of tubercular peritonitis, but the development of a single cystic tumor, and the absence of any hardening in any other part of the abdomen made the appearance of things strongly suggest an ovarian cyst which had, in its early growth, been accompanied by ascites. I inclined to this view, and advised an exploratory operation.

The patient was transferred to my ward, and on September 17th, I operated with the usual incision midway between the pubes and umbilicus. It was found impossible to separate the peritoneum from the cyst wall, and an opening was made into the sac. The wall was fully three-quarters of an inch in thickness, and was found to be the greatly thickened peritoneum. A free opening was made, and three quarts of fluid and of a jelly-like material were removed. The cyst did not collapse when emptied, as its walls were everywhere attached to the surrounding parietes. The cavity was packed with iodoform gauze, and a tube was introduced into Douglas's pouch. Over this an antiseptic dressing was applied.

A considerable portion of the cyst wall which was removed was sent to Dr. W. W. Gannett for examination, and he found it filled with typical miliary tubercles.

The subsequent history of this case was that she promptly recovered from the operation, and slowly but surely gained health and strength. The interior of the sac suppurated, and for a long time the discharge was considerable. It slowly diminished, however, and on March 23, 1887 (six months after the operation), she left the hospital with still a discharging sinus, but otherwise in good condition. She went to friends in the Southern States, and was lost sight of.

CASE II. Clara T., three years old, entered the Children's Hospital July 25, 1887. There was no history of syphilis. Her mother died of phthisis when she was ten months old. A maternal aunt had also died of the same disease. The child was in the hospital in the winter of 1886 for debility from want of care since her mother's death, and was discharged well in six or eight weeks.

Six months before her second appearance at the hospital a diffused swelling of the abdomen was noticed, which increased slowly but steadily. Her bowels had been loose for about five months, and she had been troubled somewhat with otorrhoea and coryza. At the time of her entrance she was considerably emaciated.

Dr. H. C. Haven, in whose wards she then was, made a careful examination of the heart and lungs, with negative result. The urine showed nothing abnormal. The abdomen was much distended and very tense. It was dull upon percussion everywhere except over the highest point, where it was tympanitic. The cutaneous veins were not distended, and the liver was not appreciably enlarged. The circumference at the umbilicus was at this time twenty-three and one-half inches.

August 5th. I saw her with Dr. Haven, and coincided with his diagnosis of a probably tubercular

¹ Read before the Surgical Section of the Suffolk District Medical Society, March 7, 1888.

peritonitis. We tapped her and withdrew three pints of greenish-yellow fluid, thereby reducing her girth to twenty-one and one-half inches.

The fluid slowly reaccumulated, and on September 21st her abdomen measured twenty-four and one-half inches. Dr. T. M. Rotch now tapped her again, and withdrew three and a half pints of greenish andropy fluid.

This time the reaccumulation was even more rapid than before, and it seemed proper to resort to the more decided measure of an incision into the peritoneal cavity.

She was, therefore, transferred to my care, and on October 15th I opened the abdomen by an incision one inch and a half in length. The confirmation of the diagnosis was immediate and complete. Every portion of the peritoneum which could be reached was thickly studded with little round firm bodies projecting everywhere from its surface, and often hanging off with a slender pedicle. So abundant were these that the finger, when introduced into the abdomen, felt as if it were lying in a bag of small shot. The fluid, amounting to a little more than two quarts, was removed as thoroughly as possible, and a small bit of omentum with several tubercles attached was removed for examination. A little piece of rubber drainage-tube was introduced through the abdominal wall to provide for the escape of any fluid that might form in the next day or two, and the wound was closed about it. An antiseptic dressing was applied.

At the end of twenty-four hours it was found that no fluid was escaping through the tube, although a little leaked away around it. The tube was removed. Everything went well, and at the end of ten days the stitches were all removed, the wound being closed down to a granulating spot where the tube had lain.

November 3d (sixteen days after the operation), the child developed a sharp attack of bronchitis, which ran into broncho-pneumonia, and for a number of days she was dangerously ill, but slowly she got better, and in the course of the next month the lungs entirely cleared up, relieving us of the fear that tuberculosis might be developing itself there.

November 22d the wound broke down slightly, and presently discharged a small silk ligature, the one we had tied about the pedicle of the bit of omentum that was removed.

From this time the child steadily improved in flesh and strength, and regained the ruddy appearance of a healthy girl of her age. There was never any tendency to a return of the ascites, nor was there any hardness or tenderness to be detected in the abdomen.

The question as to how a simple incision into a peritoneal cavity filled with ascitic fluid, and studded with tubercles, works an arrest and apparent disappearance of the tubercular process is one of the hitherto unexplained enigmas of surgery. The observed facts are as yet too few to serve as the basis of any well-grounded theory on the subject.

Hirschfeld's observations show that the tubercles actually disappear from surfaces where they had been shown to exist, but we have not yet had the opportunity of sufficiently examining the conditions which accompany the cure of tubercular peritonitis.

In our endeavor to understand it, however, we should bear in mind certain characteristics of the tubercular process which are well observed in other

places. In local tuberculosis of the joints or bones we know that in certain cases the disease undergoes a spontaneous cure, or, at least, becomes quiescent, and does not again appear during the life of the individual. This process of retrogression is greatly favored by securing for the diseased part absolute rest and freedom from irritation, and by improving the nutrition of the patient through general measures, hygienic and medicinal.

When we get an opportunity to examine a joint which has suffered from tuberculosis and has recovered, we find the parts thickened and changed into fibrous tissue, with here and there cheesy or calcareous masses surrounded by a firm capsule. The process which has brought the tuberculosis to a standstill is analogous to that which we are familiar with around a cancerous growth. In each case the connective tissue around the morbid new growth is stimulated to increased activity, as is shown by the zone of new cells which surrounds both the tubercle and the cancer. These cells may finally develop into connective tissue fibres which surround and encapsulate the morbid new formation, and this fibrous tissue may finally, by its contraction, so press upon and interfere with the nutrition of the new growth as to lead to its death and disappearance by a process of fatty degeneration. This is the course of events so commonly observed in the scirrhus or hardening cancers, and also well illustrated in a tubercular process developing in the midst of connective tissue.

It rarely happens that the vigorous growth of a cancer is definitively arrested by this effort of the surrounding tissues; for while it is held in check in one direction, it extends itself in many others, and breaks through the comparatively feeble barriers thus opposed to its progress. In tuberculosis, however, we have a process of much less vitality, and which, occurring in younger subjects, is often successfully hemmed in and destroyed by the healthy tissues about it.

Now, in the case of a tuberculosis of a serous membrane, the morbid growth takes place under somewhat different conditions, especially when an effusion has distended the cavity. Here the tubercles form upon a surface from which they project. They are in contact with the healthy tissues on but one side. On the other they are bathed in a serous fluid which favors rather than hinders their growth. They often become pediculated, and hang off into the serum, almost detaching themselves from the membrane in which they originated. Under these circumstances it is easily seen that the tissues have but little chance to surround the tubercles by a zone of fibrous tissue, and so bring about their destruction.

Turning now to a consideration of the conditions under which a cure has been brought about by surgical interference, we find reports of cases in which simple tapping and drawing off the fluid has been followed by an apparent arrest of the disease. These cases are, however, very exceptional, and leave us in some doubt as to the correctness of the diagnosis. The more radical procedure of making an opening into the abdomen and thoroughly evacuating the ascitic fluid has been followed by a very much greater degree of success.

Some operators have sprinkled the abdominal cavity with iodoform; others have washed it out with corrosive sublimate solution, or with simple water; others again have used carbolic acid in an antiseptic

wash. All of these measures have been followed by about the same degree of success, and we are led to conclude that the special method of operating or of subsequent treatment of the wound or peritoneum is of no special importance, but that the one thing which is of importance is the thorough evacuation of the fluid, and it does not much matter how it is done, provided it is complete.

The difficulty of entirely removing an ascitic fluid through a canula seems sufficient to explain the rare occurrence of a cure after the imperfect evacuation of a simple tapping.

Dr. Van de Warker, in an interesting article in the *American Journal of Obstetrics* for September, 1887, points out two ways in which the accumulation of ascitic fluid may, perhaps, act to intensify the morbid process: first, through its mechanical irritation by pressure, or by some unexplained irritating quality in its constituents; and, secondly, by acting as a medium for the propagation and distribution of the tubercular germs.

Granting the effect that the effusion may have in assisting the spread of the process in either or both of these ways, we can see how the removal of the fluid might somewhat hinder the extension of the disease, but we still have to explain the effect that removing the effusion has in causing an actual disappearance of tubercles already existing.

Upon this point Dr. Van de Warker says: "The irritated peritoneum is given a rest and allows of a process that belongs *per se* to tuberculosis, namely, the thickening and induration of the surfaces—an encapsulation—and which, Hegar suggests, may be a stage in spontaneous cure."

It seems to me that this suggestion of Hegar's is of the greatest interest, and that it is probable that the rest afforded to the peritoneum is of importance in allowing it to set up its process of induration, and so to resist the advance of the tubercles, but we may go a step farther and appreciate another effect of the removal of the effusion which must, I think, play a very great part in bringing about the disappearance of the tubercular process.

As has been said, the tubercles upon the peritoneum are free upon one side, and frequently even hang off from the surface so as to be almost detached from it. Now, under these circumstances, the tissues have no opportunity to surround them with a zone of young cells, which shall become fibres, and so shut them in, encapsulate and destroy them. This condition exists as long as the abdomen is filled with fluid and the peritoneal surfaces are separated.

When, however, the fluid is wholly removed, and the peritoneal surfaces fall together and acquire adhesions, the tubercles are then shut in between the coils of intestine, the omentum and the abdominal wall. They are thus surrounded by tissues in a high degree of activity, which can now throw around them the limiting zone of young cells, and eventually fibrous tissue, which, if the tubercular process is not too far advanced, may effectually resist it, and cause it to retrograde.

Lastly, in regard to the method of operating. As has been said, the simple evacuation of the fluid is all that we have to accomplish, and the wound may then be closed as after any laparotomy.

In both of my cases I used a drainage-tube, but I shall not do so again. According to reported obser-

vations, even so large and thick-walled a cavity as existed in my first case may be safely sewed up, with good hopes of arresting the tubercular process, and by discarding the drainage-tube we avoid the formation of a fistula with the long suppuration, which was a troublesome feature in this case.

In the discussion which followed the reading of the above paper, Dr. ROTCH made the following remarks regarding Dr. Cabot's second case:

On taking charge of the medical wards of the hospital in September, I found in one of the beds this child, three years old, who has been presented to the inspection of the Society to-night, apparently well, and with no remains of the disease from which she was then suffering.

On physical examination, I could detect nothing abnormal in the chest: the abdomen was found to be uniformly distended with fluid. The child was losing in weight and appetite. There seemed to be no doubt but that it was a case of tubercular peritonitis; and, after observing the child for several days, I aspirated the abdomen, but did not succeed in completely emptying the abdominal cavity. The fluid quickly reaccumulated, and, from my experience with similar cases, I considered that the child would gradually grow weaker and die unless some radical procedure should be adopted. I, therefore, transferred the case to Dr. Cabot for operation.

I have nothing to add to Dr. Cabot's excellent review of the subject and his practical, common-sense remarks and suggestions as to the process of repair which takes place in the cases of recovery; but I wish to bear testimony to the confidence in antiseptic surgery displayed by Dr. Cabot in operating on this young child, the youngest laparotomy, as far as I can learn, which has been done for tubercular peritonitis, and which will mark a decided era in the treatment of the disease, for it hands it over from the domain of medicine to that of surgery. Any one who will recall the usual picture of children with tubercular peritonitis as they sit in our wards, treated with various drugs according to the fancy of the attending physician, and occasionally tapped for temporary relief from urgent mechanical symptoms,—in the large majority of cases, however, only waiting for the fatal issue,—will, I think, acknowledge that a great advance has been made towards saving life, and that great credit should be given to the surgeon who accomplishes such favorable results.

We may hear of occasional cases where tapping has produced a cure, but they are exceptional, as are the cases of empyema which are at times reported as being cured by one or two aspirations, the rule being that a free incision is the alternative to a fatal issue. And since the abdominal incision, under antiseptic precautions, is being more and more proved to be a harmless procedure, we certainly should not wait for further developments when our diagnosis is once made, and in waiting run the risk of the morbid process arriving at that period of growth where no treatment will be of any avail.

If the gentlemen here present could have seen this now healthy child as it appeared in my wards, losing ground every day, looked upon by me as a hopeless case, and, as I said before, merely waiting for death, they certainly would agree with me in at least designating the operation and its result as brilliant.

THE DETECTION OF MORPHINE IN THE URINE AS A MEANS OF DIAGNOSIS.¹

BY BENNETT F. DAVENPORT, M.D., BOSTON.

It has continued to this day a disputed question, in spite of the many exact accounts of instances when it had been done, whether the presence of morphine could actually be determined in the animal organism, and how far it could accurately be done. There has been two opposite opinions held upon the subject. According to the one, morphia, when once absorbed into the tissues, became decomposed, and could, therefore, no longer be determined as such, while the others held that it was excreted in the urine still undecomposed.

The first method for the determination of the morphine originated with Lassaigne in 1824. He, however, was enabled to detect but traces of it in the blood of horses into whose jugular vein he had injected it in large doses. Christison, in 1831, and Taylor in 1862, sought in vain to detect morphine. Clocka, in 1866, could detect no trace of morphine in the blood of one with the opium habit. Erdman, in 1862, failed to detect morphine in the urine of several rabbits that he had poisoned with morphia. Instances of such negative results could be very numerous mentioned. They are, however, opposed by the positive results obtained by Orfila in 1839, Gscheider in 1869, and notably by Kautzmann and Dragendorff in 1868. These last two were enabled by their method of examination to detect the presence of morphine in the urine of those who had been poisoned by it, every time, without exception. Landsberg, however, who reviewed their method, was not able to confirm their results, for he failed in the most of his cases, and Wislicenus was not more fortunate.

Burkart, who investigated this subject still later, 1882, made use of a method combining those of Dragendorff, Kautzmann, Landsberg, and Wislicenus. His results, obtained from excreted morphine and mixtures of urine and morphine of like amount, and both injected into rabbits, made it to appear probable that the uncertain results obtained by the last two were best to be explained by the theory that either but a part of the morphine absorbed was excreted unchanged, or else that, while it was not changed as to its character, its intensity of action as a poison was. He in many cases found that none of the alkaloid was excreted unchanged into the urine. In other cases but a trace, all the rest being so changed as to prevent the usual modes of detection.

Later, Marmé, who was confirmed by Warnecke, showed that some morphine did pass unchanged into the urine, and he later devised elaborate methods for demonstrating the presence of morphine in the various fluids and tissues of the body under all possible circumstances. In 1884, Dragendorff, assisted by Schneider, published his investigations concerning the correctness of Burkart's morphine decomposition product being obtained in the urine, and as to how large a portion of the morphine consumed by one having the opium habit was again excreted in the urine.

Dragendorff's method of separating morphine from the urine was as follows: The urine, without any concentration, is made slightly acid by a few drops of dilute sulphuric acid, and then shaken out with one-

fifth one-third its volume of amylac alcohol during five minutes. It is then set one side to separate as clear as possible. This way of shaking out with fresh amylac alcohol is repeated four to five times to remove as much of the urea as possible. The fluid is then made slightly alkaline with ammonia, and the morphine itself separated by being shaken out in hot amylac alcohol. This solution in the alcohol must be most carefully freed from any of the adhering urine by settling and filtration, so that upon its evaporation no droplets of watery fluid may be formed. Repeated washings of the alcoholic morphine with water cannot be used when there is but a trace of morphine present. By his method, he claims that 0.01 grm. morphine in 300 cc. urine can be well recovered.

Of the reactions for the determining of the presence of morphine in this urine extraction, the Fröhde, that is, concent. sulphuric acid containing molybdiun is the best, but it is not alone sufficient, as other alkaloidal substances give a similar red-violet coloration. Dragendorff denies the assertion of Burkart that pure morphine must give a blue-violet color with this reagent. Although pure morphine muriate does give the blue-violet color, yet this same salt, when recovered as a free alkaloid by the Dragendorff method out of a urine, will give a red-violet color. Therefore, Burkart, when from the urine of a morphine-eater he obtained an alkaloid that gave a blue-violet with Fröhde's reagent, ought to have doubted its being pure morphine, but he ought to have considered it as an unaltered morphine when it gave the red-violet reaction.

To Burkart's claim that the red-violet coloring material which he obtained from the urine of a morphine-eater was neither a decomposition product nor a urine compound of morphine, but an independent constituent of urine, and to his argument in support of this that he had obtained a beautiful red-violet color from the urine of a morphine-eater who had been taking it for ten days, Dragendorff replies that he has never been able to obtain from the urine of one who had not been taking morphine a constituent which either had an alkaloidal reaction or shared in the Fröhde's reaction of morphine. The blue reaction of iron chloride with morphine is of importance because that it separates morphine from all the other alkaloids which give a reaction with Fröhde's reagent similar to morphine. It is well known that the iron test requires certain special conditions: considerable purity of alkaloid, no excess of acid or reagent, and the alkaloid to be present in considerable quantity.

The experiments of Schneider confirmed the opinion of Hangmann and Marmé, that with doses of from 0.01 to 0.03 grm., morphine taken either by the mouth or under the skin, it could with certainty be discovered in the urine. His cases were those of an old woman, who had for fifteen years been a morphine-eater. At this time her doses were 0.24 to 0.36 acetate daily by the month. A student who was taking 0.48 grm. muriate daily, and a woman who was taking 0.024 grm. of the same daily subcutaneously. In all these cases positive results were obtained by the last-mentioned; that is, Fröhde's, the iron chloride, and also by the Husemann's reaction. A further evidence that the urine, after the use of morphine, contained that actual alkaloid, is the experiment of Burkart, who obtained from the twenty-four hours' urine of one using 1.3 to 1.55 grms. of morphine

¹ Read before the Boston Society for Medical Observation, May 7, 1888.

muriate a day an alkaloid which, injected subcutaneously into dogs and rabbits, developed the symptoms of severe morphine-poisoning. It has now been determined that from the urine of men and animals who have taken morphine either by the mouth or subcutaneously, an alkaloid can be obtained which has a crystalline form, a solubility of chemical reactions, and a physiological working like to morphine. The question whether it is actually unaltered morphine, or a decomposition product of the same, can only be answered when it has been obtained in a sufficient quantity and purity to make an ultimate elemental analysis of it possible, and for the determination of its other properties.

Among others, Scheibe and Eliassor, in 1882, have each proposed, as they claim, improvements in the Dragendorff method of separation, the former using an ethereal alcohol as his last solvent, and the latter acetic ether, with a previous precipitation of some of the constituents of the urine with lead acetate. In this last method, an intense gray or green-blue color is sometimes produced by the Fröhde's reagent, which he held to be a decomposition product of the morphine. Notta and Lugan have proposed a method similar to that of Eliassor, and he finds that the kidneys, when in their normal condition, excrete a portion of the morphine unchanged. Oxydi morphine is the name which Marmé and others have given to the form of morphine formed, as he claims, in the system in cases of chronic morphine-poisoning, and its reactions differ from morphine in certain particulars with the more generally used morphine reagents, all which he has set forth in his article, published in 1885, with most minute details. In this connection, it is of interest to note that a simple water solution of morphine seems to change partially in time into apomorphia, thus explaining, may be, the nausea, said to be more marked when such an old solution has been used. Furthermore, the possible influence of ptomaines upon the chemical reactions of morphine are to be considered in a medico-legal case where the sample of the alkaloid to be identified is obtained from the liver, for instance, and also from the urine after death. According to the researches of Hilger and Tamba, which were published in 1886, morphine in presence of ptomaines can be identified through its sugar and sulphuric acid reactions, whereby the violet color is sharply induced; further, also, by its like reaction with concentrated sulphuric acid on evaporation in the water-bath, with the later addition of hydrochloric acid, etc. Iodic acid may not be reduced by the morphine itself in the presence of more than a trace of ptomaine, for many ptomaines have of themselves a strong reducing action. All the other usual tests for morphine are not serviceable in the presence of ptomaines. They found, however, that boiling ether dissolved out the ptomaines from slightly acid solutions, especially if it had been evaporated upon gypsum. In this the morphine would remain undissolved. Also that in ethereal solutions of alkaloids and ptomaines, the addition of ether saturated with oxalic acid would, on long standing, precipitate out the alkaloid as a crystalline oxalate, while the ptomaine remained wholly in solution. Furthermore, Bonchard has determined that a healthy adult man produces upon an average in twenty-four hours enough urine poison to cause death in an animal weighing 46.5 % as much as himself, if it be injected into its circulation.

Dr. Harley, in his "Old Vegetable Neurotics," says that during the action of opium, so long as any hypnotic and anæsthetic influence remain, the excretions are retarded; but when simply hypnotic and stimulant, or when the person becomes habituated to its use, the secretions and excretions are abundant and free. Dr. Anstie, in his "Stimulants and Narcotics," conjectures that in fatal cases there may be a condition of hasty and profuse shedding of the epithelial cells, such as occurs in some forms of fever, and which is usually associated with diminished secretion. Dr. Edes, in his "Therapeutic Handbook," mentions the fact that in severe opium-poisoning the urine may contain albumen and casts. Professor Huseman, in his "Toxicologie," however, claims that there is simply a retention of urine in the bladder, due to diminished sensibility, rather than any diminished secretion, for the bladder is usually found to be distended in fatal cases; that a desire to void it has usually been felt, which could not be satisfied. Headland, in his "Action of Medicines," also asserts that opium scarcely, if at all, lessens the secretion of the urine.

The experiments of Dragendorff and Kaufman showed the following: In a cat which received into its stomach a dose of 0.183 grm. morph. sulph. dissolved in water, the urine passed ten minutes later did not yet contain any morphine. In a kitten, two hours after a subcutaneous injection of 0.03 grm., it was found in abundance. In a medium-size dog, four and a half hours after a stomach dose of 0.31, it was found in large quantities. After an injection of 0.135 in the thigh of a cat, the elimination was not yet completed after thirty-six hours. In a cat which received 0.03 in a gelatine capsule, it was fully complete in fifty-two hours. A large shepherd dog, after several large daily doses in capsules, in fifty-four hours after its last dose of 2.007, had no longer any in its urine. Later, after a dose of 2.48, it still had some at the end of eighty-four hours, but not at the end of ninety-four. A medium-size dog taking 0.31 in solution in stomach had it still in the urine at the end of forty hours, but that passed three times during the next twelve hours had none. The same dog, after a like dose, but subcutaneous, had no alkaloid in the urine at the end of fifty hours. A man who took one-sixth grm. had it in his urine during twelve hours, but not after that. Dr. Dragendorff found that the Fröhde's reagent would show its reaction in the presence of only 0.000,005 grm. alkaloid, the Huseman test with only 0.000,01, while the iron chloride test required not less than one part morphine in five thousand of the solution tested.

The possibility of being able to detect with certainty the presence of morphine in the urine of one who has taken the alkaloid in but the ordinary medicinal dose is of great practical utility in the detection of the opium habit, since, as is well known, the word of those addicted is not well to be relied upon in this particular; also in hospital practice for the detection of relapses in those who have been under treatment, but have so far recovered as to be trusted with some outside liberty.

I have recently had occasion to examine five samples of urine for Dr. Goldsmith, the Superintendent of the Butler Hospital at Providence. Two were from patients who were thought to be cured, and had been allowed to go outside before their final discharge. As morphine was found in neither of them, they were, therefore, discharged from the hospital. Another

was from a case which had been known to take one-half to one and one-half grains morphine daily for some time, but had omitted it for two days, had then taken one-half grain. Beginning thirty-six hours after this last dose, the next twenty-four hours' urine gave no reaction for morphine. The next two samples were from patients taking one-eighth of a grain three times daily. In each of these morphine was found. It is, of course, needless to say that the probability of the presence or absence of morphine was unknown before it was reported upon. These are simply examples of within what limits of time and dose I have been able to detect its presence in the urine secreted.

CLINICAL NOTES OF A CASE OF PERITYPHLITIS; LAPAROTOMY THIRTY-TWO HOURS AFTER THE BEGINNING OF THE ATTACK; DEATH ON THE THIRTY-EIGHTH DAY.¹

BY S. E. WYMAN, M.D. CAMBRIDGE, MASS.

It has seemed to me to be desirable to place upon record the following notes, as a contribution to the study of operative interference in cases of perityphlitis.

It need not be said that it is a matter of deep regret that the result should have been unfavorable, when everything seemed so auspicious at the time of the operation, which was not deferred until the patient's strength had been exhausted by protracted suffering. I have never answered to my own satisfaction the question, "Why must he have died?"

July 21, 1887. C. M. R., male, a native American, has never been strong; is fourteen years old. From the second to the eighth day of life "he vomited black stuff, as nearly like blood as could be." He began to grow fleshy when nine years old, and is now a pale, anæmic, fat boy, weighing at present 145 pounds. He has never cared to do as much running as his schoolfellows did; has suffered considerably from indigestion, and, during the past two years, has had several attacks very similar to the present one, having had three within the past four weeks. Yesterday ate watermelon and blackberries, and, at three o'clock, morning, was awakened with severe abdominal pain in umbilical and right iliac region. Present attack of pain very severe, causing him to scream and toss about; was treated by his parents by hot local applications until 7 A.M., at which time I saw him and obtained his history. The patient has vomited twice, small quantity, liquid contents of the stomach. Expression is anxious; abdominal tenderness great, especially in umbilical and right iliac region. No tympanites. Considerable dullness on percussion in right iliac region. Decubitus dorsal, with knees drawn up. Pulse, 96, temperature 98.4° (mouth). He was ordered morphia with belladonna sufficient to control pain, hot applications to the bowels, and liquid diet. Was seen at 10.45 A.M., when it was learned that the abdominal pain was greater and more general, and tympanites had begun to show itself. Has vomited once. Peristalsis not so active, and abdominal walls kept motionless during respiration. Pulse 90, temperature 98.6°. 3.15 P.M. Has been kept quiet, with almost no complaint of pain, and much less tenderness, by the morphia. His face is flushed. Pulse,

90-120, temperature 100° (mouth). Pupils not contracted. 7.12 P.M. Hourly administration of morphia has kept him free from pain and vomiting. Urine, scanty in amount, passed with some difficulty. No change in local symptoms. He has been inclined all day to lie on his right side, and twice has been found sleeping in this position, although he thinks it causes more tenderness in right iliac region. Pulse, 112, temperature, 100.8°.

July 22; 6.45 A.M. Passed a fairly comfortable night, and complained less of pain. There has been no vomiting; no defection; urine rather scanty; less abdominal tenderness generally, as well as in right iliac fossa. Pulse 108, temperature 99.6° (mouth). 10.45 A.M. Was seen in consultation by Drs. Marcy and Nelson, who concurred in the diagnosis, and advised operative interference. Ether was administered and laparotomy was performed by Dr. H. O. Marcy, whose notes I take the liberty of copying. The operation lasted more than ninety minutes.

"When under ether there was to be clearly outlined under the thick abdominal wall a firm resisting thickening in the right iliac quarter. An incision was made five inches long, through an inch or more of fat, and the muscles divided. The peritoneum was adherent over a space of about two inches to the omentum and surrounding parts, and the adhesions were separated with some difficulty and hemorrhage. The head of the colon, with the appendix, was imbedded in a thick, organized mass, and firmly adherent to the abdominal wall. The adhesions were broken up with much difficulty, and the hemorrhage was quite troublesome. The bleeding, adherent omentum was sewed through by the double stitch with catgut, and excised. The intestine above and below was found healthy. It was clearly determined that there was no suppuration about the appendix. The plastic mass was too firmly adherent and vascular to be safely removed except a small portion between the head of the colon and the abdominal wall. The bleeding points were secured and the wound closed, the peritoneum with a fine continuous animal suture, and the external wound under the mercuric bichloride solution irrigation."

He came out of his ether well, vomited at 2.30 P.M. Pulse, 132, temperature 98.4° (ax.).

R Is to have morphia by suppository, p. r. n.

9.30 P.M. Has vomited once or twice, and been made comfortable by morphia suppositories. Is fed by enemata of

Murdock's Liquid Food	3 ss.
Whiskey	3 ss.
Water, q. s.	once in four hours.

Pulse 126-133, temperature 98.4° (ax.), respiration 18. No urine passed.

July 23; 7 A.M. Good night. Urine passed twice. Moderate amount of morphia given. Tongue moist and clean. Pulse 128, regular, temperature 98.4°, respiration 18. 9.45 P.M. Has vomited four times. Urine passed once. Has complained of soreness in region of wound. No pain. Has been very thirsty. Pulse 126, temperature 101° (m.), respiration 20.

July 24th; 7.30 A.M. Required morphia once in three hours. Vomited three times during night. Passed quite a large amount of urine. Flatus per anum first time this morning. Decubitus dorsal, knees erect in the form of a tent. Hands and arms over his head. Pulse 120, temperature 99.2°, respiration 20.

¹ Read before the Middlesex South District Medical Society, January 18, 1888.

3.30 p. m. Has vomited four times. Great thirst. Little complaint of pain. Passes much flatus. Has begun to take soda water $\frac{1}{2}$ at a time. Seen by Dr. Marcy at 4.30 p. m. The dressing of the wound was removed down to the protective. Wound looks well. No redness. No discoloration. The veins at one and a half and two inches distant from the edges seem more prominent than elsewhere. No tenderness on moderate pressure in the vicinity of the wound.

R Seidlitz powder one-eighth, hourly.

9.30 p. m. Desire for a stool, and was on bed-pan at visit without accomplishing anything.

July 25th; fifth day; 7 a. m. Comfortable night. More sleep. Several ineffectual attempts at a stool. Flatus passed freely. Pulse 113-116, temperature 99.2°. 9.30 p. m. Has taken a small quantity of ice cream three times; vomited the last. Pulse 114, temperature 100°, respiration 18.

July 26th; sixth day; 7 a. m. Excellent night's sleep. Vomited once. Pulse 98, respiration 16, temperature 99°. 9.30 p. m. Has had a comfortable day. Vomited once. Pulse 95, respiration 18, temperature 99°.

July 27th; seventh day. Slept well.

R Elaterii pil., one-thirtieth grain once in two hours.

Vomited twice. Complaints of fulness in the whole alimentary track. Pulse 90, respiration 16, temperature 98.4°. Afternoon. Moves from side to side as if in health. No defecation. Vomited four times. Less discomfort in every way. Has required less morphia. Pulse 88, respiration 16, temperature 98.4°.

July 28th; eighth day; 7 a. m. Good night's sleep. Vomited once. Face flushed. Pulse 90, respiration 18, temperature 99°. Afternoon. Pill elaterii has been increased to gr. $\frac{1}{6}$ without procuring any stool. Dr. Marcy saw him this afternoon, and removed suture from the external wound, whose edges, with the exception of a short space at the inner and lower angle, were firmly united. Iodoform with wool externally. Pulse 105, respiration 16, temperature 99.5°.

July 29th; ninth day; 10 a. m. Vomited five times. No defecation. Two enemata of soap suds were returned discolored by Murdock's food. Pulse 103, temperature, 98.4°. Afternoon. No defecation. Pulse 104, temperature 98.4°.

July 30th; tenth day; 1.30 p. m. Pulse 66, temperature 98.4. 7.30 p. m. Pulse 78, temperature 98.4°. Vomited once.

July 31st; eleventh day; morning. Slept well. No defecation. Vomited once. Has taken spoonful doses of beef tea by mouth. Bowels flat. No pain. No tenderness. Pulse 76, temperature 99.6°. 5 p. m. Comfortable day. Enjoys small doses of blancmange with milk and sugar by mouth. Vomited three times. Slight fecal defecation after enema. Pulse 90, temperature 99.2°.

August 1st; twelfth day; morning. Excellent night's sleep, without any suppository. No pain. No vomiting. Pulse 78, temperature 98.2°. Afternoon. Comfortable. Had a large, well-formed, natural defecation at noon. Pulse 72, temperature 99°.

August 2d; thirteenth day; morning. Good night's sleep, without pain or vomiting. Has eaten some blancmange and a little soft-boiled egg. Natural defecation. Pulse 84, temperature 98.6°. After-

noon. Vomited four times contents of stomach. Pulse 84, temperature 98.4°.

August 3d; fourteenth day; morning. Good night's sleep, without pain. One suppository at 6 p. m. Pulse 70, temperature 98.3°. Afternoon. Perfectly comfortable. Defecation after enema at 2.30 p. m. Pulse 70, temperature 98.3°.

August 4th; fifteenth day. Comfortable. Wound is healing. Some thin bloody discharge flows from upper end of wound. Etherial solution of iodoform and collodion applied. Pulse 76, temperature 98.5°. Afternoon. Doing well, with the exception of a little fulness. Pulse 76, temperature 98.4°.

August 5th; sixteenth day; 10.30 a. m. Had a comfortable night's sleep. Pulse 82, temperature 98.1°. Afternoon. During the day some pain in the wound from which there has been quite a free discharge. Vomited once. Some headache. Some tympanites. Pulse 80, temperature 98.2°.

August 6th; seventeenth day; morning. Comfortable night. Complaints of some fulness. Pulse 82, temperature 98°. Afternoon. Comfortable day. No pain. No defecation.

R Nuc. Vomice. $\frac{1}{4}$ grain.

Hungry to-night. Pulse 72, temperature 99.2°.

August 7th; eighteenth day; morning. Slept well. No pain. No vomiting. Defecation at time of visit. Ate some soft oatmeal this morning. Pulse 80, temperature 98.4°.

August 8th; nineteenth day; morning. Best day since his illness. Three defecations, one at 4 p. m. and two this morning. Has good appetite. Pulse 70, temperature 98°.

August 9th; twentieth day; morning. Perfectly comfortable, without vomiting. Defecation yesterday afternoon. Marked appetite. Pulse 68, temperature 98.4°.

August 10th; twenty-first day; morning. Comfortable. Ate lamb with broth, baked potato, bread and oatmeal. Pulse 72, temperature 98.4°.

August 11th; twenty-second day; morning. Perfectly comfortable. Two large and well-formed defecations yesterday. Wound dry. Pulse 72, temperature 98.7°.

August 12th; twenty-third day; afternoon. Comfortable. Has been sitting up in bed nearly all the morning. Pulse 80, temperature 98.2°.

August 13th; twenty-fourth day. Good night. Appetite excellent. Sitting up eating his breakfast at time of visit. Wound is practically closed. No discharge. Pulse 96, temperature 98.4°.

August 14th; twenty-fifth day; afternoon. Has had a serious set back. Sat up nearly half the afternoon. At about 4 p. m., after enema, had a good defecation, and between 10-11 p. m. and 2-3 a. m. Complained of some pain in his bowels at 10 p. m., which grew very severe, and was located in epigastric and left iliac region. Vomited at about 12 o'clock, became quiet at about 2 o'clock, but vomited again at 3 a. m. Has taken suppositories, p. r. n. Vomited again this morning. Now has only soreness in left iliac and epigastric regions. No tympanites. Peristalsis not heard. Slight coating on the tongue. Was seen by Dr. Nichols, who reported, pulse 144, temperature 100.6°. Now, pulse 136, temperature 100.4°. Urine examined and found to be normal. 5.30 p. m. Has slept some. Vomited large quantity of bilious

matter, causing him to cough, and giving pain in left iliac region. Pulse 132-137, temperature 100.8°. 9.30 p. m. Slept for some time. No pain. No vomiting. Pulse 135, temperature 100.1°.

August 15th; twenty-sixth day; morning. Slept quite well. No vomiting. No defecation. Less soreness of the bowels. Some tenderness in left iliac region; none elsewhere. No tympanites. Peristalsis heard slightly. Pulse 132, temperature 100.2°. Afternoon. Has vomited four times during day. Less tenderness. Color good. Thirst less. Abdomen moves with respiration. Pulse 132, temperature 99.8°.

August 16th; twenty-seventh day; morning. Comfortable night, without vomiting or defecation. Complaints of soreness in left iliac region only when he moves. Pulse 112, temperature 98.8°. Afternoon. Comfortable, but has a full feeling. Pulse 109, temperature 99.4°.

August 17th; twenty-eighth day; morning. Comfortable. No pain. Vomited twice. Feels hungry. Face bright. Tongue clean. No tenderness. No tympanites. Pulse 99, temperature 99.1°. Afternoon. Comfortable in every way. Pulse 100, temperature 98.8°.

August 18th; twenty-ninth day; morning. Has vomited eight to ten times. Has slept since 12 o'clock. No pain. No defecation. Bowels soft. No tenderness except in right iliac fossa on deep pressure, where there is a little dullness on percussion. Pulse 99, temperature 98.6°. Afternoon. Has had an enema of epsom salts without any defecation. Looks pale and sick. Pulse 108, temperature 98.6°.

August 19th; thirtieth day; morning. No improvement. No defecation. Has vomited several times, and gagged many times without raising anything. Hiccoughed last night after vomiting. Pulse, 106, temperature 98°. Afternoon. Had a defecation after an enema at 11 a. m., and a small natural defecation at 3 p. m. Pulse 96, temperature 98.3°.

August 20th; thirty-first day; morning. Good night. Vomited a little several times. No pain. No defecation. There is still a little tumor in the right iliac region. Pulse 89, temperature 98.2°. Afternoon. Good defecation after an enema. Vomited a little. Has been sleeping for three hours.

August 23d; thirty-fourth day; morning. Has grown much worse since the 21st, when vomiting began at 11 a. m., and has continued ever since.

Owing to my own illness he was attended during the remaining days of his life by Drs. Nichols and Driver. The same symptoms continued until the close of the scene, the stomach refusing to retain any nourishment, notwithstanding all sorts of medication were tried.

He died on August 27th, the thirty-eighth day of his illness.

The autopsy was made by Drs. Driver, Whittemore and C. B. Wellington within twenty-four hours after death. Only the abdomen was opened. The peritoneum was normal everywhere, except for a little blush directly over the site of the wound made by the operation. There were a few very delicate adhesions of recent date passing from the wound to the cæcum, and the corner of the omentum bound the cæcum to a slight extent to the iliac fossa. On careful examination only a very rudimentary appendix vermiformis could be found. On opening the intestines the rectum

was found empty, the sigmoid flexure well marked, having almost a supplementary curve. At the junction of the transverse and ascending colon a small amount of fecal matter was found. In the cæcum itself a roundish mass of feces was found about the size of a pullet's egg; otherwise, everything was normal.

REPORT OF PROGRESS IN GYNECOLOGY,

BY F. H. DAVENPORT, M.D.,
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BICHLORIDE OF MERCURY IN CIRCUMUTERINE INFLAMMATIONS.

DR. H. N. VINEBERG¹ in a paper on this subject describes that class of cases where we find on examination some loss of mobility of the uterus, and to one or other side or behind a fullness or induration which is moderately sensitive. The ovaries are found apparently enlarged and extremely tender. On one side of the uterus, usually the left, an oblong irregular mass is not infrequently detected, which is commonly looked upon as a dilated tube, but which the author thinks is as often the sigmoid flexure. Among the many complaints the most prominent and constant is pelvic pain.

As regards the diagnosis of these cases, the author does not enter into the vexed question of the pathology but calls them chronic circumuterine inflammations, the root of the affection consisting of a diffuse or circumscribed effusion of inflammatory products into the various structures surrounding the uterus.

In not a few of these cases the ordinary methods of treatment, hot water and local applications are powerless to effect improvement. The author's attention was called to the value of the bichloride, by marked improvement following its administration in an aggravated case of this character, where the attending surgeon thought he detected evidence of syphilis. The evidence for its existence was very doubtful. It was therefore tried in over thirty cases of circumuterine inflammation of this character, the details of several of which are given in full. Most of them improve faster than similar cases treated under the old method. In those cases of pain in the pelvis where the cause was doubtful, the obscurity was to a certain extent cleared up by the use of this drug, as it usually failed to relieve it, unless dependent upon inflammatory exudation.

The following mixture was usually given :

Bichloride of mercury 1 grain.
Tincture of gentian 1 ounce.
Water to three ounces.

Dose, a teaspoonful in water, three times a day after meals.

The following are the conclusions :

(1) The use of the bichloride of mercury internally forms a valuable aid to the local treatment of circumuterine inflammations.

(2) In the doses necessary for its resolute effect, the drug may be given for several weeks without any untoward constitutional manifestations.

(3) In some cases where the inflammatory products are deeply situated within the pelvis, the internal use of the drug seems to be more efficacious than the most approved local treatment.

(4) A short course of the drug often serves as an

¹ New York Medical Journal, January 28, 1888.

important means for the differential diagnosis of the various obscure conditions which give rise to pelvic pain.

ELECTROLYSIS AND RAPID DILATATION IN THE TREATMENT OF STERILITY AND DYSMENORRHEA.

Try² claims for electricity a superiority over other methods of treating contractions of the cervical canal, which have as their prominent symptoms, sterility and dysmenorrhœa, on the following grounds: First. Its simplicity. No anæsthetics and no assistants are necessary. The treatment can be carried out at the physician's office. Second. Its safety. The electrode is made to travel the cervical canal slowly; it is arrested at the contracted portion until electrolytic action permits it to pass without the use of force. Third. The result is better. The immediate effect is favorable because the galvanic current is in itself a valuable therapeutic agent, and often suffices to cure attendant morbid states of the uterus. The ultimate result has been better in a few cases in which other methods had been previously tried. Time, however, is needed to establish this point.

The method of application is as follows:— With the patient in either the dorsal or semi-prone position, the cervix is *steadied* with a tenaculum. The direction of the cervical canal is explored with the sound. The positive electrode, consisting of a flat sponge about the size of the palm, is placed either over the fundus uteri, or over the lumbar region. The negative electrode is an insulated copper wire, with olive shaped tips of different sizes. One of these somewhat larger than the lumen of the strictured passage is passed gently into the canal, until it meets with the constriction when it is held in contact with it a few minutes until absorption removes the obstruction, and the electrode passes without forcible pressure. It is so carried slowly along the canal, and through the internal os. At the next treatment a larger olive is passed. The sittings should last from eight to fifteen or twenty minutes, and be repeated every five or seven days.

TREATMENT OF UTERINE FIBROIDS BY ELECTROLYSIS.

Dr. J. Knowsley Thornton,³ in a letter to the *British Medical Journal*, formulates his views on this subject. In substance they are as follows: He says the discussion is premature because fibro-myomata are uncertain in their habits of growth, and retrogression, the most surprising changes taking place in the course of a few months if left to themselves; still more commonly if the patients are carefully handled as to diet, alcohol, rest at the periods, and special medicines. He thinks that nothing which has yet been published by Apostoli or his followers is inconsistent with such natural changes, aided by the effect on the nervous system of confident hope of cure. An interval of health for at least twelve months after treatment is necessary to prove a cure. He says we do not yet appreciate the dangers of the method and urges the profession to wait patiently for definite results. [As Dr. Thornton prefaces these criticisms by saying that he has never tried the method, and being a surgeon (!) does not intend to, as he thinks it may more properly be left to the obstetric physician, their value is distinctly impaired.— Rep.]

TREATMENT OF PROLAPSE OF THE UTERUS BY GYMNASICS OF THE PELVIC MUSCLES.

Prof. F. von Preusschen⁴ describes a case in which he accomplished the cure of a severe case of procidentia solely by means of the method proposed by Brandt, of Stockholm, in 1868. This method consists in the following manipulations: First, the patient is placed in the lithotomy position; the operator standing on the left side of the patient, presses both hands deeply into the lower part of the abdomen while an assistant with his finger in the vagina holds the uterus in a position of anteversion. The uterine and its appendages are seized as well as possible by the operator who forcibly pushes the organ towards the umbilicus. It is then allowed to slowly fall back. The finger of the assistant follows these movements, and by pressure on the cervix prevents the uterus from becoming retroverted. This manipulation is repeated three times in each sitting. Second, with the patient in the same position the knees and ankles are brought close together, and the patient is directed to resist an attempt to separate them. When they are separated, the reverse is done: namely, the patient tries to keep them apart, while the operator presses them together. This exercises the adductors. Third, a series of tapping movements is carried out on the lumbar and sacral regions.

The patient whose history is given had suffered from procidentia for thirty-one years. The only relief had been from the use of pessaries with external attachment. From the first day of treatment the uterus remained in the pelvis, and at the time of the report of the case there had been no prolapse for three months and a half.

The author is of the opinion that the second procedure, the exercise of the adductors is the most important factor in the treatment, though Brandt attaches but secondary importance to that and to the third. Preusschen considers the raising of the uterus of value in correcting the retroversion, and in separating adhesions between uterus and bladder, but not in strengthening the pelvic muscles. The forced movements of the thighs however, cause the whole muscular floor of the pelvis, especially the levator ani, to contract. This contraction can be made more pronounced by telling the patient at the same time to raise the buttocks from the table. In this way the lax muscles regain their tone, they restore the proper support to the cervix, and narrow the opening for the vagina in the pelvic floor.

TREATMENT OF INOPERABLE CANCER OF THE UTERUS.

J. Schramm⁵ declares himself dissatisfied with any of the usual methods. These are: (1) Curetting the diseased portions, and the application of the canter. (2) The dry method of Sanger, curetting followed by the use of iodoform gauze. (3) Alcohol followed by or without bromine. (4) Painting the ulcerated surface with strong carbofic acid. (5) Washing out with condurango, or use of condurango salve.

Schramm recommends the injection of antiseptic fluids into the diseased tissues. He uses the following formula:

R	Hydragr.	Bichloridi Corros.	0.25
	Natrli. Chlorati	2.50	
	Aque	60.00	

About two grammes of this is injected into the can-

² American Journal of Obstetrics.

³ British Med. Journal, March 24, 1888.

⁴ Centralblatt für Gyn., No. 13, 1888.

⁵ Cent. für Gyn. No. 13, 1888.

cerous mass two or three times a week. The results are a clearing of the ulcerated surface, cessation of the foul discharge, and a marked retardation of the process. The general health improves, and hemorrhages are less frequent.

CHRONIC PYELITIS.

Dr. N. Bozeman⁶ describes a most interesting case of chronic pyelitis treated in an entirely novel manner. The patient, thirty-four years old, had for three years been suffering with a constantly increasing pain in the right lumbar region. This pain was variable in character, and aggravated by exercise. It was sometimes acute and sometimes dull. For two and a half years there had been blood present in the urine in varying amounts. Her general health was much depreciated, and she had lost flesh and strength. Within a few months she had had a severe illness confining her to bed for six weeks, during which she suffered from partial suppression of urine, severe paroxysms of pain, nausea, vomiting and high fever, and had found two calculi in the urine. Examination of the urine showed an acid reaction, albumen, and a sediment of blood and pus. The uterus was large, retroverted, and slightly prolapsed.

Two attempts to catheterize the ureter through the urethra failed. An opening was therefore made into the bladder, under ether, an inch and a quarter below the cervix uteri, and three-quarters of an inch to the right of the median line, sufficiently large to admit the index finger. The edges were stitched with a continuous catgut suture. A No. 8 French, olive-tipped catheter was then passed into the ureter, and entered the pelvis of the kidney without meeting any obstruction. Injections of warm water were then made, a drachm at a time being forced in, and then allowed to escape. The next day a drainage instrument devised by Dr. Bozeman, was introduced into the vagina to conduct the urine away as it came from the fistula, thus preventing its running over the mucous membrane and external genitals. This instrument is essentially a hollow, hard-rubber drain, which is shaped to fit the vagina and is connected by a soft rubber tube, with a bag or urinal attached to the thigh, near the knee. Its upper surface is grooved and perforated with a number of small openings into the hollow interior, one or more of which come in apposition with the fistula. The vaginal mucous membrane clings so closely to it, that the urine finds no other channel of escape. With this instrument all the urine was collected when the patient was sitting or standing; a little was lost when she was lying down, but not enough to cause discomfort. It also acted as a pessary to raise and antevert the uterus.

Ten days after the formation of the fistula, systematic treatment of the pyelitis was begun. Every day a flexible olive-tipped catheter was passed into the ureter, and the pelvis of the kidney was irrigated with a warm solution of bichloride of mercury, 1 to 20,000. The patient's sensations were the guide to the quantity, a dull and characteristic pain being felt when the pelvis was distended. At first the capacity of the pelvis was twenty-one drachms, but was at last reduced to five drachms, which Dr. Bozeman believes to be about normal.

Under this treatment, the pus and blood diminished and at the end of three weeks the urine was clear, and

deposited no sediment. At the end of six weeks urine collected from each kidney separately, showed that the pelvis of the diseased kidney had returned to its normal condition, and treatment was discontinued. She returned in five months for the closure of the fistula, having been entirely free from pain, gained twenty-five pounds, and become strong and well. The operation was performed, and perfect union resulted. Believing that the backward displacement of the uterus might possibly have caused some obstruction to the ureter, the use of the drainage instrument was continued as an uterine support.

The author then analyzes this case, and one previously treated by the same method, as regards etiology, symptoms, course and termination, differential diagnosis and treatment in an exhaustive manner, for the details of which the reader is referred to the original article.

The following are the most important results which follow the employment of this new method of treatment:

(1) An artificial fistula furnishes an opportunity for the observation and clinical study of disease of the bladder, ureters, pelvis and kidneys, afforded by no other means. This is particularly true of catheterization of the ureters.

(2) The opportunities for treatment, especially for irrigation of the pelvis, are much greater by this method than by any other.

(3) This method of treatment of diseases of the pelvis of the kidney is much less dangerous than the grave operations of nephrotomy and nephrectomy.

(4) Intra-vaginal drainage prevents the evil consequences of incontinence of urine, and perfects the method by removing the chief objection to its employment.

A NEW METHOD OF RADICAL CURE OF RETROFLEXION.

Dr. Schücking⁷ recommends for the radical treatment of non-adherent retroflexed uteri, the fixation of the anterior wall to the deepest part of the vesico-uterine peritoneal fold, in other words, the keeping the organ permanently ante-flexed. This is accomplished by dilating the uterus, passing a long, curved needle, fixed to a handle, through the anterior wall near the fundus, and bringing it out through the anterior cul-de-sac, which has been pushed up as far as possible on the body of the uterus. The two ends of the suture are then tied, and the vagina packed. The histories of two cases are given. In one the suture was removed on the sixth day, the tampon omitted on the ninth, and on the fourteenth the uterus was back in its old position. The second case, in which the ligature was left in fourteen days, resulted favorably, four months later the uterus was strongly ante-flexed.

USE OF THE VAGINAL TAMPON.

Dr. Emmet⁸ in discussing the subject, first refers to his views on pelvic inflammations, and says that while his advocacy of the use of hot water vaginal injections was a great advance in the treatment of these troubles, yet it is not infrequently the case that no permanent benefit follows the prolonged use of this agent. This led him to study the pelvic circulation in disease, and to arrive at the conclusion that the important pathological change in cases of prolapse was traction on the

⁷ *Cent. für Gyn.*, No. 12, 1888.

⁸ *N. Y. Med. Journal*, February 18, 1888.

⁶ *Am. Jour. of Med. Sciences*, March and April, 1888.

pelvic bloodvessels resulting in a varicose condition of the veins due to a loss of elasticity in the tissues surrounding them. The same condition would result from local peritonitis with adhesions.

Hot-water injections have their greatest effect in the acute stage of pelvic inflammation but when these tissue changes, and the varicose condition of the bloodvessels have occurred, they may accomplish little more than exercise a soothing effect. In these cases the use of the vaginal tampon, compressing the dilated veins, and lifting the uterus to its natural position in the pelvis, will often be followed by good results. Dr. Emmet then gives the history of an interesting illustrative case, and describes in detail his method of applying the tampon.

Clinical Memorandum.

TWO CASES OF CEREBRO-SPINAL MENINGITIS.

BY GEORGE G. SEARS, M.D.

THE following two cases are of interest not only as occurring in one family at a time when cerebro-spinal meningitis occurred only in rare sporadic cases, but also because they present a number of the rarer symptoms.

On September 17, 1887, Charles W., a well-built little fellow of two years, who had always been previously healthy, was taken with headache, occasional vomiting, and sore throat. The pharynx was found to be considerably reddened, but otherwise physical examination was negative. There was constipation.

On the 20th there was considerable stiffness of the neck, and efforts to move the head caused pain. Both feet and ankles were somewhat tender and were much swollen, the swelling extending half-way to the knee and pitting on pressure. The pulse was small and rather weak. During the night he had two slight convulsions.

22d. The patient was drowsy and weaker, but otherwise his condition remained about the same. During the night he had a severe general convulsion, in which he died. The febrile movement was slight. A specimen of urine could not be obtained.

Obviously, without the evidence furnished by an autopsy, the diagnosis must be considered very doubtful, yet the record corresponds fairly well with a number of anomalous cases which are frequently reported as occurring during the prevalence of an epidemic, and offers many points of comparison with the early history of the second case, where the diagnosis seemed clear to others who saw the case with me, as well as to myself.

On the 19th, two days after Charlie was attacked, his sister Mary, eight years of age, who had been well up to this time, became slightly feverish and complained of sore throat. The pharynx was somewhat congested, but beyond that physical examination revealed nothing abnormal. The tongue was slightly coated; the pulse was full and strong.

On the 20th she began to complain a little of headache and had diarrhoea. The abdomen was distended and tympanitic, but nowhere tender.

23d. The headache has become much more severe during the past three days. It was noticed, yesterday, that the feet were somewhat swollen and oedematous,

and to-day the swelling has increased. Both ankles are very red and tender, the slightest touch causing her to shriek with pain. The wrists and elbows are also painful and tender, but there is very little alteration in their appearance. She complains now for the first time of a "stiff neck," and pressure over the cervical vertebrae is extremely painful. Instead of tossing restlessly about the bed, she now lies very quiet, occasionally moaning, with the head thrown back and held rigidly.

26th. The patient has scarcely slept at all during the past three nights, owing to intense headache, in spite of bromide of potash and morphia. She lies quietly on her back, with eyes half-closed, occasionally uttering a short, sharp cry, or screaming "Papa" or "Mamma," but she replies intelligently to questions, giving her answers in quick, explosive monosyllables. There is no photophobia, the pupils are equal and react well to light. Constipation has now become the rule, and from this time on an evacuation could be obtained only with the use of cathartics. For the past day or two the amount of urine has been diminishing, and during the last twenty-four hours but five or six ounces have been passed, which was high-colored, smoky, and loaded with albumen. The skin is dry.

30th. Under the use of acetate of potash and seidlitz powders, the urine has risen to the normal amount. She complains less of headache, and the swelling of the feet has diminished and the redness of the ankles has disappeared.

During the following two weeks there was a gradual change for the worse. An erythematous eruption appeared for a day or two upon the face and chest. There was more complaint of stiffness of the neck and tenderness over the cervical spines, and the skin over the limbs became markedly hyperæsthetic. She lost greatly in weight and was more drowsy, but still answered questions with intelligence. There was slight delirium at night. The pupils were equal, but dilated, and she became somewhat deaf.

On October 21st, the temperature, which had been normal or subnormal for the four previous days, though without any amelioration of the symptoms, rose to 103.5°, and the patient became much more stupid. The right pupil is now considerably larger than the left. On the following day, the thirty-seventh day of the disease, she had a left-sided convulsion, after which she became comatose, and died a few hours later. The temperature, with the exception of the few days before death noted in the history, and the three days following the onset of the severe symptoms, when the thermometer registered 103.6°, 105°, and 104°, respectively, the morning temperature being given in each instance as the higher, rose but once to 103°. The rest of the time it varied between 100° and 102.5°, only occasionally reaching the latter point. The curve was erratic, and the morning temperatures were quite frequently the higher. The pulse-rate varied considerably from day to day without apparent cause. The greatest variation noticed on two consecutive days was from 82 to 116. No autopsy could be obtained.

The treatment consisted in local applications of ice, bromide and iodide of potash, and occasional doses of morphia. Salicylate of soda and oil of gaultheria were tried for the relief of the joint symptoms, but without apparent results.

The diarrhoea, the distended abdomen, and the general indefiniteness of the symptoms, taken in connection with the season of the year, suggested typhoid fever for a day or two, but the later progress of the disease soon settled the question. As between tubercular meningitis and cerebro-spinal fever, I based my diagnosis on a good family history, the marked stiffness of the neck and retraction of the head, the hyperæsthetic condition of the skin, the cutaneous eruption, the arthritic symptoms, and the absence on repeated examination of any evidence of tubercular deposits elsewhere.

A point of special interest was the occurrence of pharyngitis, which, with pneumonia, seems to be closely related to cerebro-spinal meningitis. In the epidemics in this country from 1811 to 1815, pharyngeal inflammations were unusually frequent, and during the epidemic in New York City in 1872, Lewis Smith says that, in his opinion, an unusually large number of cases of pharyngitis occurred. Any figures which I am able to present are too small to be of much statistical interest, but it is, at least, a striking coincidence, if accidental, that of thirty-two cases which I was called upon to treat as district physician between the 15th and 20th of September, the two cases reported above not being included, there were three cases of pneumonia and nine of inflammation of the pharynx, as against nine cases of the latter affection occurring during the rest of the month, these eighteen cases being 11.6 % of all cases treated. During the eleven months from June, 1887, to May, 1888, in which I was connected with the district, the nearest percentages to this in an average monthly clinic of over 160 new cases were furnished by the following: October with 9%, November with 8.4%, and December with 9.6%; but as scarlatina became epidemic in the middle of October, and continued till the middle of December, many of these cases probably owed their origin to scarlatinal infection. As compared with the Septembers of the preceding four years, the difference is quite striking, the highest percentage being 3.7 in 1883.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

T. F. SHERMAN, M.D., SECRETARY.

REGULAR meeting, Monday, May 7th, at the Medical Library, 19 Boylston Place, Dr. F. H. DAVENPORT in the chair.

Dr. F. W. JOHNSON read a paper on

A FEW CASES OF ABDOMINAL SECTION.¹

Dr. B. F. DAVENPORT read a paper on

THE DETECTION OF MORPHINE IN THE URINE AS A MEANS OF DIAGNOSIS.²

Dr. J. B. AYER said that he was much interested in the paper, and that in many cases the detection of morphine in the urine would prove of much value in the diagnosis of the disease.

CREOLINE.

Dr. E. O. OTIS said: Mr. Chairman: I want to

call the attention of the Society to two preparations which I have been using of late in the surgeon's room at the Boston Dispensary with much satisfaction. The first is creoline, whose chemical composition, I believe, has not been determined, but it comes from the aromatic class of hydro-carbons. It is not poisonous, and combines the favorable workings of iodoform with those of corrosive sublimate. Esmarch³ found that its anti-parasitic quality was greater than that of carbolic acid, but its disinfecting quality less. Kortüm⁴ has used it with advantage in surgical cases, and also in puerperal fever. He says it cleans up wounds, diminishes suppuration, and induces a speedy cure. Neudörfer, of Vienna, uses creoline only as an antiseptic, and has found one-half to two per cent. solution efficient, using two per cent. solution for instruments and preparing the skin at the seat of operation. He says it relieves pain, checks hæmorrhage, and limits suppuration. He prepares a fresh solution each day by adding two drops of creoline to six ounces of water.

He uses it undiluted for erysipelas. It has also been used in a one-half per cent. solution to wash out the bladder, and besides being a deodorizer and hæmstatic, is said to improve the condition of the mucous membrane. I should think it might be of service as an injection for gonorrhœa, although I have never tried it. I have found it very serviceable for all the cases in which one uses an antiseptic, and especially for poultices, so that I have almost entirely discarded the ordinary flaxseed poultice. I wring out a wad of absorbent cotton in a solution of it, applying it to the suppurating wound, cover it with dry cotton, and apply a bandage. I give the patient a small bottle of the creoline, tell him to add two drops to a cup of warm water, and with this solution make a poultice in the way I have described. Pure, it is a black-looking fluid of much consistence, and with water makes a milky solution with a tarry odor. I use two solutions, one-half and two per cent. The price is about the same as that of carbolic acid.

The second preparation is

PHOTOXYLINE.

called to my attention by Dr. Louis, who assists me at the Dispensary. I use it as Von Wahl directed⁵ a five per cent. solution in equal parts of ether and alcohol. It looks like collodion, but its advantages over it are said to be (a) its persistent, firm adhesiveness; (b) its absolute imperviousness; (c) its uniform compression of tissues. I use it in many minor operations and injuries. It is said to be especially suitable for plastic operations upon the face and in the neighborhood of the male genitals. Over wounds closed with sutures a thin layer of absorbent cotton saturated with it is placed, and serves as an antiseptic protective. In children, where the soaking of the dressing is not to be avoided, it is of service. It is also recommended for the sutured wounds of laparotomies.

—The newspapers are reprinting one of the best of the late Mr. Travers's bon-mots, which was inspired by the sight of the Siamese twins. After carefully examining the mysterious ligature that had bound them together from birth, he looked blankly at them and said, "B-b-br-brothers, I presume."

¹ Publication deferred.

² See page 121 of the Journal.

³ Centralblatt für Bacteriologie und Parasitenkunde, 1887, 10.

⁴ Berlin, Klin. Wochenschrift, 1887, No. 46.

⁵ St. Petersburg Med. Wochenschrift, 1887, No. 20.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.¹

F. B. HARRINGTON, M.D., SECRETARY.

DR. PHILIP COOMBS KNAPP read a paper on

NERVOUS AFFECTIONS FOLLOWING INJURY; "CONCUSSION OF SPINE." "RAILWAY SPINE." "RAILWAY BRAIN."²

DR. J. J. PUTNAM said: I have listened, as I am sure we all have, with the very greatest interest to Dr. Knapp's thoughtful and thorough paper, and the very few words I have to say will be mainly in confirmation of what he has already told us. In the first place I would like to say one word in regard to his reference to me in connection with the subject of hemianæsthesia which was spoken of as indicating hysteria. I certainly did not intend to make the cases out as cases of typical hysteria, in the sense in which he uses that term. I would retract that statement if I made it. The hysterical state is the expression I would use and one could hardly avoid using that term, for very lack of a better.

It certainly seems to me unfortunate that most of these cases are of that class where the medical man is under a good deal of social or moral pressure to consider other things besides his medical duty, and must almost of necessity do so.

I think the railroad surgeon, and even the railroad physician is not in a position to judge fairly about these cases, unless he follows them a very long time. They may recover so as to walk about and even to work, and yet they may be wholly unable to bear any considerable strain. Thus, to speak of but one case, I have in mind a patient who was injured during the war by a spent ball which struck him in the back. He also is in a condition in which it is difficult to diagnosticate any local lesion, but he has been good for nothing ever since the event.

In regard to the hemianæsthesia, it seems to me an important matter because it enables us at least often to satisfy the jury, or, at least, to satisfy ourselves, that simulation is not present; and the immediate question arises, may not a person who is not injured simulate hemianæsthesia; and the value of the sign turns upon the answer to that question. I don't think they all appreciate loss of sensation. I have seen several cases, and one in particular, where this condition was present without having been recognized by the patient at all. In one such case a burning match could be brought suddenly against the skin without his expressing pain, and yet he was walking about and doing business. It would not be easy to simulate the typical form of hemianæsthesia, I think, because that would mean too great knowledge on the part of the patient. This is especially true of the retraction of the field of vision, as tested at the blackboard on different occasions, with the patient's eye at different distances from the board. It would take an accomplished simulator to meet this test with success. I must, however, admit that I have once been deceived, and that the examination should be made with great care, and if necessary should be repeated. With regard to the line of anaesthesia on the skin, I think under most circumstances it is so accurately marked that simulation is almost out of the question; of course, not absolutely. Moreover, it seems to me that

these cases do not furnish a large number of simulators. I have seen one or two men who were evidently simulating, and these were the only ones, with one exception, that I have had much reason to suspect, even afterwards.

DR. J. COLLINS WARREN. I think it is interesting to one who sees many of these cases to study the nature of the affection. The question is generally raised in court what would you call hysteria. Is it simply a functional disturbance of the nervous system, or not? Hysteria implies an impairment of the will-power rather than functional disturbance of the nerves. Such functional impairment of the nerves as accompanies this class of cases is more appropriately named nervous prostration, or neurasthenia.

The word shock has been used largely by Page ("hysteria from nervous shock"). The question arises as to what he means exactly by nervous shock. The term shock is so varied in its application in the English language; it means fright, and it means that subtle condition which accompanies injuries or severe surgical operations; it means a moral injury, so to speak, a shock to our ideas of morality. It means a great variety of things; therefore, when the term shock is used, it is a little difficult always to tell what idea the writer means to convey.

A very excellent monograph has been written by Gröningen, a Prussian military surgeon, on shock. He shows how diverse are the views of surgeons on this condition that we see after severe injuries. He thinks there is no organic change in the individual affected. He undertakes to explain it, in this way: There are four degrees of irritation which we may conceive as being produced in a sensitive nerve. First, the form which produces no appreciable change. Second, there is a severer form which produces impairment of function, like impairment of the vision or impairment of taste, impairment of hearing, etc. Frequently tasting of different strong substances, of course, will confuse and impair the sense of taste. Then comes the third degree of irritation, which will produce not only impairment of function but produce the sensation of pain; and finally, there is a fourth and one which covers all the other degrees, a severer form, which will destroy all function. It is this latter form which he conceives applied to the general nervous system which produces the grave phenomena which we recognize as the symptoms of shock. He considers shock as fatigue or exhaustion of the cord and the medulla—not so much the brain as the nervous centres in the medulla—which preside over the various functions of the body, and for the time being impair their action to such a degree that the condition is regarded as one analogous to death; in fact, shock has been described as "a momentary pause in the action of death."

Now, it has been said that we may get milder forms of irritation, and as a result of these milder forms of irritation we may have milder forms of exhaustion. So we may have an acute condition which may terminate fatally, or one from which the patient may recover, or we may have a chronic condition following, which may last for a considerable length of time, and be followed by the general symptoms which we recognize as those of neurasthenia, with perhaps local paralysis besides. Cases of railway shock may no doubt be genuine, still they are often so masked by the surroundings that it is difficult for us to draw conclusions

¹ Concluded from page 108.² Reserved for publication.

from them. I do not mean to imply that such patients are malingerers, or that they are simply hysterical, but the surrounding mental and social disturbances are such as to mask the conditions greatly. I think we can study with much advantage cases which have nothing to do with litigation whatever. I have seen one or two such cases which seem to carry out the idea that there are examples of chronic exhaustion, due, perhaps, to slight injury at the time in a neurotic subject, and which are followed by some form of paralysis. And I think it highly probable that such a case as Dr. Putnam referred to would belong to that class—a slight injury, with a good deal of mental disturbance at the time, with a long continued functional process afterward, paralysis, loss of sexual power, etc.

I call to mind a case of a young lady who fell and hurt her knee. Partial weakening of the muscles of the injured extremity obliged her to use a crutch. The paresis lasted for many months, but was entirely cured by rest, with the usual treatment which accompanies the rest cure. The rest had relieved the exhaustion which had existed in the nervous centre, and the motions of the legs have been perfect ever since. It seems to me that we are not to apply the diagnosis of hysteria to these cases in a loose way, such as reading Dr. Page's book would incline us to do.

DR. E. H. BRADFORD: In view of the importance of this matter, and the difficulty of getting at the facts, I would like to make a motion that a committee of four and the secretary be appointed by this Society to make an investigation in the course of the coming year in regard to the late Bussey bridge disaster. The conditions for such an investigation are peculiarly favorable: We have an accident occurring very near Boston; the victims have been observed carefully by a number of very skilful physicians; we have a number of experts who have carefully examined the cases, and we have a railroad corporation which is particularly fair. In the course of the next year nearly all of these cases will have been settled, and I am quite sure, from what I have heard, that the railroad will give any assistance they can. We shall then learn what has been the result after litigation, how many have recovered and how many have not recovered. I think it will be of substantial value. [The motion was carried.]

DR. MORTON PRINCE: It has seemed to me that under this term, spinal concussion, there have always been included a very large number of different affections, and in particular among them have been included cases which are really cases of gross lesions of the cord. And the worst of it is that it was upon these last that the original doctrine of spinal concussion was founded, in consequence of which a taint has been given to the whole subject. These cases have been and are constantly overlooked because a thorough neurological investigation is not made. But aside from these cases of gross lesions I think that all cases of spinal concussion may be classed under at least four different heads.

First, we have cases which I think can be called traumatic hysteria, including under this term most cases of functional paralysis. I don't know that we can draw any sharp line of distinction defining the purely hysterical cases, and I prefer, for the sake of simplicity, to class them together. It does not seem to me, in the present state of our knowledge, that we can rigidly apply the name hysteria to anything more

than a class of functional diseases. If we limit the term to the "grande hystérie" of Chareot, I don't know what we are to do with the large classes of paralyzes which constantly occur, and in which we have no reason to suspect any organic lesion. These cases frequently occur, and, I think, comprise a certain portion of the cases of so-called spinal concussion. I have seen many of them, and have here the history of one which is striking in many points. It is the case of a soldier who was struck in the left side in 1862 by a piece of shell, or some other large missile. Being protected by his blanket, which was wound up and slung around him, the blow left no traces. He was taken to the hospital. The left side was paralyzed immediately after the accident, and has remained so ever since. On physical examination, made last May, I found: Paresis of left arm and leg; no atrophy or rigidity of muscles; nearly complete anaesthesia and analgesia of the leg as high as the middle of the thigh, and of the left arm as high as the middle of the upper arm; no sign of any injury to the side where he was struck; left knee-jerk more pronounced than the right; right feeble. This seems to me a case of purely functional disease: and in the light of our present knowledge best classed as hysteria. A similar, though a much simpler case, I saw the other day. It was that of a man who had fallen from a table or something of that sort and struck on his back against a brick. At the time I saw him, a month later, there was partial paralysis of the right arm, and he complained of pain between the shoulder-blades where he was struck, and round about the shoulders. I put a blister over the fourth dorsal vertebra, and he returned in high spirits, feeling perfectly well, and was able to go to work. This seems to me to be an example of a certain number of cases.

It seems to me that rather too much stress has been laid upon the fact as to whether the patient gets well or not after litigation to determine whether it is functional or not. I don't know why hysterical diseases after trauma should not exist as long as those occurring under other conditions. The first case has already lasted twenty-five years, and I have seen several such cases of greater or less severity.

And in this connection I may say that I am inclined to agree with Dr. Knap in regarding a considerable proportion of the non-railway cases as incurable, or at least presenting an unfavorable prognosis. It is not very uncommon to meet such cases lasting for very long periods. I say non-railway cases, because in the cases following railway accidents there is an element of mental shock that does not enter at all, or only to a slight extent in the other cases. Hence it is that in "railway spine" or "brain" we have a mental factor playing such an important part. Conclusions drawn from the one class cannot incautiously be applied to the other. But because paralysis and other symptoms following concussion do not get well, it does not seem to me that we are justified in assuming an organic gross lesion, such as capillary hemorrhages. They may still be functional, using that term as ordinarily applied to other affections. How many of the incurable cases are due to comparatively gross lesions can be settled only by future research. Further, it is possible that, as in other prolonged functional diseases, secondary changes may occur rendering recovery difficult.

Another large class should be regarded as traumatic neurasthenia. Many of them present symptoms simi-

lar to those we see every day in patients suffering from the wear and tear of life. I have, to-day, under my care a case of neurasthenia which, if there had been a traumatic history, would be typical of one of these cases of spinal concussion. If left to herself I think she would not get well for a long time, perhaps some years. In that case one might as fairly argue that there was organic disease at the bottom of it, as to claim it for traumatic neurasthenia. Under this class (of traumatic neurasthenia) I think the largest proportion of cases of spinal concussion may be placed.

A third group of cases may be classed as paralysis from idea. I may cite, as enabling us partially to understand this group, the case of a boy who ran across a railroad track with some other boys. He tripped and fell in front of an engine moving towards him. He tried to get up, but found it absolutely impossible to do so. His companions called to him to jump and run, but he could not do it, and told them to go on and leave him to his fate. Just before the engine reached him it was fortunately switched off, and at once he got up and ran away. There was complete paralysis from idea, though, I must admit, it may be fairly questioned whether it is not better explained by a reflex paralysis originating in the emotion of fear. Some of the so-called hysterical knees are better explained as paralyzes from idea, as well as many common forms of local paralyzes following local injuries.

In this connection I may parenthetically remark that drowning from so-called cramp may be better explained as due to a sudden paralysis of this nature.

But eliminating these three groups, does there still remain a fourth group of cases in which the symptoms can only be explained by a molecular derangement brought about by the physical concussion. While I do not think we can deny the existence of such cases, they must be few and far between. We may even give the Scotch verdict of "not proven." I have here a patient whom I desire to show to-night, who seems to me to have originally answered the requirements of the molecular theory as well as most of the recorded cases. This young man, while swinging on the parallel bars in a gymnasium, fell to the floor, striking on his neck. His feet at the time were high above his head. He did not lose consciousness; but he states, that, when asked by the instructor shortly after he fell, if he could move his legs, he tried and found he could not move either legs or arms. He had the feeling of "needles and pins" all over him. In the course of a few hours, he regained the use of his legs, but his arms remained paralyzed. The first night it was necessary to catheterize him, and he was constipated for some days. At the end of a few days, when I saw him, there remained only paresis of both arms; legs were normal; sensation unaffected; tenderness over fifth cervical vertebra, and he carried his head forward in a stiff constrained manner. The paresis of the arms persisted for about two and a half months and then disappeared. During this time there was no wasting of the muscles, and the electrical reactions were normal. At first I thought this a case of bona-fide spinal concussion; but I now think I was wrong, and that the lesion was probably a hemorrhage upon the anterior surface of the cord pressing upon the anterior motor nerve roots before they joined the posterior sensory roots. The

first general paralysis was probably due to shock. You see he has now completely recovered, and has perfect use of his arms, though he still carries his head forward from habit.

It seems to me, that in many cases, the psychical element plays a very important part. It seems to me that we must assume that it is the psychical shock, and not the physical shock that does the mischief. Patients have experienced almost every one of the customary symptoms, when they supposed they had been injured, although it was found afterward that no injury at all had occurred to them. Therefore it seems to me that it is the psychical influence that plays the dominant part, and not the physical. I think we must be very cautious how we accept the statements of patients in regard to their previous history, because any one who is at all conversant with the legal investigation of cases knows how almost impossible it is to get a correct history of cases previous to the accident; the patients themselves being unable to give a straight account of their previous condition, and when thoroughly known it is often found that there have been points in the history which were not known before, and which play an important part. This young man to-day is unable to state with anything like accuracy the history of his case, but luckily I have a record which was made at the time. In one of the cases reported by Dr. Knapp, my history, as told to me, differs from his in one respect. My notes show that the paralysis did not come on for two months after the wound, and as we know very little about what took place during those two months, it seems me a doubtful case from which to draw conclusions.

DR. KNAPP: During that time he was sick with peritonitis.

DR. PRINCE: He says that he was in the hospital.

DR. KNAPP: No; the medical and surgical history of the rebellion tells that.

DR. PRINCE: There still remains the possibility of syphilis.

DR. BULLARD: I will only say a few words. First, in regard to simulation of serious symptoms by patients; it has been my fortune to meet with comparatively few cases where I believe this to have occurred. The more I have seen of the class of cases under discussion, the more I am inclined to doubt that much simulation exists. There is no question that there are many patients who complain of symptoms which are entirely subjective; but certainly, in a large proportion of cases, these symptoms occur, and persist in a way altogether inexplicable on the simple ground that they are simulated.

There is another point of great importance in considering cases of this character, and that is the previous history. In persons predisposed to hysteria or of specially excitable nervous temperament, hysteria and other functional nervous disorders are more easily induced than in others of more healthy constitutions. This is a very important point to be considered in any case. An accident which will cause no serious injury to a person of healthy and vigorous health with no abnormal predispositions may produce very serious and lasting effects upon one with a tendency, whether active or latent, to functional nervous disorders (hysteria, neurasthenia, etc.).

It is therefore extremely important that we should ascertain as far as possible the previous history of the patient. This is often very difficult but it should be

sought for thoroughly, not simply on the ground mentioned, but also and even more because many of the symptoms which most frequently occur in these cases are liable to be produced by other causes, as syphilis, alcohol, lead, etc., and may or may not have existed previous to the injury. In all cases these possible causes should be as nearly as possible eliminated.

There is no doubt that under the term "railway spine" there are included a variety of pathological conditions. Some are no doubt functional in the sense that if we should examine the nervous system, we should with our present methods of examination, find nothing wrong; others are unquestionably organic.

There seems to me to be no safe course open in the present state of our knowledge on this subject, but that each case should be studied carefully by itself, and decided on its own merits.

Dr. KNAPP: I would like to make one or two more remarks. I did not mention the statement made by Page that all of these disturbances occur in patients who have a pecuniary interest in the case, and he questions if such cases are ever seen in hospitals or out-patient clinics, when there is no pecuniary interest involved. I think that is characteristic of the statements that Mr. Page makes in his work; and it seemed to me, as I have said, that most of the cases that I have reported had no pecuniary interest whatever, which answers Mr. Page's criticism.

I think Dr. Prince is disposed to be a little too vague in what he calls hysteria. It must mean something or nothing. Hysterical, however, does not mean functional, the less cannot be properly used to mean the greater. If it is to be used as a general term, that is one thing; limiting hysteria to the sense in which I have employed it, I think we see very few cases of traumatic hysteria. Paralysis depending upon idea, is of course hysterical paralysis. As I intended to bring out in my paper, some of the cases that I have seen are neurasthenia, pure and simple.

Many of their symptoms were symptoms of undoubted organic disease; incontinence of urine, nystagmus, exaggeration of reflexes. These symptoms are not those of functional nervous disease. While I believe a part are neurasthenic, and another part functional, I do not wish to say that all cases that are functional are hysterical or neurasthenic. There are a good many functional diseases beside these, and it is a good idea to keep the boundaries as nearly fixed as we can. I think there are a good many cases where we find signs of some organic nervous disease, and the explanation of Westphal seems to me the most plausible for such cases.

Recent Literature.

A Practical Treatise on Diseases of the Skin. By JOHN V. SHOEMAKER, A.M., M.D. New York: D. Appleton & Co. 1888.

"All at once a conviction flashes through us that we have been in the same precise circumstances as at the present instance once or many times before." This quotation from "The Antecator of the Breakfast Table" indicates with sufficient accuracy the dominant mental sensations derived from reading this treatise upon diseases of the skin by any one who is familiar with Dühring's work upon the same subject. The

arrangement of the chapters and their various subdivisions is almost a replica of Dühring. Much of the text also bears a striking resemblance to that of the same author. There is some shifting about of sentences and ideas as well as alteration of individual words, but the framework is the same and to be recognized in spite of the altered verbal drapery with which it is hung. The following parallel columns will serve as *pieces justificatives* of this assertion. That the resemblance is not merely due to identity of subject, may be demonstrated by taking any treatise upon diseases of the skin other than that of Dühring—Hyde's or Robinson's for example—and making a like comparison.

DÜHRING. (3d Edition.)

SHOEMAKER.

"Directly the reverse of hyperæmia is the condition termed *anæmia* in which there is a deficiency in the amount of blood in the cutaneous capillaries. This state may result from an absolute want of blood in the general system, in consequence of hæmorrhage, or it may follow disease, as in chlorosis. It is characterized by loss of the natural color of the skin, succeeded by a blanched whitish or yellowish hue, affecting according to its course and nature, either the whole surface or certain regions, as the extremities. It is also attended by a decrease in the temperature of the surface, and at times by cold sweating." [Page 84.]

"Seborrhœa is a disease of the sebaceous glands characterized by an excessive and abnormal secretion of sebaceous matter, forming upon the skin an oily coating, crusts, or scales." [Page 115.]

"Ordinarily they consist of torn points, lines or streaks more or less furrowed with shreds of epidermis variously sized and shaped for the most part irregular, showing reddish moist surfaces, oozing minute quantities of serum and blood which have a tendency to dry into crusts." [Page 62.]

"Epithelioma may be confounded with syphilitic tubercles and ulcerations, acuminated warts, lupus and the rare affection, rhinoscleroma. The papule or ulcer of epithelial cancer especially if about the genitalia, may also resemble the chancre, but attention to the history to the duration of the lesion, and to other points of diagnostic value will aid in arriving at a correct opinion. The evolution of late syphilitic formations is always much more rapid than that of cancerous, only rarely in malignant cases does epithelioma run a rapid course. The characters, moreover, of the ulcerative process due to syphilis is very different from that of epithelial cancer. In tubercular syphilis, two, three or more points of ulceration are apt to exist, in cancer, usually only one. In syphilis the secretion is generally abundant, yellowish and creamy, in cancer it is scanty, streaked with blood, viscid and stringy. The condition of the tissues surrounding the ulcer, is also different. In the infiltrating variety of cancer there is more or less induration, in syphilis there is none, the deposit generally terminating abruptly against the sound skin. In cancer there is apt to be pain of a burning character, in syphilis the ulcer is usually without pain." [Page 556.]

"Anæmia of the skin is symptomatic of a deficient amount of blood in the cutaneous capillaries. It may be the result of disease or may be due to excessive loss of blood from the general system by hæmorrhage. It is characterized by unusual paler than may be succeeded by a yellowish or greenish hue involving all or a great portion of the skin. It is usually attended by a decrease in the surface temperature, and may be accompanied by profuse perspiration." [Page 47.]

"Seborrhœa is a functional disease of the sebaceous glands, characterized by an excessive and altered condition of the sebaceous secretion, forming an oily coating, crusts or scales upon the skin." [Page 92.]

"They vary in size and shape, but generally consist of torn points or linear furrows, from which minute particles of blood or serum are oozing, or which have dried up and formed a crust over the lesions." [Page 40.]

"The diagnosis of epithelioma is easy in advanced stages of the disease, but the disease might in the beginning of an attack be confounded with the lesions of syphilis and lupus vulgaris or with ordinary warts, simple condylomata or seborrhœa sicca. The papule or nodule of epithelioma may at first resemble a hard chancre, but the history of the case and the course and duration of the lesion will soon point to the correct diagnosis. The epithelioma-like ulcer might at first sight be confounded with a tertiary syphilitic ulcer, but syphilitic ulcers are usually multiple, while epithelioma is almost invariably single. The secretion in syphilis is fetid, yellow and abundant, while in epithelioma it is usually blood-streaked, viscid and scanty. Epithelioma is usually surrounded by a well-marked zone of induration, which is either absent or insignificant in syphilis. Finally, epithelioma is a disease of long duration accompanied by severe localizing pain while the ulceration of syphilis runs a comparatively swift course and is not attended with any pain." [Page 465.]

This resemblance is diffused throughout the book. In those portions which relate to therapeutics, where

the author exhibits more independence, the defect which is most conspicuous in Dühring's work is apparent also in this; namely, a want of perspective in handling the subject, a discursiveness of recommendation and vagueness of direction which render it difficult for the student always to make up his mind exactly what is the best thing to do. A long list of formulae ends the book which is not without decided merit, but which to all intents and purposes may be regarded as a later and improved edition of Dühring. G. H. T.

The Throat and its Diseases, including Associated Affections of the Nose and Ear. With one hundred and twenty illustrations in colors and two hundred engravings, designed and executed by the author, LENOX BROWNE, F.R.C.S.E., Senior Surgeon to the Central London Throat and Ear Hospital, etc. Second edition. Rewritten and enlarged. Philadelphia: Lea Brothers & Co. 1887.

This is a very practical and original work. It is intended especially for general practitioners, and can be cordially recommended to them. To the specialist it will be of interest, as it is a mirror of the author's own practice and ideas concerning a class of diseases which for many years he has had rare clinical opportunities for observing.

As Mr. Browne tells us that his work has no pretensions to be considered exhaustive, we need not find fault with him for the incomplete manner with which he has disposed of some of the important affections of the nose and naso-pharynx. He has evidently written his book *con amore*, and those subjects of special interest to himself are thoroughly treated. The chapters, for instance, on inflammation of the submucous tissue of the larynx—oedema—syphilitic laryngitis, and especially those on tuberculous laryngitis, and lupus of the mouth, pharynx, and larynx, are worthy of all praise.

In Chapter I, in speaking of the action of the cricothyroid muscle, the author erroneously states that its office is to draw the thyroid cartilage downwards. Its action, however, which is to pull the cricoid upwards, is also given; but then the author adds that, "practically, the point is not one of great importance, since the effect of the muscular movement is, in either case, equally to stretch the vocal cords." It is quite true that the cords would, in either case, be stretched. It seems to us, however, that those who like to know the right from the wrong must consider it important to have a correct idea of how this muscle acts, since perfect vocalization is impossible without tension of the vocal cords, and this tension is controlled by the cricothyroid muscles and the expiratory blast of air carrying the cricoid cartilage upwards on to the thyroid. The thyroid cartilage, owing to the powerful muscles attached to it, is the fixed point.

In the chapter on "Therapeutics of Throat Diseases," the use of sprays to the larynx and the administration of snuffs in nasal diseases is condemned as being unphysiological, seldom beneficial, and often deleterious. The only conditions in which the author has found powders of benefit are tuberculous thickening and ulceration of the epiglottis, and in malignant diseases. Considerable stress is laid upon the value of "Leiter's Temperature Regulators" in cases of tonsillitis and other acute inflammatory troubles of the fauces and larynx.

The subjects of acute laryngitis, exudative inflam-

mation of the larynx, and diphtheria are ably discussed. Acute laryngitis in children and in adults is considered to be one and the same affection; the features of distinction being due to the age at which the attack occurs, and not to any difference in its morbid anatomy. Mr. Browne insists that the severity of inflammations of the larynx in the young is due to the greater tendency in children to plastic exudation, as a result of simple mucous inflammations. The small size of the larynx in the child may also influence the severity of infantile laryngitis. By exudative laryngitis or croup the author means a pseudo-membranous inflammation of the air-passages of an essentially non-infectious and non-constitutional nature, which exhibits local, rather than constitutional symptoms. This disease is considered to be altogether distinct and different from diphtheria.

In the chapter on malignant neoplasms, some points on the lymphatic system in relation to isolation of cancer in the larynx are brought out which are interesting, and which are not generally recognized. It is shown that the lymphatics of the larynx are not isolated, and that it is by no means true that that portion of the larynx which is usually attacked by carcinoma is ill supplied with lymphatics. Two beautiful illustrations from Sappey's "Atlas of the Lymphatic System" are given, as well as full quotations from his writings on this subject. In speaking of abnormal sensations in the pharynx, such as heat, pricking, swelling, weight, some foreign body, or the *globus hystericus*, Mr. Browne expresses the opinion that such feelings are always symptomatic of some objective cause; the principal condition which gives rise to them being a varicose condition of the veins at the base of the tongue. A sensation to taste, and sometimes the actual presence of blood in the mouth on rising from sleep, is believed to be characteristic of varix of the tongue, of the mouth, or of the pharynx. Neuroses of the larynx are disposed of in a very few pages. "Abductor" paralysis receives but brief notice, as Mr. Browne does not consider it a subject of any practical importance. We may here, in passing, call attention to Figures 96 and 97 (Plate x), where the author pictures what he calls paralysis of the left abductor. We see no evidence whatever that the left abductor is alone paralyzed. To us, the appearances in inspiration and in phonation are typical of complete paralysis of the recurrent nerve, and, consequently, of the whole group of muscles attached to the left cord. When a vocal cord is observed to be completely immovable, we have never been able to understand what justifies the assertion that only one particular muscle is paralyzed, and not two or more muscles of the laryngeal group. The position which the paralyzed cord assumes is no criterion, since we see it in different positions, according to individual peculiarities, when the recurrent nerve is wholly destroyed. Most of the illustrations in this work are from Mr. Browne's own brush or pencil. They are very numerous, beautifully drawn, and are an important feature of this excellent book, which will meet the needs of the general practitioner, and which no laryngologist ought to be without.

—The last International Medical Congress cost \$17 per member, against \$10 per member at the London and Copenhagen Congresses.

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SANITATION SOCIOLOGICALLY CONSIDERED.¹

THE city of Glasgow is fortunate in having as its health officer, a physician of keen perception, and one who is alive to the sanitary welfare, not only of the people of his charge, but of mankind in general.

A recent address by Dr. Russell is especially worthy of the perusal of all sanitarians. In this address, entitled "Some Sociological Aspects of Sanitation," he discusses some of the arguments offered by Herbert Spencer, wherein the latter states the law of "right social relationships, that every man has freedom to do all that he wills, provided that he infringes not the equal freedom of any other man." Dr. Russell does not question this principle, but rather its application to sanitation. "It is only when we follow Mr. Spencer into the details of his method of dealing with public health that we can discover whither he would lead us. He maintains that it is not the duty of the State to protect the health of its subjects, and that sanitary administration by State and municipal authorities is wrong. All taxation for sanitary administration being the abstraction from the citizens of more property than is needful for the sufficient defence of his rights, is to be condemned. . . . It follows that neither the past, present nor proposed methods of securing the health of towns, are equitable." Mr. Spencer goes on to sketch a model method of sanitation of his own proposal. "Respecting sewerage there would be no difficulty. Houses might readily be drained on the same mercantile principle, that they are now supplied with water. It is highly probable that, in the hands of a private company, the resulting manure would not only pay the cost of collection, but would yield a considerable profit. . . . Paving and lighting would properly fall to the management of house-owners. Were there no public provision for such conveniences, house owners would quickly find it their convenience to furnish them.

"If this is said to be impracticable, Mr. Spencer re-

plies that therein lies the virtue of the scheme; for the impracticability arises from the imperfect morality of mankind, and perseverance in these impracticable methods will elevate the general morality until it becomes practicable. If, out of the intermediate chaos will arise disease, which will involve good and bad, he welcomes disease, especially epidemic disease as one of the saviors of society. Partly by weeding out those of lowest development, and partly by subjecting those who remain to the never-ceasing discipline of experience, nature secures the growth of a race who shall both understand the conditions of existence, and be able to act up to them." And thus we are introduced by Spencer to the doctrines of "natural selection" as applied to sanitary laws. He regards the methods of sanitation now in vogue as calculated to further the "survival of the unfittest."

Dr. Russell in commenting upon these paragraphs from Spencer² considers the comparative value of disease as a factor in natural selection in civilized man and in the lower animals. "We must not think of disease," he says, "or rather its causes, merely as producing death, as we are apt to do, when the elevation of the race, by the extinction of the individual fills up our field of vision. Disease is not like the deer-stalker's bullet when his aim has been true, and one falls while all the rest of the herd gallop away unharmed. It resembles the discharge of 'buck-shot' or 'sparrow-hail' which scatters, and for every one killed there are a number maimed. Granting, then, that the most unfit dies, round every deceased unfit there are a number of surviving more or less unfit, because of the effects of disease. This is the invariable result of the action of disease or disease-producing agencies on life. But in the lower animals the predatory instincts of one order promote the development of another by killing and devouring its weaklings, and within the order itself sexual selection tends to isolate the individual from posterity. In civilized man the weaklings survive, and sexual selection does not effectively prevail. The analogy is perfect between the effects, immediate and remote, of a cartridge fired at a large covey and a volley on the battle-field, and the comparative value of disease as a factor in natural selection in these cases. In the former there are the dead which are bagged by the sportsman, and the wounded who are eaten before nightfall by hawks, weasels, cats, etc.; in the latter there are the dead who are buried, and the wounded who are carried away and survive with various deformities and injuries. If you want full evolutionary value out of disease in man, regarded merely as an animal, you must kill or seclude from society; but killing is murder, and sexual selection can only be promoted by the diffusion of knowledge and the elevation of morality to such a sublime pitch that the individual will limit his happiness, subdue his desires, and in short, extinguish himself for the benefit of posterity."

Dr. Russell concludes, that, under existing circum-

¹ On "Some Sociological Aspects of Sanitation," by James B. Russell, B.A., M.D., LL.D., President of the Philological Society, of Glasgow. The President's Address, November 2, 1887.

² Social Statics, 1868.

stances the most efficacious and direct method of promoting the survival of the fittest in civilized man is to prevent disease of all kinds by the removal of its causes. But different diseases present different sociological aspects, some begin and end in the individual, and do not descend vertically, or spread laterally as morbid entities. Their value in the process of selection is confined to the extinction or the weakening of the staying-power of the individual. Simple inflammations like pleurisy and pneumonia, are examples of this class.

Other diseases, as gout, insanity, etc., descend or tend to descend, vertically. They are distinctly hereditary. Others, again, are remarkable for lateral extension from person to person, from town to town, from country to country. These do not descend vertically, and influence posterity only indirectly in the same ways as the first class. But they stand out as the most potent sociological disease factors in virtue of their power of lateral extension or infectivity.

Dr. Farr says of the diseases of this class: "They distinguish one country from another, one year from another; they have formed epochs in chronology; and, as Niebuhr has shown, have influenced the fate, not only of cities such as Athens and Florence, but of empires; they decimate armies, disable fleets; they take the lives of criminals that justice has not condemned; they redouble the dangers of crowded hospitals; they infest the habitations of the poor, and strike the artisan in his strength down from comfort into helpless poverty; they carry away the infant from its mother's breast, and the old men at the end of life; but their direct eruptions are excessively fatal to men in the prime and vigor of age." This last statement is not exactly in harmony with Spencer's "sweeping away by pestilence tens of thousands of unhealthy livers;" or the "weeding out those of lowest development."

Dr. Russell then proceeds to sketch with a masterly hand the most important communicable diseases, and finally sums up their common characteristics as follows:

- (1) *The property of lateral extension.*
- (2) *The habit of endemicity, or of lurking in the intervals between epidemics in places where the conditions are peculiarly favorable to the maintenance of the disease.*
- (3) *The artificial and therefore remediable nature of the local conditions which foster endemicity.* These conditions are essentially of the nature of uncleanness.
- (4) *Even those communicable diseases, such as small-pox, measles, scarlet-fever and whooping-cough, which can scarcely be said to live upon uncleanness, but attack man as man, are all aggravated thereby.*
- (5) *The soil which sustains the communicable disease in the epidemic condition, and promotes the epidemic expansion is the same which produces general unwholesomeness.* In short, the adoption of radical measures for preventing epidemics covers the whole field of sanitation.

(6) *Whoever persists in a manner of life calculated to produce or promote communicable disease injures himself first, but next, and with certainty, his neighbor.* Carlyle, in quoting Alison's story of the poor Irish widow, answers the question, "Who is my neighbor?" as used in this connection. Her husband died of typhus "in one of the lanes of Edinburgh," and she wandered about the town with her three children, seeking help, and finding none returned to her lane, and died there, and set a-going a local epidemic which ended in the death of "seventeen other persons." "Very curious," says Carlyle. "The forlorn Irish widow applies to her fellow-creatures, as if saying, 'Behold, I am sinking, bare of help; ye must help me! I am your sister, bone of your bone, one God made us; ye must help me.' They answer, 'No, impossible; thou art no sister of ours.' But she proves her sisterhood; her typhus fever kills them. They actually were her brothers, though denying it! Had human nature ever to go lower for a proof?"

"It certainly was low enough," says Dr. Russell, "but human nature requires such arguments, and the ultimate cause of the existence of communicability in disease is, I believe, to enforce the golden rule upon us in reference to the physical well-being of mankind. For 'who is my neighbor' in this aspect? Not only is the Irishman in his miserable hut neighbor to Dives in Belgravia, but the Polish Jew in his filthy 'quarter'; not only the unvaccinated children of Leicester, but the unvaccinated French-Canadian; the Mahomedan pilgrim, who drinks at Mecca the waters of the sacred well of Zem-Zem, which the profane chemist tells us is polluted with sewage and a main factor in the dissemination of the cholera which he carries a long stage on its journey to Europe. Indeed, in these days rapid transit has so shrivelled up space, and commerce so intermingles and distributes articles of trade which may carry disease, that it is hard to say who in the wide world may not prove their affinity to me as forcibly as my next-door neighbor.

"The practical question is, 'What am I to do with my dirty neighbor?' and we must bring to the solution of it a little common-sense and ordinary business principles as well as philosophy. The first thing to be done is to make him a voting unit in some convenient area of local government. Impose upon local administrative bodies the duty of providing the physical conditions and appliances of health, such as water-supply, sewerage, drainage, infectious hospitals, disinfecting apparatus, and of carrying out the daily operations, such as scavenging and sanitary supervision, necessary to keep the district clean outside and inside the houses of the inhabitants. To provide against the contingency of my dirty neighbor having a local majority, as well as to maintain a staff of higher capacity to advise in special emergencies and hold local inquiries, let there be at the head of the sanitary administration of the country a local government board, armed with power to enforce the performance of such duties as, being neglected, first injure the locality, but

next involve a risk to the general well-being of the country. The local administrative must, of course, have parallel power of prosecuting and punishing the dirty neighbor for overcrowding and other nuisances which affect the well-being of the neighborhood.

"The solidarity of human interest in the face of communicable disease has in recent times asserted itself far beyond the submerging of the individual. Nations are now learning that organization, to be equal to the task of successfully resisting the inroads of such diseases as cholera, yellow fever, and small-pox, must embrace not only local authorities within nations, but nations themselves. Even the United States, with all its jealousy of central interference with the doings of individual States, learned from the ravages of yellow fever in the Mississippi Valley in 1878 that some general coördination and direction was necessary for the national good, and hence the act establishing a National Board of Health passed by Congress in the following year. In Europe the same powerful agency has brought governments into negotiation. Step by step the final end of the existence of communicable disease is being worked out. Self-interest enlists the most enlightened nations in the promotion of the physical welfare of the poorest and most wretched inhabitants of the remotest corners of the earth."

AN ILLUSTRATION OF MEDICAL BULLETINS.

THE catalogue of ills in the last bulletin of General Sheridan's physicians, as published in Boston daily papers, is a good illustration of the difficulties and annoyances to which the physicians of public men are subjected. The bulletin read as follows, in a paper of wide circulation, which has done much to popularize medical knowledge:

"The immediate cause of death was heart failure. The remote cause was disease of the mitral and aortic valves, the existence of which was known to his physicians, to himself and to his family in November of last year. The complications which have occurred have been nervous exhaustion, pulmonary insarctions, pneumonia, pulmonary febrilia, anasarca and hemorrhages."

The complications varied somewhat in other papers, thus:

"Nervous exhaustion, pulmonary insarctions, pneumonia, pulmonary oedema, anasarca and hemorrhages."

"Nervous exhaustion, pulmonary insarctions, pneumonia, pulmonary oedema, anasarca and hemorrhages."

"Nervous exhaustion, pulmonary anasarctions, pneumonia, pulmonary oedema, anasarca and hemorrhages."

The physician must be brave even to rashness who confides a delicate diagnosis to the telegraph and the daily press.

ARMY MEDICAL EXAMINATION.

THE JOURNAL publishes to-day a notice of the organization of an Army Medical Board, which will meet in New York City on the 1st of October, for the examination of candidates for the Medical Corps of

the Army, a notice for which we doubt not many young medical men look with interest. The army service is in one respect, certainly, an attractive one. It has room for men with special tastes for literary and scientific work, and knows how to utilize such men for their own and the general welfare.

MEDICAL NOTES.

—Another man jumped from the Brooklyn bridge August 3d. His name is Matthew Byrnes, and his age twenty-one. He was picked up by the tug Cheney, which was towing the floating hospital of St. John's Guild down the bay. When off Governor's Island he was transferred to another tug, which carried him to the Hamilton ferry slip. He was subsequently taken to the Long Island College Hospital, where he was examined. His back, the calves of his legs and the back of his arms were marked with black-and-blue ridges. He said he felt no pain internally, but complained bitterly of the cold. Whiskey and hypodermic injections were freely administered to him, and he was enveloped in several blankets. When asked how he felt, he replied, "All right every way, but I'm cold." A few minutes later, after a second hypodermic injection had been administered, he shouted "Stop that; this is the tenth time you have stuck me with that needle." Soon after he fell asleep. He will probably recover, and if so, will be arraigned in the court. He is unmarried.

BOSTON AND NEW ENGLAND.

—Boston papers have recently contained the story of the refusal of the police to permit the use of a police ambulance to transfer a sick man to the hospital. It may be interesting to physicians of the city to know that the use of the police ambulances is restricted to accidents.

—The amount of patent medicines received at General Sheridan's cottage at Nonquitt, from well-meaning admirers, would, it is said, fill a small apothecary shop. The doctors, also, were deluged with advice by mail, about the treatment the patient needed. It came from all over the country, like the patent medicines.

—Judge Aldrich, of the Superior Court, granted an injunction, August 2d, restraining Dr. Frank L. Weir from practising as a physician in Taunton, Mass., or within ten miles of Taunton Green for five years, under an agreement made with the plaintiff in this case in July, 1887. The plaintiff, who went abroad, leaving his patients in the care of the defendant, alleged that in violation of the contract, the defendant had opened an office in Taunton.

—We learn from the daily papers that the thirty-five cases against the Boston & Providence Railroad Company, which arose from the "Bussey Bridge" accident, and were placed in the charge of one Boston lawyer, have been settled without a trial, two of the

cases being referred to arbitrators. In the case of Oscar H. Norman, the arbitrators awarded the plaintiff \$18,000. The highest amount received for any one injured in the accident was \$25,000, and it is understood that the whole cost to the company was \$100,000. The bills of physicians paid by the company are said to have been about \$100,000. It is stated that the fees of Mr. Winslow Warren, who acted for the company in settling claims, exceeded \$50,000.

NEW YORK.

— An ordinance has been adopted by the Board of Health requiring that at every hospital and dispensary in the city one or more rooms shall be provided for the reception and isolation of persons suffering from contagious disease.

— The attention of the Board having been called to the practice of undertakers carelessly throwing ice which has been used about dead bodies into the streets, where it is apt to be picked up by children and carried to their homes, the Secretary of the Board has been directed to notify all undertakers that the practice must be discontinued.

Miscellany.

A NEW QUARANTINE ACT.

The following is the quarantine act which passed the Senate May 3, 1888, passed the House July 23, 1888, and was approved by the President August 2, 1888. Its provisions go into immediate effect, and the quarantine buildings will be erected as soon as practicable. Steps will be immediately taken to secure sites for the quarantines not now on Government land:

AN ACT TO PERFECT THE QUARANTINE SERVICE OF THE UNITED STATES.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That whenever any person shall trespass upon the grounds belonging to any quarantine reservation, or whenever any person, master, pilot, or owner of a vessel entering any port of the United States, shall so enter in violation of section one of the act entitled "An act to prevent the introduction of contagious or infectious diseases into the United States," approved April twenty-ninth, eighteen hundred and seventy-eight, or in violation of the quarantine regulations framed under said act, such person, trespassing, or such master, pilot, or other person in command of a vessel shall, upon conviction thereof, pay a fine of not more than three hundred dollars, or be sentenced to imprisonment for a period of not more than thirty days, or shall be punished by both fine and imprisonment at the discretion of the court. And it shall be the duty of the United States attorney in the district where the misdemeanor shall have been committed to take immediate cognizance of the offense, upon report made to him by any medical officer of the Marine-Hospital Service, or by any officer of the customs service, or by any State officer acting under authority of section five of said act.

SEC. 2. That as soon after the passage of this act as practicable, the Secretary of the Treasury shall cause to be established, in addition to the quarantine established by the act approved March fifth, eighteen hundred and eighty-eight, quarantine stations, as follows: One at the mouth of the Delaware Bay; one near Cape Charles, at the entrance of the Chesapeake Bay; one on the Georgia coast; one at or near Key West; one in San Diego Harbor; one in San Francisco Harbor; and one at or near Port Townsend, at the entrance to Puget Sound; and the said quarantine stations when so established shall be conducted by the Marine-Hospital Service under regulations framed in accordance with the act of April twenty-ninth, eighteen hundred and seventy-eight.

SEC. 3. That there are appropriated for the purposes of this act the following sums, out of any money in the Treasury not otherwise appropriated, for the construction, equipment, and necessary expenses of maintaining the same for the fiscal year ending June thirtieth, eighteen hundred and eighty-nine.

[Here follow the specific appropriations for 1889, which are substantially as follows:

For the Delaware Breakwater quarantine, \$75,000; for the quarantine station near Cape Charles, Virginia, \$112,000; for the South Atlantic Station (Sapelo Sound), \$38,500; for the quarantine near Key West, \$88,000; for the Gulf quarantine (formerly Ship Island), provided for by the act of March fifth, 1888, \$15,000; for the quarantine station, San Diego Harbor, California, \$55,500; for the quarantine station at San Francisco, California, \$103,000; for the quarantine station at Port Townsend, \$55,500.]

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

CIRCULAR No. III.

WASHINGTON, D. C., July, 1888.

THE Committee of Arrangements takes pleasure in announcing to the members and invited guests of the special societies taking part in the Congress that the arrangements are sufficiently advanced to assure the success of the First Triennial Session of the Congress of American Physicians and Surgeons, which will be held in the city of Washington during the 18th, 19th, and 20th of September next.

A number of distinguished physicians and surgeons have signified their acceptance of the invitation to attend, among whom may be named Sir Spencer Wells, Sir Andrew Clark, Sir William McCormac, Drs. W. O. Priestley, William Ord, and Grainger Stewart, Mr. Lawson Tait, Mr. Victor Horsley, Mr. Thomas Bryant, Mr. Thomas Ammandale, Professors Ferrier, Esmarch, and Gerhardt, Drs. Rafael Lavista, of Mexico, J. L. Reverdin, of Geneva, O. W. Holmes and H. I. Bowditch, of Boston, Joseph Leidy, of Philadelphia, W. Kingston and Eccles, of Canada.

The preliminary programmes of the participating societies have been published. It is hoped the classified and final programmes will be forwarded without further delay. Several are already in possession of the Committee. As soon as all are received, the final programme of the Congress will be printed and distributed.

Places of meeting for the Congress and each of the

societies have been secured, conveniently located, so that members may interchange attendance without annoyance.

The meetings of the Congress will be held during the evenings, beginning at 8 o'clock P. M.; on the evenings of the 18th and 19th the meetings will be held in the main hall of the Grand Army Building, 1412 and 1414 Pennsylvania Avenue, and on the last (Thursday evening) in the hall of the National Museum. During this evening the Army Medical Museum and Library Building, alongside of the Museum Building, will be lighted and opened for the inspection of the members and invited guests. The meetings of the societies will be held during the day, according to the programme each may respectively provide. The sessions will be open to the profession.

On Monday evening, September 17th, a dinner will be given by members of the Congress to the guests of the participating societies. Invitations to this dinner will be sent only to the specially invited guests who have indicated their acceptance. The contributing members will receive cards of admission. It will be limited exclusively to members of the Congress and invited guests.

An informal collation will be served at Willard's Hotel on Tuesday evening, after the adjournment of the meeting of the Congress, to the guests and those members who may choose to attend. A similar entertainment will be served in the National Museum Building on Thursday night, after the final adjournment of the Congress.

Guests are requested to notify the Chairman immediately after their arrival in Washington, giving their address, and stating whether they have ladies with them. Special arrangements will be made for the entertainment of the wives and daughters of the guests.

Hotel accommodations are ample, and conveniently located to the places of meeting.

The Secretaries of the special societies are requested to forward to the Chairman the names and addresses of their foreign guests.

Members of the Congress and their guests are expected to register. A parlor in Willard's Hotel will be provided for that purpose, from which the mail of the members and guests will be distributed, and at which the city residence of each member or guest can be ascertained.

All communications should be addressed to the Chairman of the Committee.

SAMUEL C. BUSEY, M.D.,
1515 I St. N. W., Washington City,
Chairman Committee of Arrangements.

EXAMINATION FOR THE ARMY MEDICAL CORPS.

An Army Medical Board will be convened in New York City, New York, October 1, 1888, for the examinations of such persons as may be properly invited to present themselves before it as candidates for appointment in the Medical Corps of the Army.

Application for an invitation should be addressed to the Secretary of War, stating date and place of birth; place and State of permanent residence, and accompanied by certificates, based on personal acquaintance, from at least two persons of repute, as to citizenship, character and moral habits; testimonials as to professional standing, from the Professors of the Medical College from which the applicant graduated, are also desirable. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a Regular Medical College, evidence of which, his diploma, must be submitted to the Board.

Further information regarding the examinations and their nature, may be obtained by addressing the Surgeon General, United States Army, Washington, D. C.

Correspondence.

ABSCESS OF THE BRAIN.

VALPARAISO, May 14, 1888.

MR. EDITOR, — In the report of the meeting of the Suffolk District of the Massachusetts Medical Society, held January 11th, the discussion following the reading of Dr. Bullard's paper on "A Case of Cerebral Localization" was interesting; but what most forcibly called my attention was Dr. Bradford's statement that the sense of the meeting seemed, in reference to cerebral surgery, to be one of disparagement.

During my service as house-surgeon in the Boston City Hospital under the late Dr. Thorndike, it was my good fortune to see him trephine in a case of old injury to the skull, where years later cerebral symptoms developed, showing such persistent and progressive character that operative interference seemed demanded. Trephining was done, and I have never forgotten the look of that bulging, pulseless brain. Dr. Thorndike, with a narrow-pointed bistoury, boldly made a plunge into the brain, but failed to locate the abscess. He was then requested to make another attempt in a forward direction, but replied, "I do not feel warranted in doing more." The stupor increased, and the patient died that night; and at 7 A. M., when we went to the morgue to continue the search for the cause of the compression, it was a disappointment to find that the friends had removed the body immediately after death.

The case, however, impressed me deeply; and owing to the confirmatory tenseness and pulselessness of the brain, I always felt there was an abscess, and determined that should another such case present I would not fail to urge or continue the search.

The experience thus gained proved useful in the case of an United States sailor, whom, through the courtesy of Dr. Clark, Surgeon U. S. frigate *Hartford*, I was asked to see in consultation, in company with Olof Page, M.D., (University of Pennsylvania).

While on shore the sailor had received a scalp-wound, he knew not how. This was seen by the assistant surgeon, who cleansed and closed it by sutures. Suppuration, however, set in, and the wound had to be reopened. Two months later he had an epileptiform seizure, followed by headache, increasing drowsiness, stupor, and a falling pulse, which, when seen, was 46. Ether was administered, and Dr. Clark operated, making a crucial incision over the seat of injury, thereby disclosing a fracture, and with a trephine one inch in diameter, removed a section of bone. The membranes appeared healthy and natural, but attention was called to the bulging, pulseless brain, as indicating deeper trouble. A hollow needle was pushed into the central portion without result, and a second plunge made was followed by a like result. The aspect of the case was such that, on consultation, it was urged that another opening be made following the course of the line of fracture. This was done, and disclosed the brain membranes, as before, apparently healthy, but still unduly tense and full. Here, again, the aspirating needle did not reveal anything; though sanguine still of ultimately finding the seat of trouble, at my solicitation Dr. Clark consented to once more make an attempt, using a pointed grooved director which I had carried. This he employed, and pus welled up along the director. Over an ounce of pus flowed out through the crucial incision which the doctor then made through the intervening brain substance. The cavity was washed out with $\frac{1}{10}$ carbolic solution, and a drainage-tube inserted. The effect on the pulse was instantaneous, as it rose at once to 78. Recovery followed without interruption, and within a few weeks the patient walked to my office to report, the cavity filled and wound closed.

The report of such cases as this of Drs. Bullard and Bradford are instructive as establishing the localization of lesions; and such cases strengthen the confidence and assurance of both the operators and their assistants for

future work. I feel sure that they would in future be more ready to operate; and certainly, but for the experience with the case in the Boston City Hospital, it is not probable that the search for the abscess in the case related would have been continued.

Only recently the boldness engendered bore fruit in an unexpected way. The writer was asked by Dr. O. Page to a consultation over a case under his charge in the German Hospital of this city. The patient was a lad, twelve years of age, who for three or four days had been off his food, moody, complaining of headache, photophobia, with constipation, vomiting and fever. The evening previous he fell out of bed in a convulsion, and when seen had been for twenty hours in an unconscious state, breathing stertorously, and with a slow pulse. Meningitis was the diagnosis made, tuberculosis excluded, from the history and previous knowledge of the boy. He was a wild chap, and the

question arose, Could it be of traumatic origin? though previous to the convulsion he had denied any blow or fall on the head. However, on examining the shaved head, a marked irregularity was detected at one spot over the left parietal bone, as though there were a distinct depression. In view of his condition, we determined to cut down to the bone, and, if there were the slightest indication of injury, proceed to trephine. No attempt to check the bleeding was made; but having denuded the bone, we could find nothing to warrant further procedure. The following day the lad was perfectly conscious, continued to improve, and made a good recovery. No trephining was done, but the intention to proceed with it, even on a mere chance of benefit, led to the local bleeding, which did undoubtedly good, and changed the aspect of the case from one of fatal prognosis to recovery.

Yours respectfully,
JOHN TRUMBULL, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING JULY 28, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrheal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	1002	539	35.28	8.73	23.73	1.17	4.06
Philadelphia	1,016,758	459	239	27.72	9.02	20.02	5.06	.41
Brooklyn	751,432	404	250	38.50	7.25	30.00	.25	3.25
Chicago	760,000	389	255	50.50	7.25	40.52	1.75	1.50
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,155	219	123	39.69	8.74	33.58	.92	.92
Boston	407,024	240	129	35.70	13.86	30.24	1.68	2.94
Cincinnati	325,000	—	—	—	—	—	—	—
New Orleans	248,000	125	45	23.20	9.60	10.40	.80	.32
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	103	49	45.59	7.76	26.16	2.91	1.94
Pittsburgh	210,000	101	58	42.57	8.91	28.71	9.90	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	—	—	—	—	—	—	—
Charleston	60,145	40	17	22.50	15.00	17.50	—	2.50
Portland	40,000	7	4	42.84	14.28	14.28	—	28.56
Worcester	76,528	29	20	65.55	—	44.85	6.90	—
Lowell	63,530	—	—	—	—	—	—	—
Cambridge	64,079	40	23	42.50	7.50	37.50	—	2.50
Fall River	61,233	56	34	59.07	8.95	53.70	—	1.79
Lynn	51,467	9	0	22.22	9.09	—	—	22.22
Lawrence	40,175	27	10	37.03	11.11	29.60	3.70	—
Springfield	39,952	26	19	69.30	—	53.90	—	7.70
New Bedford	36,298	18	15	61.05	—	61.05	—	—
Somerville	32,807	20	9	35.00	25.00	30.00	5.00	—
Holyoke	22,887	—	—	—	—	—	—	—
Salem	28,781	9	3	—	—	—	—	—
Chelsea	27,552	8	6	50.00	12.50	50.00	—	—
Haverhill	24,979	11	8	27.26	9.09	27.27	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brookton	24,784	5	3	40.00	—	—	—	—
Gloucester	24,187	—	—	—	—	—	—	—
Newton	21,105	6	2	50.00	16.66	16.66	16.66	16.66
Malden	18,932	7	4	14.28	28.56	14.28	—	—
Fitchburg	17,534	9	3	—	11.11	—	—	—
Waltham	16,651	7	3	28.56	42.81	28.56	—	—
Newburyport	13,839	6	2	—	16.66	—	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 3,392; under five years of age 1,572; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 1,306, consumption 309, acute lung diseases 149, diarrheal diseases 967, diphtheria and croup 92, typhoid fever 68, whooping-cough 49, measles 44, scarlet fever 40, malarial fever 29, cerebro-spinal meningitis 13, erysipelas two, puerperal fever two, small-pox three. From whooping-cough, New York 20, Washington eight, Chicago seven, Brooklyn five, Philadelphia, Boston and New Orleans two each, Baltimore, Pittsburgh and Cambridge one each. From measles New York 23, Chicago eight, Pittsburgh and Worcester three each, Brooklyn and Baltimore two each, Philadelphia, Fall River and Lawrence one each. From scarlet fever New York 19, Brooklyn and Chicago seven each, Philadelphia and Baltimore two each, Washington, Fall River and Brockton one each. From malarial fever, New Orleans nine, New York six, Brooklyn, Baltimore and Washington four each,

Philadelphia one. From cerebro-spinal meningitis, Chicago five, New York three, Springfield two, Philadelphia, Baltimore and Worcester one each. From small-pox Philadelphia three, From erysipelas Brooklyn and Newton one each. From puerperal fever, Chicago and Washington one each.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending July 14th, the death-rate was 15.7. Deaths reported 2,835; infants under one year of age 755; acute diseases of the respiratory organs (London) 164, diarrhoea 130, whooping-cough 68, measles 45, diphtheria 36, scarlet fever 34, fevers 30, small-pox (Freston six, Sheffield two, London, Bolton and Leeds one each), 11.

The death-rates ranged from 10.6 in Bristol to 28.5 in Bolton; Birmingham 14.8; Blackburn 11.4; Bradford 16.1; Hull 12.4; Leeds 17.5; Liverpool 15.6; Liverpool 16.8; London 15.7; Manchester 22.7; Nottingham 13.3; Sheffield 13.1; Sunderland 19.0. In Edinburgh 16.3; Glasgow 16.4; Dublin 22.6.

Original Articles.

PEDUNCULATED PAPILLOMA OF THE BLADDER; SUCCESSFUL REMOVAL BY PERINEAL OPERATION.¹

BY F. S. WATSON, M.D.

E. B., aged thirty-seven, was alarmed three years since by a very profuse hemorrhage into the bladder. The urine, he said, was black with blood. This condition came on without any apparent cause. Ever since he has had intermittent attacks of hæmaturia. The urine sometimes has remained free from blood for several weeks at a time. Until very recently urination has been painless and natural as to frequency. He has had two or three attacks of retention due to the presence of clots in the bladder. Has often passed large clots, but never any fleshy bits until within a fortnight. He has lost about seventeen pounds weight during the last three years, but is still strong and in very good condition.

The urine at the time of his first visit contained bright blood in moderate quantity. Some pus, two or three small phosphatic concretions, which he had noticed for the first time in the preceding day or two, and a good many small shreds, which, microscopically, were seen to be the most typical examples of a benign papillomatous growth.

Rectal examination gave a slightly greater sense of resistance of the bladder wall to the finger over a small area just above the right lobe of the prostate. There was also tenderness on pressure at the same point. This was interesting to me, as it has been generally stated that unless cancerous these growths could not be detected by touch in the rectum. Nevertheless, I have been able to locate the growth exactly, previous to operation, in this case, and in one which I operated upon by the supra pubic method last summer by rectal touch. In the former case the growth was small and delicate. Dr. Cabot confirmed the observation in that instance. Bimanual examination was negative.

On April 23d, with the assistance of Drs. J. W. Elliot, H. W. Cushing and K. Lovett, I performed the perineal operation. Opening the membranous urethra on a grooved staff, the prostatic urethra and vesical orifice were rapidly dilated to admit the forefinger, which, upon entering the bladder, came at once upon a villous tumor, whose free surface was about the size of a small tangerine orange. It was attached to the bladder by a pedicle about one-quarter inch in length, and of the breadth of the forefinger, just above the right lobe of the prostate as per diagram. After some difficulty the pedicle was seized with a strong pair of curved forceps and twisted and chewed off, the larger portion of the tumor, which I show here, coming away in one piece. The stump of the pedicle and a smaller part of the tumor which remained behind were removed with curettes. Hemorrhage was free during the operation. The bladder was washed out with a hot solution of boracic acid four per cent.; and this perineal drainage-tube (of which I will speak in a moment) was tied into the bladder. The operation was long and tedious. The patient had delayed reaction, the pulse being very weak and 120 for twenty-four hours afterward. Bleeding continued to be steady and free for twenty-four hours, then gradually diminished,

ceasing entirely on the third day. Vesical tenesmus was frequent and severe for twenty-four hours, due to large clots plugging the orifice of the tube. Throwing an ounce or two of boracic solution into the bladder dislodged them, and relieved the patient at once until another one came into the tube.

Since the first twenty-four hours this patient has declared that he never felt better in his life. There was no rise of temperature, except for a few hours one week from the date of operation, due to a slight epididimitis. I removed the perineal drain on the fourth day. He was moved from bed to couch on the fifth day. The urine is entirely free from blood, and only contains a very little pus, which comes from the prostatic urethra. Frequency of urination, once in four or five hours; and he can hold it all night. The perineal wound is nearly healed, and recovery may be said to have practically taken place in ten days from the date of operation.

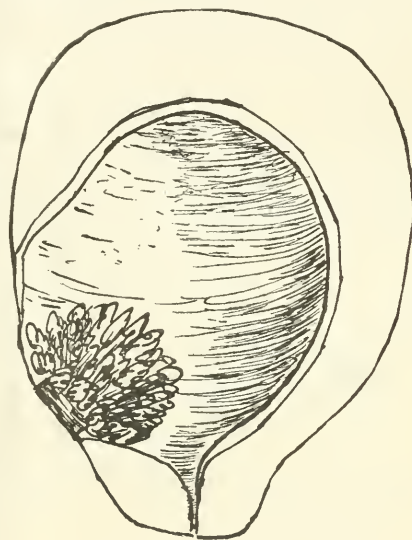


FIG. 1.

Three months have elapsed since reporting this case, and at this date of publication the patient is entirely free from all symptoms, and perfectly well.

In the last patient from whom I removed a tumor of the bladder I chose the supra-pubic route. The patient made an excellent recovery in nine weeks. I contrasted, then, the two operations, and pointed out their relative advantages and disadvantages, which I will not repeat now, but would only add that the operation should be selected according to the nature of the tumor as seen by the cystoscope, or felt by digital exploration through the perineum.

In those cases in which the growths can be removed by the perineal route I believe it is best to do so, as being less dangerous, and securing a shorter convalescence. If they are found to be too difficult to remove thus, the supra-pubic operation should be proceeded to at once.

¹ Read at the meeting of the Surgical Section of the Suffolk District Medical Society, May 8, 1888.

The perineal operation I consider much the more delicate and difficult.

In connection with the diagnosis of these cases, it is of interest to refer to a series of fifteen published in the *Lancet* of April 21, 1888, by Dr. Nitze.

The diagnosis was very accurately established in all by the cystoscope of Nitze, which Dr. Newell showed to this Society earlier in the year. In two of the cases hæmorrhage, although considerable, did not prevent a good view of the growths. The use of this instrument will, in all probability, render the employment of the other means of diagnosis which we have hitherto relied upon, unnecessary in many instances.

In eight of these cases the tumor was extirpated. In five the operation resulted in cure. One died from extension of malignant disease. In seven the supra-pubic method was employed. In one (a female) the tumor was removed through the dilated urethra. The operations were performed by different surgeons. This is the latest contribution to the subject.

It is in connection with this case that I wish to show a new form of drainage-tube to be used to drain the bladder after perineal section.

With a view to establish the distance from the outer perineal wound to the bottom of the bladder, and the curve of an instrument which should most easily fit the posterior urethra, and whose end should lie in and drain the bottom of the viscus, I took measurements upon twenty cadavers. The length in those measured varied from three and one-half inches to four and five-eighths inches. This distance, however, became unimportant, as you will see, because the construction of the instrument is such that its length lying within the urethra can be adjusted to all cases. The curve of the instrument is its important element. The measurements were made with soft metal. The result of the measurements gave the curve which is represented in this drainage-tube. The outer end projects horizontally from the wound when the patient lies on his back, the inner end occupies the lowest point of the bladder, the intermediate shaft fitting the urethra.



FIG. 2.

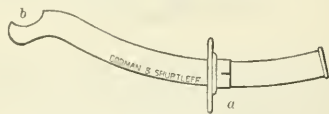


FIG. 3.

To complete the instrument it was necessary to have a plate attached to the tube by which to fasten it to the body, which could be pushed forward or backward on the tube according as the distance from the wound's surface to the bladder should vary in each case. This, as I have said, makes the difference in this distance in each case unimportant, and accommodates itself, also, to the extra length in cases of hypertrophied prostates. Accordingly, I had a plate fitting the perineum placed on the tube. The chief point in the successful construction of the instrument lies in a collar (a) of the depth of one-quarter inch, which projects from the front surface of the plate and embraces the tube, so that ordinary pressure will not force the plate back-

ward or forward along the tube, but it can be adjusted at a longer or shorter distance from the end of the instrument by firm pressure, and will remain wherever placed. In this way the varying lengths of the canal to be traversed by the tube can be met at once by the instrument, the placing of the plate at any given point in the course of the tube being all that is necessary to make a longer or shorter drainage-tube, the flow of water from the tube on its being passed into the bladder being the guide as to the point on the tube at which to fix the plate. Tapes led through slots cut in the four corners of the plate (Fig. 2) attach it to a band going round the waist, and hold it in place. A rubber tube attached to the outer end of the gutta-percha drain leads the urine into a urinal.

The tubes are designed to be of various calibres to meet different indications. The one used in this instance was 34 (French). In case of hæmorrhage some of the tubes are supplied with a raised flange just above the eye (b) so that they can be converted into a *canula à chemise*.

The question as to the employment or non-employment of drainage-tubes after perineal section is often discussed and contrary views expressed. My own belief is that they are sometimes useful and sometimes not. Previous to this I have watched two cases after removing tumors of the bladder. No perineal drainage was supplied in one, and insufficient drainage in the second. The vesical tenesmus in both was excessive and painful to watch, and was entirely referable to the presence of blood-clots. In this last case I was enabled to relieve the tenesmus almost immediately by washing the clots out of the tube, and keeping the bladder empty.

I feel no doubt as to the desirability of using a large drainage-tube in cases where free hæmorrhage is to continue (as it almost always does after the removal of vesical growths) for, at any rate, twenty-four or thirty-six hours, or until the bleeding decidedly lessens; then it may be removed with advantage. The employment of such drainage-tubes are also indicated generally for a longer period after perineal prostatotomies, where it is desired to keep the wound open, a fact demonstrated and emphasized by Mr. Reginald Harrison. After operations for deep stricture the use of a drain through the perineal wound for a day or two has seemed to me to diminish the chances of constitutional disturbance, but here the tubes of smaller diameter will answer better. It is hæmorrhage into the bladder that calls for the larger sizes, and that, of course, is especially liable to occur after removal of new growths, or in rupture of the viscus. The tubes are, as you see, made of polished hard rubber, with rounded ends and very large eyes, and ensure the largest interior calibre, together with the thinnest possible walls.

—The editor of a Western journal made a pathetic appeal on behalf of the condemned murderer Maxwell. Among other things he said: "God knows that the picture of that mother and sister hovering like *angles* about the prison bars is enough to move a heart of stone, but more particularly considering the medical aspects of the affair I think the governor should interfere in behalf of the condemned Maxwell." How do Prellar's relations view this angular movement?

TWO CASES OF INCISION INTO THE HIP-JOINT, WITH OBSERVATIONS AS TO "DISTRACTION" IN HIP-DISEASE.¹

BY E. H. BRADFORD, M.D.

The writer wishes to place upon record two cases of direct incision into the hip-joint at an early stage of hip-disease, done for the purpose of checking the night cries, which were exceptionally severe (fourteen and fifteen times during the night), and which other measures had failed to control. In both of the cases it was supposed that the joint contained pus within a resistant joint cavity. In one of the cases, a girl of six, the incision was not perfectly done, and gave incomplete drainage, and no benefit was obtained by the procedure. The "night cries" gradually subsided, and the patient eventually made a good recovery, which was not retarded though not aided by the incision.

In the second case, a boy of four, a small quantity of thick pus was evacuated and the patient's symptoms decidedly relieved, but not until a short time after the operation. Two weeks after the operation the night cries had diminished so that they were not present, or only occasional, while before they had persisted for weeks at a rate of fourteen and fifteen cries a night. The immediate effect of the operative interference appeared not to be beneficial, and the sensitiveness of the joint was increased for a few days; but as soon as drainage from the joint became well established, and compresses and pads and bandages incidental to aseptic dressings were discontinued, the night cries diminished noticeably. No difficulty was encountered in opening the joint. A straight incision was made behind the trochanter major, extending above it. After the skin and muscles were divided and separated, the forefinger was thrust down to the joint and used as a director, the capsule was reached at the upper and back part of the joint. This was opened and the opening dilated. No distension of the capsule of the joint could be felt, and but a small quantity of thick pus was evacuated. The capsule wall, however, was found to be comparatively soft. After a slight pull upon the limb the femur was pulled away from the acetabulum and the finger could be inserted between the acetabulum and the head of the femur; both were found to be covered with granulations. No explanation could be found for the persistent night cries. The incision, etc., were done under aseptic precautions. The treatment after the operation was the same as before; namely, fixation by means of a fixation frame, and extension by an extension splint, and at the end of three weeks the boy was allowed to walk about on his crutches, elevated shoe, and wearing his extension splint.

It cannot be claimed that the amount of benefit obtained in these cases warranted the operative interference. For even in the second case perforation of the capsule and relief of the intra-capsular tension, and consequent extreme sensitiveness would have taken place spontaneously, and in all probability the drainage from the joint would have been better than that at first afforded by the incision. In the second case, however, relief of the symptoms was obtained somewhat more speedily after the incision than if left to a natural course.

In a large majority of cases the night cries are readily checked by extension and fixation. It seems

reasonable to explain the exceptional cases where relief is not obtained in this way on the supposition that the joint, as in Case II, contained pus within a firm and resistant capsular wall, and that the bone of the femur and acetabulum are sensitive on undue pressure caused by reflex muscular spasm, secondary to the increased tension in the joint cavity.

In some instances the hypersensitiveness may be due to an abscess of the epiphysis of the head of the femur, and relief obtained, as has been shown by Macnamara, by perforating the head of the femur. Such cases, however, must be exceptional in children. It is possible that stretching the sciatic, as recommended by Macnamara, thus temporarily paralyzing the muscles and preventing spasm, may afford relief in extreme cases. But it would appear that less radical procedures were more practicable, and that we are to look to a perfection of "distraction," that is, mechanical separation of opposing bone surfaces of the joint as the most practicable method of relief. It has been denied that this, that is, distraction, is possible, but the frozen section of the case of hip disease reported by Lannelongue (the subject having been frozen with the affected limb pulled upon) demonstrates that distraction actually takes place.

If in an adult cadaver with normal a hip-joint, the muscles having been divided, the limb be pulled upon in a direction parallel to the axis of the body, it will be found that distraction does not take place. If in a fœtus of full term it will be found that it does. In Case II here reported, the fact of "distraction" could be readily determined. When the finger was placed upon the head of the femur it was found to be impossible to push it between the head of the femur and the acetabulum, the two bone surfaces being in contact. If, however, the limb was pulled upon by a force estimated at five pounds, the bones separated, and the finger could be readily inserted between the rim of the acetabulum and the head of the femur, the separation being about one-quarter inch. If the pull was discontinued the finger was caught by the opposing bones, and pressed upon with noticeable pressure.

In another case, a boy of nine, with hip disease, where a periarticular abscess was incised, the same observation was made, and the femur readily distracted from the acetabulum.

Through the kindness of Professor Dwight and Dr. Conant, of the Harvard Medical School, a number of normal adult hip joints were examined to determine the causes of the resistance to a distracting force.

It would appear that the chief cause of resistance was the cotyloid ligament, which in a normal adult hip is practically a cartilaginous collar holding the head of the femur in a tight socket. Direct pull on the femur in the line of the axis of the body causes the head of the femur to come in contact with the resistance of this non-elastic collar, and also encountering the resistance of the Y ligament. If the limb is slightly flexed and abducted, the femur can be pulled away from the socket if a fair amount of force be employed, showing that the influence of atmospheric pressure is not as great as has been supposed. If the limb is adducted it will be found that a pull in the line of adduction will bring the femur against the lower rim of the acetabulum.²

¹ Read at the meeting of the Surgical Section of the Suffolk District Medical Society, May 8, 1888.

² The experiments were made on dissected alcoholic specimens, where the knee-joint had not been opened, and with the capsule intact.

In young children, (it is to be borne in mind), the coxylid ligament is not as strong or as developed as in adults, and the acetabulum is much smaller, the bony rim of adults being cartilaginous in children. It is also true that in tuberculous osteitis in the hip, as in other joints, the cartilages and ligaments at an early stage become softened and incapable of resisting a distracting force. Where the head of the femur has been absorbed and no ankylosis takes place, distraction occurs from a slight force. The direction of force in which distraction encounters the least resistance in a normal limb is with the limb slightly flexed and adducted.

FIVE CASES OF PERINEAL SECTION WITH EXCEPTIONAL COMPLICATIONS.¹

SERVICE OF DR. C. B. PORTER,
Surgeon to Massachusetts General Hospital.

REPORTED BY DR. A. K. STONE.

CASE I.—CURETTING THE BLADDER FOR CHRONIC CYSTITIS.

J. A. W., aged forty-seven.

November 5, 1887. For the past seven months the patient has been extremely troubled with frequency of micturition. During the day he passed urine every fifteen to twenty minutes, and at night the intervals were never longer than one hour. At times he has severe vesical tenesmus, when he is obliged to keep his penis in a urinal for hours at a time, on account of the constant drizzle of urine. Before micturition there is pain, referred to the end of the penis. At times this pain runs backwards along the course of the entire urethra. Blood-clots have been frequently passed, and the urine contains abundant sediment, with shreds of so-called mucus.

Urine is pale; slightly alkaline; specific gravity, 1013; albumen, trace; sediment considerable; normal blood; little pus; numerous small round cells; crystals of ammoniac urate.

Examination by Dr. Porter under ether. No stricture; no enlargement of the prostate; no stone in the bladder.

For the next three weeks the patient's bladder was washed out from time to time with boracic acid solution, 1 to 150. The bladder was extremely intolerant, and the introduction of the catheter always set up violent tenesmus and caused great pain. Only about one ounce of the solution could be injected before still more severe contractions would be excited, and the wash fluid expelled with violence. The tenesmus would continue several hours after the catheter had been withdrawn. Urine still contains pus and mucus and a trace of albumen.

As the patient had made no perceptible gain during his three weeks' stay in the Hospital, Dr. Porter decided to drain the bladder, and for this purpose, on the 26th of November, performed perineal section in the usual manner. After the bladder had been opened, the surgeon's finger was introduced into the bladder, which was found to be firmly contracted, even under ether. The walls were velvety, as if covered with exuberant granulations. The entire surface of the bladder was then thoroughly curetted and washed out, first, with corrosive sublimate (1-5000), then with hot

phenyl (sulpho-naphthol). A chemise canula was tied in. In the afternoon the patient had intense pain, which was relieved by washing out the bladder and removing a number of blood-clots. A rubber tube was substituted for the canula.

Five days later, the record says that the patient has been very comfortable and has slept well. His urine contains no blood. The drainage-tube was removed from the bladder twenty-five days after the operation. The urine came about equally by the penis and through the perineal wound. The patient at once regained control of the sphincters of the bladder, and, instead, passing urine every fifteen or twenty minutes, as he did before the operation, the intervals were about one hour's duration. Three days after the tube had been withdrawn, there came an increase in frequency of micturition, accompanied by pain and tenesmus in the rectum, which was not relieved by free catharsis. Examination of the rectum showed an abscess of the prostate, which was opened and drained into the rectum. The rectum was packed with iodoform gauze, which was removed two days later. The rectum was then washed with hot phenyl twice a day.

From that time on the patient steadily gained in flesh and strength. For a few weeks the bladder was washed out every day, but now with very little pain or discomfort. Almost all the urine is passed by the penis. For a day or two all will be passed by the penis; then, for a few days, a little will come by the perineum. The urine is clear and contains no pus. The intervals between micturition are now two hours to two and one-half hours during the day; while the patient sleeps nearly all night, passing his urine but once or twice. There is a slight stinging sensation after each micturition. On the 6th of February, fourteen weeks after entrance, no urine having come by the perineum for six days, he was discharged.

Remarks. This case shows how tolerant the bladder may be of even severe operative interference. The idea of curetting the walls of the bladder was forced upon the surgeon by the nature of the case. It was an emergency of the operation, and had to be met and settled at once; and the wisdom of the decision is clearly shown by the after-history. I have been able to find no similar case recorded in the "Index Medicus."

NOTE.—Patient reported July 3, 1888. Has gained twenty pounds in weight. Is able to do a full day's work without any discomfort from frequency of micturition. Never has to get up more than once during the night to pass urine and usually holds it all night long. No perineal fistula.

CASE II. TUBERCULOSIS OF THE MEMBRANOUS PORTION OF THE URETHRA, RESULTING IN STRICTURE AND URINARY INFILTRATION.

O. C., aged thirty-two, box-maker, New Hampshire.

Patient has a good family history, and his previous history, up to six or seven years ago, has been good. He denies ever having a gonorrhœa or other venereal disease, and he never received any blow or injury in the perineum. Six years ago he began to have pain, starting in the small of the back and passing downwards and forwards towards the bladder. This pain was described as being like a pleuritic pain. The pain finally settled in the bladder and was very severe, and increased by any sudden movement or jar. Four years ago he had a swelled testis, and about the same time he began to be troubled with difficulty of micturition. The urine contained blood and considerable

¹ Read at the meeting of the Surgical Section of the Suffolk District Medical Society, May 8, 1888.

sediment. At times he has passed small particles, possibly of phosphatic nature. None, however, have been passed lately.

Such has been the condition up to four months ago, when he was taken one night with partial retention, being able to pass urine only in drops. Later, there was complete retention, and the urine had to be withdrawn with a small silk catheter, which he was taught to pass himself. Passage of this instrument caused considerable irritation to the urethra, so that for days he could pass his urine only in drops.

About eight or nine days ago a swelling appeared in the perineum. This tumor was finally opened by his physician and pus evacuated, and soon after urine began to escape by this opening. Since that time urine has come both by penis and perineum.

Patient is pale, emaciated, and very weak. Heart and lungs negative. Micturition about every hour. Urine of normal color; specific gravity, 1010; albumen, $\frac{1}{4}$ %; much sediment; much mucus and pus; bladder-cells in excess.

January 9th. Operation by Dr. Porter, under ether. Strictures, one three inches from the meatus, and one in the deep urethra, divulsed. A grooved staff was then passed, and the urethra opened through the perineum. The old fistulous tract was curetted. Deep down in the perineum a large amount of cheesy material was found; also a tract running off towards the left buttock, which discharged a thin, watery pus. The entire fistulous tract was laid open and thoroughly curetted. A catheter was tied in, and the wounds packed with iodoform gauze. The cheesy material was examined by Dr. W. W. Gannett, and the giant cells of tuberculosis found.

Eighteen days after the operation the catheter was permanently removed. It had worked perfectly during this time, and given the patient very little inconvenience. Urine then came entirely by the perineal wound. The patient has suffered but little pain, but is weak and miserable, and has a very poor appetite. He was given cod-liver oil and iron.

Ten days later the patient sat up for a short time in a wheel-chair. General condition is about the same. The urine is all passed by the perineal wound.

Two weeks later the patient was discharged at his own request. The patient has been up each day in a wheel-chair, and has grown decidedly stronger; eats and sleeps much better. The wound is still indolent, and shows little inclination to close. Sounds have been passed from time to time, but the urine is still passed by the perineum.

Remarks. The only gain for this patient was ability to evacuate his bladder without pain. It is of interest on account of the non-venereal history and the discovery of the giant cells of tuberculosis which in all probability were the source of all the trouble.

CASE III. EXTRAVASATION FROM STRICTURE AT THE MEATUS.

January 5, 1888. J. C. S., machinist, aged sixty-two.

The patient has had a stricture for twenty years. Several times in the last few years he has had retention, which would last for several hours. At the end of this time a plug of mucus would be passed, and the urine would then flow freely. No instruments have ever been passed. For the past few months the size of the stream has been gradually growing smaller and

smaller. There has been some cystitis. The meatus has been very small, and at times has had to be probed with a needle to enable the patient to start his urine.

Last night the patient found himself unable to pass any urine. However, he suffered no special discomfort, passed an easy night, and kept about his work until noon to-day. At this time he noticed that his scrotum was beginning to swell, and he began to suffer both from the distension of his bladder and of the infiltrated tissue.

Patient entered the Hospital at 8 P. M. in great pain and distress. Temperature 103°, pulse 112 and intermittent. The bladder was as high as the umbilicus. The scrotum was as large as a child's head and very tense. The penis was much swollen and distorted. The glans was not visible, and the urine dribbled through the long, edematous foreskin.

Operation by Dr. Porter, under ether. The scrotum was divided along the median raphe, and considerable bloody urine was evacuated from the tissue. The foreskin was then split upon the dorsum. The meatus was found to be practically closed, and would not admit even the finest filiform bougie. With some difficulty, a meatus was made. Then a filiform bougie was passed as a guide to the divulsor. Strictures were shown to exist both in the penile and deep urethra. After the divulsor had been passed, it was found impossible to introduce a No. 12 gum-elastic catheter. A Gouley staff was passed upon a filiform guide, and upon this staff perineal section was performed. A large quantity of ammoniacal urine was then drawn from the bladder. The bladder was washed with corrosive sublimate (1-5000), a catheter was tied in, and the wounds packed with iodoform gauze.

The patient reacted quickly after the operation. His pulse steadily improved, and he suffered practically no pain or discomfort. The wounds soon cleared and then began to granulate rapidly.

Three weeks after the operation the catheter was left out. The patient then passed all his urine by the penis. Four days later sounds were passed. These caused the patient considerable pain. That night he had a chill, and was very miserable for two or three days.

Four weeks and a half after the operation he sat up, and on February 13th, thirty-eight days after entrance, he was discharged. The only difficulty remaining was a granulating cleft in the scrotum. There was no pain or scalding on micturition, and no urine was passed by the perineal wound.

Remarks. Though there were other strictures besides the one at the meatus, yet this seemed from the history to be the one which was the cause of the trouble. The extravasation probably took place in the deep urethra at the weakest portion, and it was probably this spot that caused the inability to pass a catheter during the operation.

CASE IV. TRAUMATIC RUPTURE OF THE URETHRA: HEMORRHAGE EIGHTEEN DAYS LATER.

G. D., aged nineteen, mechanic, Haverhill, Mass. January 23, 1888.

Five days before entrance the patient fell down an elevator-well, striking astride a beam. For two or three days he was able to pass his urine in small amounts, but only with great difficulty and pain.

For the first day after the accident there was blood in the urine. Two days ago his urine stopped. An attempt was made to introduce a catheter, but without success. However, upon the withdrawal of the catheter, the urine came freely. Last evening it became necessary to aspirate the bladder. The patient entered with his bladder dilated to the umbilicus, and having passed no urine since the aspiration. His scrotum and perineum and buttocks were much bruised and ecchymosed.

Under ether, Dr. Porter, first having cut the meatus and keeping the beak of the catheter against the roof of the urethra, was able to introduce a gum-elastic catheter with ease. The catheter was kept in place for a week, and during this time the patient suffered no special inconvenience. On removal of the catheter, there was no difficulty of micturition, except a slight scalding.

Three days later sounds were passed. These gave no inconvenience, and the patient was up and about the ward and expecting to go home the following day, when he complained of general "bad feeling" on the morning of the third day after the passage of the sounds. In the afternoon he had a slight urethral hæmorrhage, which was controlled by ice. The next morning a catheter was again tied in. This caused considerable discomfort, and was removed on the following morning, and the bladder washed out with boracic solution. During the next half-hour the patient passed about a pint and one-half of blood by the urethra. He became quite blanched. There was a tumor in the perineum. Dr. Porter at once decided to do perineal section. After etherizing the patient, a staff was passed into the bladder and perineal section performed. A large clot was turned out from the perineal tissues, and in the midst of this infiltrated mass three spurting arteries were found and tied. A number of other small bleeding points were also secured. A catheter was tied in and the wound packed with iodoform gauze.

There was considerable difficulty in keeping the catheter in place and in running order, and from time to time the urine would break through the perineum, escaping from the bladder around the catheter. The catheter was removed in twelve days. The urine was then passed by the perineum. Ten days later sounds were passed, and after this the urine was passed partly by the penis and partly by the perineum.

Two weeks later only a few drops of urine escaped by the perineal wound. Bougies have been passed several times. There is still considerable tenderness in the anterior urethra.

Fifty-one days after admission patient discharged.

Remarks. The interest in this case lies in the fact that the secondary hæmorrhage took place eighteen days from the injury, and three days from any operative interference. In the meantime there had been no special pain or tenderness. There was no hæmorrhage after the vessels were once tied.

CASE V. EXTRAVASATION SHORTLY AFTER PASSAGE OF AN INSTRUMENT.

Longshoreman, colored, aged forty-five.

Patient had his first attack of gonorrhœa about twenty years ago, and has had some urethral discharge nearly ever since. Several times he has had fresh attacks, and several times chancroidal sores. For some years past he has noticed a gradual diminution

in his stream of urine. Two years ago he had retention, which was relieved by catheterization. He was then given a catheter by his physician, and told to pass it every few weeks. For the past six months he neglected to do so, and during the latter part of this time his stream has been rapidly growing smaller and smaller. Night before last, he determined to try to pass his catheter. The catheter entered the stricture, which was about two inches from the meatus, and he tried to force it through, but was obliged to withdraw the catheter on account of pain. Some blood followed the catheter. The patient went to work the next morning. During the day his penis and scrotum began to swell, but he still kept at work. Next morning, after passing an uncomfortable night, things were still worse, and he sent for his physician, who advised his coming to the Hospital. This he refused to do until evening, when he entered at 8.30 p. m. Both penis and scrotum were extremely swollen, the penis measuring twelve inches in circumference.

Operation by Dr. Porter, under ether. The prepuce, which was nearly three inches in length, was laid open upon the dorsum. A filiform guide was then introduced with considerable difficulty through a stricture situated about two inches from the meatus. The divulsor staff was then passed, but the smallest-sized divulsor could not be forced through the tough, cartilaginous stricture. The staff and guide were withdrawn, and the scrotum and perineum were split in the median line and the urethra opened in the perineum. Through this opening a large amount of foul ammoniacal urine was withdrawn from the bladder. The divulsor staff was then passed from the perineal opening forwards, and the divulsor forced with great difficulty through the anterior stricture. The catheter was then passed and tied in. The skin of the penis was freely scored to allow the escape of urine from the infiltrated tissues.

The patient was comfortable on the next day, but on the second day had a chill in the afternoon, and the catheter was removed. Four days after the operation, the penis, which was still very large, began to slough. This was a decided surprise, as the dark skin had prevented any discoloration from showing, and everything appeared to be progressing favorably. The penis and scrotum were kept in phenyl poultices for the next two weeks. During this time large and very foul-smelling sloughs separated from the penis, leaving only strips of healthy tissue along the sides and underneath, and also the under part of the foreskin.

At the end of the two weeks the sloughs had all cleared off, and large granulating surfaces appeared between the strips of healthy skin. These strips were then turned upon the dorsum of the penis, so as to cover in as much granulating surface as possible. The long portion of the prepuce was turned downwards and backwards. The dressing is now done with ung. acidi boraci. The prepuce did not hold in place, but the strips materially aided in closing the granulating surfaces. The prepuce was then bound down with a strip of gauze, and after some time was made to adhere to the under side of the penis.

During the time that the sloughing and granulating process was going on the patient suffered intensely from erections. He would have them repeatedly the same night, and their frequency was unaffected by bromide or opiates.

The patient never passed urine by the perineal wound, but through an opening into the urethra at about the point of stricture, two inches from the meatus. After the passage of a bougie part of the urine would come by the meatus and part by the urethral fistula. The wound in the perineum had entirely healed; the cleft of the scrotum was granulating rapidly. The upper portion and sides of the penis had closed entirely, and the under portion was closing in.

At the end of eight weeks the patient was discharged, to return at some future time for operation upon the urethral fistula.

Remarks. In this case the anterior stricture was the only one present, and the urethra was ruptured just behind it. This accounts for the enormous infiltration of the penis.

The medical after-treatment of these cases was practically nothing. There was no call for diuretics, as the presence of the catheter in the bladder, or the relief caused by division of the stricture, in some "reflex" manner seems to increase the flow of urine.

All the patients reacted quickly after the operations, and there was little or no call for stimulants. In only one case was there a chill soon after the operation. Here the catheter was promptly removed, and the patient given quinine. In three of the cases the catheter was retained for considerable time. There was no trouble from urethritis, and, indeed, so long as a catheter is in good running condition, patients at the Hospital seldom suffer any special inconvenience from its use. The catheter is held in place by a ligature tied about the catheter, and the ends are brought down along the side of the penis and held in place by a strip of plaster about an inch in width. A rubber tube, with a glass joint to enable one to tell at a glance whether or not the urine is running, is attached to the catheter and carried into a bottle which is suspended at the side of the bed. By this means all the urine is removed from the bladder by siphon. All wounds of this nature are packed after the operation with iodoform gauze. In a few days the gray sloughing condition disappears, and a dry, red surface remains. This condition will tend to remain if iodoform dressing is continued. If, however, the dressing is changed to a charpie dressing, soaked in balsam of copaiba, the granulations spring up almost immediately, and the granulation progresses much more rapidly than under any other dressing.

The only exception to be noted to this statement is in wounds in tuberculous subjects, and of this Case II is a good example.

TWO FORMS OF SKIN TUBERCULOSIS.

BY JOHN T. BOWEN, M.D.

As a result of the discovery of the tubercle bacillus, and of the greater precision offered to the diagnosis of tubercle by the histological advances of the last few years, attention has frequently been called to certain lesions of the skin, often obscure in their clinical appearances, which on pathological examination have proved to be examples of tuberculosis. Of late the examples have rapidly multiplied and a source of external infection has been demonstrated in many instances. Of especial interest as illustrating possible modes of infection, may be mentioned four cases ob-

served in Billroth's clinic, and reported by v. Eiselsberg.¹ In the first case the patient, a girl of sixteen, presented on the lobe of the ear, a hard, reddish-blue, non-ulcerated nodule, which appeared after wearing a piece of yarn, passed through the hole made for earrings. The second case is of an ulcer of the upper arm developing from a stab wound. In the third case a woman, aged fifty, after scratching an acne pustule on the face, developed at this spot an ulcer with thin jagged border. At the time this lesion appeared the patient had been washing the clothing of a woman ill with tuberculosis. In the fourth case there appeared a fistula on the arm, with a bluish appearance of the surrounding skin, at the site of a subcutaneous injection of morphia. Patient was a girl of twenty. In all of these cases the lesion was excised, and the characteristic appearances of tubercle found, as well as the tubercle bacillus. Other cases could be enumerated where the infection was derived from animals, for example, that of a veterinary surgeon who received a wound while opening the body of a tubercular cow, from which followed a tuberculosis of the skin, tuberculosis of the lungs, and death.²

Most of these observations unfortunately offer us but little light to guide us to a clinical diagnosis; indeed, the diagnosis has not usually been correctly made before the microscopical examination, and the whole subject is at present surrounded with great uncertainty and confusion. Two forms have, however, been extricated from this confusion, which are believed by some to represent distinct clinical types of tuberculosis; namely, a milary form, and secondly the verrucous tuberculosis, tuberculosis verrucosa cutis of Riehl and Palttauf. (Lupus, which in the present state of our knowledge must also be regarded as a form of tuberculosis, offers us in most instances well-defined points of difference from these two types.)

1. *Miliary Tuberculosis.* This form has been met with only in subjects affected with rapidly progressive tuberculosis of internal organs. Chiari³ reported the first case of this type, and was followed by Jarisch⁴ with the report of a case where the probable diagnosis was made *intra vitam*. Since then cases have been reported by Riehl, Schwimmer, Finger, and by several French writers. Chiari examined 7,000 bodies, (of which about sixty per cent. were tubercular), with reference to these lesions, with the result of finding them in five cases only, all on the lower lip. These lesions are described as shallow ulcers, situated at the juncture of the mucous membrane with the skin at the entrance to the mouth, nose, anus and vagina, and also upon the ear. The edges of the ulcer are said to be characteristic, being moderately firm and made up of a succession of small, jagged indentations, having an appearance as if "gnawed," (ausgenagt). Miliary tubercles, in the form of yellowish-white, transparent nodules, can be seen in parts of the ulcer. These lesions are rapidly progressive, all changes occurring by a degeneration of the miliary tubercles, and by the confluence of the small ulcers. This form has been often referred to as representing a true tuberculosis of the skin, and has been cited as an argument against the tubercular nature of lupus.

A case undoubtedly belonging to this class came

¹ Wiener Med. Wochenschrift, 1887, No. 53.

² L. Pfeiffer, Zeitschr. f. Hygiene, 111 Bd., s. 189.

³ Wiener Med. Jahrbücher, 1877, 3 Heft, s. 328.

⁴ Vierteljahrsschrift f. Dermat. und Syph., 1879.

under the writer's notice in Vienna. The patient, who was far advanced in tuberculosis of the lungs, presented a shallow ulcer at the edge of the ala of the nose, and a similar one along the lower edge of the septum. These ulcers were very sensitive to the touch, having a jagged edge, considerably infiltrated. Antiseptic remedies were tried, although tuberculosis was suspected, but with no influence on the lesion. Some time afterward, while studying in the pathological department, I discovered this patient on the autopsy table, and was able to obtain the lesions of the nose for microscopical study. The ulcers were unquestionably tubercular. Besides the usual appearances of a granulation tissue containing large epithelioid and giant cells, much cheesy degeneration was found, offering a marked contrast in this respect to the ordinary lupus. Examination by Ehrlich's method revealed the tubercle bacillus in abundance, a considerable number being found in every section examined.

II. *Verrucous Tuberculosis.* This includes the so-called anatomical wart, *verruca necrogenica*. That these anatomical warts, so frequently seen on the hands of persons working in dissecting-rooms and at the autopsy-table, were in reality produced by a local inoculation from tubercular virus, had been considered probable for a number of years, and was asserted by Besnier in 1883. Since then numerous observations, especially by the French, have shown the presence of tubercle bacilli in these lesions. In 1886, Riehl and Paltauf⁶ described a form that they named *tuberculosis verrucosa cutis*, which was similar to the *verruca necrogenica*. Eleven cases had been observed up to that time, all of which occurred in persons having to do with animals or with animal products. Five of these patients were butchers, two cab-drivers, one wheelwright, one farmer, and two cooks. The affection occurs in patches on the back of the hands and fingers, and in both clinical and histological appearances is similar to the *verruca necrogenica*. The affection has been very carefully studied by Riehl and Paltauf, to whose article reference should be made for an accurate description. The following case presents so many points in common with this form, that it may, I think, be properly reported here.

I am indebted to Dr. W. F. Whitney for the material for microscopical examination, and to Dr. O. K. Newell, in whose practice the case occurred, for permission to report it. The patient was a carpenter, fifty-two years of age, who had had for about nine years a lesion of the back of the left hand, two centimeters long and one and one-half centimeters wide, situated over the lower end of the fourth and fifth metacarpal bones. It was described as a raised patch, of a bluish-red color, moderately firm, and of a slightly papillomatous appearance. Occasionally pustules would occur over limited areas of the affected region, breaking down into small ulcers. The lesion had been treated with caustics and in other ways, but without permanent effect. Its progress was very slow. No history of any previous affection could be ascertained which would throw light on this manifestation. The patient had been for a number of years, engaged in the carpentering work required for the shipment of cattle by transatlantic steamships, and was often employed in repairing quarters that had been occupied by cattle during transportation, although it is by no means certain that the lesion had not made its appearance before

this period. The lesion was excised by Dr. Newell in 1885, the wound healed rapidly, and inquiry a short time since revealed the fact that there had been no recurrence, and that the man was enjoying his usual good health.

The diseased tissue that had been hardened in alcohol presented the appearance of a raised patch, of a more or less papillomatous character. Microscopically, the papillae were found greatly elongated and covered with layers of horny epidermis, and at the same time there seemed to be a growth of the rete downward into the corium in many places. In the papillae and upper portion of the corium lay nests of round and epithelioid cells, together with large bodies with nuclei at the periphery, corresponding exactly to the giant cells. In places a cheesy degeneration could be distinguished, although this was never pronounced. Beside this granulation tissue, purely inflammatory foci were present, seldom having reached the stage of suppuration. Sections stained by Ehrlich's method revealed the tubercle bacillus in the nodules of granulation tissue, in far less numbers than in the case of miliary tuberculosis mentioned above, but more numerous than in ordinary lupus.

This case, in its history and pathological appearances, corresponds pretty accurately with the *tuberculosis verrucosa cutis* of Riehl and Paltauf. In favor of this view may be urged the appearance of the lesion at an age when a first outbreak of lupus belongs to the greatest rarities; its clinical appearances and course; and the result of the microscopic examination, which shows a tissue undeniably tubercular, and which differs from that of lupus in the presence of bacilli in greater numbers, in the more superficial seat of the nodules in the upper layers of the corium, in the presence of cheesy degeneration, and in the appearance of foci of acute inflammation.

A case of this form of tuberculosis was reported last year by Finger, where the patient subsequently died from tuberculosis of the lungs, and Riehl exhibited this year a patient in whom *gommes scrophuleuses* and signs of internal tuberculosis had developed consecutively to this skin lesion.

As to treatment in these two forms, but little is to be said. In the miliary form, remedies have thus far proved of little avail. The patients are, as a rule, so far advanced in tuberculosis of internal organs that the skin lesion, although progressive and sometimes painful, becomes of secondary importance. For the verrucous form, radical treatment, either with the knife or cautery, is recommended. The usual practice in Vienna, for the last few years, has been thorough cutting, followed by cauterization with the solid stick of caustic potash. Less active agents, as salicylic acid, cause a diminution of the growth.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., BOSTON.

CONVERGENT STRABISMUS.

LANG and Barrett¹ report the results of the observations and treatment of 102 cases of convergent strabismus who were kept under observation for some considerable periods of time. The method of observation was as follows:

⁶ Vierteljahresschrift f. Derm. und Syph., 1886, I. Heft.

¹ The Royal London Ophthalmic Hospital Reports, Vol. xii, part I.

(1) The distant vision of each eye was tested with and without glasses.

(2) The power of fixation of each eye was tested.

(3) The movements of the eyes were examined, particular attention being given to the extent of the excursion outwards of the squinting eye.

(4) The angle of convergence was measured by a modification of Landolt's methods.

(5) The iris and ciliary muscles were completely paralyzed by atropine, or by homatropine with cocaine.

(6) The angle of convergence was again measured.

(7) The refraction was estimated by retinoscopy and the vision with the correcting glasses determined when practicable.

(8) The full correction was ordered for each eye, the glasses were obtained and worn, and then, and not till then, was the use of mydriatics discontinued.

(9) The patients returned at intervals of three to six months. At these visits they were examined with respect to—(a) The angle of convergence whilst the glasses were worn. (b) The angle of convergence when the glasses were removed. (c) The vision in each eye. (d) The presence of binocular or monocular vision as ascertained by the colored letter test.

(10) In those cases in which this treatment did not produce satisfactory results, the internal rectus was divided. The angle of convergence was measured immediately before and after the operation, and at the usual intervals of from three to six months. In no case were the two internal recti divided at the same time, and in a very few was it necessary to divide both. No other operative procedure was ever resorted to.

These 102 cases included no case of convergent strabismus from congenital or other paralysis of the sixth nerve. Their ages varied from four to thirty years, and there were included a few squinting myopic eyes, and eyes with corneal nebulae. The spectacles ordered were usually large circular ones, the centres being adjusted for distant vision.

IMPROVEMENT BY GLASSES.

The cases under ten years of age were 61, in 53 of whom some improvement was effected and in 8 there was no improvement. The cases over ten years of age were 41, in 34 of whom some improvement was effected and in 7 there was no improvement. Of the cases under ten years of age the improvement was noticeable *only* while the glasses were worn in 15 cases, and in 10 cases over that age the improvement was not present when the glasses were removed. Taking all the cases together the improvement only existed whilst the glasses were worn in 25 cases, or 29.4 per cent., whilst improvement after removal of glasses existed in 60 cases or 70.6 per cent.

Of the 87 cases in which there was improvement, the average original convergence was 23.2° the average amount remaining whilst the glasses were worn 9.1° and the average amount of improvement 14.1° . Of the 60 cases in which there was improvement after removal of glasses, the average convergence was 23.8° , the average amount remaining without glasses 13.5° , and average amount of improvement 10.3° . The glasses were worn usually from six to twenty-four months. As a general rule the longer they were worn the greater was the beneficial result. This remark applies with greater force to those under than to those over ten years of age.

Cases of Cure.—Cases of cure whilst the glasses were worn, under ten years of age, were 27, over ten years of age were 10. Cases of cure when the glasses were removed, under ten years of age were 8, over ten years of age 3. Thus, out of 102 cases, 37 or 36.3 per cent. were cured so long as glasses were worn, and 11 or 10.8 per cent. were permanently cured. In most cases even of cure, monocular vision alone was obtained, when binocular vision was obtained it was usually only whilst the glasses were worn; on their removal it became monocular. Their conclusions are as follows:

(1) The spectacle treatment of convergent strabismus produces a rapid and complete cure in about 10 per cent. of cases.

(2) In a larger number (33 per cent.) the cure continues so long as the glasses are worn. In these cases it would probably become permanent in course of time.

(3) The effect of this treatment is in direct ratio to the youth of the patient.

(4) Spectacle treatment should therefore in the great majority of cases be adopted as an indispensable preliminary adjunct to any operative treatment. By this treatment there is no chance of producing the absolute divergence which occurs sometimes after tenotomy. Exceptional cases occur in which the treatment is inapplicable on account of the occupation of the patients.

(5) If the spectacle treatment fails to produce absolute cure, a division of the internal recti generally suffices, together with the use of glasses, to remedy the deformity. In some few cases the opposite internal rectus must be subsequently divided.

Professor Landolt's² method of proceeding in a case of strabismus is as follows:—The nature of the squint paralytic or concomitant, is determined; its degree is ascertained by angular measurement; the field of fixation is mapped out, at least in the plane of deviation; the amplitude of convergence and accommodation, as well as the refraction and the visual acuity are determined. If possible the date at which binocular vision was lost, should be ascertained, and also whether diplopia can still be produced by prisms, the deviating eye should be placed in as favorable a condition as possible by correction of the ametropia, the use of a colored glass before the other eye, etc. If the patient be young, every means at command which may diminish the squint should be used before proceeding to operate. In convergent strabismus, all work requiring accommodation for a near point should be stopped, the eyes atrophinized, the total amount of hypermetropia corrected, and, if possible, stereoscopic exercise regularly practiced.

Our means of remedying divergent strabismus without operation are less efficacious. Nevertheless, if the condition be due to general or local muscular weakness, tonic and gymnastic treatment may render good service. Professor Landolt continues: I never operate for strabismus until I am convinced that I have obtained all possible help from these methods of "pacific" treatment; and having done so, and having by their use reduced the degree of deviation, the operation most suitable to the remaining squint must be performed. Our operative procedures, no matter how skilfully we perform them, are so clumsy in compari-

² Archives d'Ophthalmologie, Sept.-Oct., 1887. Ophthalmic Review, Jan., 1888.

son with the delicacy of the functions of the ocular muscles, that if we trust to them alone we shall certainly meet with failure.

Simple tenotomy will not correct a *convergent strabismus* of 20°; and in such an instance there is a choice of two methods of treatment: (1) division of both internal recti; (2) division of the internal and advancement of the external rectus of the same eye. Landolt advises recourse to the former method if the squint be alternating, to the latter if it be constant. If, a few days after the operation some divergence be present, atropine should be relinquished and the patient allowed to use the eyes. The natural tendency to converge will then aid in restraining the outward deviation. When, in spite of this, the eye still deviates, a slight advancement of the tenotomized muscle is preferable to division of the tendon which has been readjusted. *Divergent strabismus* is much less easily dealt with, and more care should be taken not to produce an over-correction by operative means. Before deciding on the mode of treatment, not only must the degree of deviation be ascertained, but also the power of the abductor and adductor muscles. Examination of the field of fixation will often reveal a considerable limitation of the inward movement, and this not alone in the squinting eye. If the divergence be of low degree, for example, 10°, and the field of fixation reach at least 47° inward, a single tenotomy may suffice; if not, tenotomy of the external rectus of the second eye should be performed. In cases in which the divergence is of long standing and high degree, and the field of fixation is greatly limited inwards, tenotomy of the external, with advancement of the internal rectus is urgently called for; and it may be necessary, in order to complete the cure, to perform a similar operation on the second eye. Before having recourse to this second operation, the means at our disposal to increase or induce convergence should be tried. No atropine should be used; only the eye operated on should be bandaged if tenotomy have to be performed, and both eyes (when advancement of the muscle has been done) only for two days. The uncovered eye will then, during its movements, have the effect of inducing similar action in the muscles of its fellow.

THE RETURN TO THE FLAP OPERATION.

Schweigger,³ in an article under the above caption after a review of the origin and history of Von Graefe's linear peripheric extraction with iridectomy, says: 'The tendency from the beginning was to make a larger incision. This was only possible by a return to the flap operation, and so sailing under false colors of linear incision, a gradually growing flap was used. Having been obliged by force of circumstances to return to the flap incision, the next question was whether the small knife was suitable for it. It was excellent where a small flap was needed, with a small anterior chamber, as in many cases of iridectomy for glaucoma, etc. If, however, it was necessary to make the flap larger than the width of the knife the incision could only be finished by a sawing movement. The most appropriate instrument, as demonstrated by G. A. Richter over one hundred years ago, is one where the mere passing forward of the knife finishes the incision, with the exception of a small bridge of tissue which is divided when the knife is withdrawn. The incision is no larger than that made with the small knife. It

may, indeed, be made any size desired, while the advantage of a regular clean cut favoring cicatrization and the preservation of the curvature of the cornea quite is evident. For this reason he gave up the use of the small knife for cataract operations about a year ago, and commenced using a knife which was 5 mm. wide at a distance of 30 mm. from the point. He soon, however, recognized the advantages of the old cataract knife, and used first one 6 mm., and finally one 7 mm. Since then he has done all extractions of cataract senilis with the triangular knife, with a flap about 4 mm. high, gradually omitting iridectomy, at first in well-chosen cases, and later more often. With a flap 4 to 4.5 mm. high there was not the slightest difficulty with the iris. If a few pigmented points are brought away with the cataract it is not of much consequence.

Then the important question arose as to whether the danger of prolapsus iridis in the classical operation was really so black as it was painted, and the more he studied this point the more it seemed to him that its dangers had been exaggerated. In sixty cases of extraction, as described above, five only resulted in prolapse of the iris. Too large an incision is one of the causes to be avoided. It is desirable to have a clean cut; not too peripheral, but in the transparent cornea, on the anterior edge of the limbus. Conjunctival flaps may be omitted without disadvantage. With the escape of the lens there is almost always some prolapse of the iris, but it can easily be stroked back with a curette. Should, however, the iris be pushed into the wound by the pressure of the vitreous body, it is much better to do iridectomy at once. In sixty-two cases without iridectomy, prolapse of the vitreous happened but twice. Prolapse of the iris is not necessarily caused by this, for the vitreous body presses it backwards, especially if the hyaloidea does not tear directly behind the incision. Eserine should be dropped into the eye directly after the operation, and at the first change of the bandage perhaps. If used too long it favors iritis. The main point of the after-treatment is that any opening of the lid should be avoided. Eserine, atropine, etc., may be used without opening the eye. A contracted pupil is desirable for the first two days; after this mydriatics are necessary, as more than fifty per cent. of all cases heal with posterior senecchia. If the first three days are safely passed over, there is no danger of prolapsus iridis, unless some unforeseen accident should take place. It is a remarkable fact that the forms of incomplete opacity of the lens, in which extraction is permissible at all, give just as good results if the extraction is done without as with iridectomy. The flap operation without iridectomy will regain its proper position, and for this we have to thank solely the introduction of cocaine.

Knapp⁴ in an article upon the extraction of cataract without iridectomy emphasizes the following points. It is of importance that the flap be of sufficient size: for a hard, ripe cataract fully two-fifths of the corneal edge of the limbus conjunctival. A conjunctival flap is somewhat in the way during the operation, but it acts favorably upon the closure of the wound, and is a protection from secondary infection. The peripheric location of the corneal section does not in itself favor the occurrence of prolapse of the iris. The mode of expelling the lens differs from that used in the combined extraction. The pressure should be made

³ Archives of Ophthalmology, Vol. xvi, No. 1.

⁴ Archives of Ophthalmology, Vol. xvii, No. 1.

through the cornea on the lower portion of the lens directly towards the centre of the globe. In this way the flap rises, tilts forward, and the lens passes through the pupil with the least bruising of the iris. The removal of the cortex is done in the first place, by following up the escaping cataract with the spoon, continuing the pressure, so that, if possible, the whole cortex may come forth with the lens. The moment the lens is out, the speculum should be removed, and in case any remnants lag behind, they should be wiped out with the edge of the lower lid, care being taken that neither the edge of the upper lid or any other organic part, be passed through the wound. These pressing movements with the lower lid can be done boldly and without injury, are very efficient, and when they fail other means are not likely to succeed. During the operation the eye should be irrigated frequently with Panas' solution. In this series of one hundred cases operated upon in this manner, prolapse of vitreous occurred five times. In four of them the iris was pressed back. All got well without incarceration, and obtained good vision. Prolapse of the iris occurred in twelve cases; in four the prolapse disappeared spontaneously in the course of some months. In four others it was removed with scissors. In one, produced by a hurt, it was reduced two hours after its occurrence. No reaction followed and the pupil was clear and central. In two cases the prolapse remained. In eight cases the iris did not protrude but was more or less extensively united to the scar. Twenty times the presence of iritis or posterior senescence is noted. Cyclitis has not occurred at all. After secondary operations in necessary cases the results were 96 per cent. good, 3 per cent. moderate, 1 per cent. failure.

A NEW METHOD OF CORNEAL TRANSPLANTATION.

Von Hippel⁶ in an article with the above title reviewing at length the history of corneal transplantation, concludes that the subsequent opacity of the transplanted portion of the cornea is due to the fact discovered by Leber that the transparency of the cornea depends upon the integrity of the epithelium lining Descemet's membrane, as the edges of that membrane after a transplantation are always found to have curled back from the cut edge and thus allow the entrance of the aqueous, and from this cause the graft swells and so becomes opaque.

The essential factor of our author's new method is that in trephining the leucomatous cornea he does not perforate but leaves Descemet's membrane intact, and upon this plants his graft.

In his first cases, which were failures, he attributes the cause to the fact that the graft taken from the cornea of a dog was cut in the same manner as the original piece removed from the leucomatous cornea and the difficulties of removal of the piece injured his graft. In his subsequent and successful operation, he chose a rabbit to take the graft from and trephined the whole thickness of the cornea and planted this on Descemet's membrane as before. In his successful case the vision was improved from counting fingers at two metres to $\frac{20}{200}$. His methods of operation are as follows:

(1) The lids being opened by an elevator he sets the trephine vertically upon the cornea and fixes the globe by two pairs of forceps. One to the inner and one to the outer side of the globe. Although cocaine

is used for the anæsthetic there is always more or less bleeding from the cut in the leucoma.

(2) The removal of the trephined portion of the cornea is the most difficult portion of the operation, and is done in the following manner. The trephined portion is seized with a pair of strong, straight, iris forceps with sharp teeth, and dissected off with a Graefe cataract knife. The aim being to remove a piece of equal thickness and to leave the cut margins vertical. This step of the operation is much complicated by the hæmorrhage, and when done, a solution of bichloride is instilled, and the lid closed with gentle pressure to arrest the bleeding.

(3) With the same trephine a portion of the cornea of a rabbit, anæsthetized by cocaine is removed. A young rabbit is preferable on account of the thinness of the cornea. The fixation of the eye of the rabbit is a somewhat difficult operation and is best done by inserting a strabismus hook behind the eye around the nerve and drawing the eye as far out of the orbit as possible so as to press firmly against the lids.

(4) The graft is then laid upon the cornea near to the defect caused by the trephine and then slid with a spatula into the area of the wound. The transplanted portion must not project above the surrounding tissue or it is liable to be dislodged. As soon as the graft is in the proper position the whole cornea is dusted with a thin layer of iodoform, the lids closed, a bandage applied over both eyes, which is allowed to remain undisturbed for two or three days, and on the eighth or tenth day the eyes can be left opened, if all injection has disappeared.

Von Hippel's conclusions are as follows:

(1) The possibility of corneal transplantation by my method with the permanent transparency of the flap with a material improvement of the vision is undoubtedly demonstrated.

(2) Even in the case of leucomata which extend through whole thickness of cornea.

(3) It is impracticable in adherent and bulging leucomata.

(4) The operation is without danger and with very little pain to the patient, and so can be undertaken in all cases in which there is the least probability of a good result.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SURGICAL SECTION.

G. H. MONKS, M.D., SECRETARY.

MEETING Wednesday evening, May 8th, the Chairman, Dr. J. COLLINS WARREN, presiding.

On motion of the Secretary, it was *voted* that a Committee of two be appointed by the Chair, who should assist the Secretary in selecting subjects for the meetings of next year, and in securing the services of those members who, in their judgment, should be best suited for the presentation of such subjects.

Dr. E. H. BRADFORD read a paper on

TWO CASES OF DIRECT INCISION INTO THE HIP-JOINT, WITH OBSERVATIONS AS TO "DISTRACTION" IN HIP DISEASE.¹

Dr. W. M. CONANT said: At the request of

⁶ Archiv. für Ophthal., Band xxxiv, Abtheilung I.

¹ See page 147 of the Journal.

Dr. Bradford, I have brought before the Section a number of ligamentous preparations of the hip-joint, and will demonstrate them with special reference to the function of the cotyloid ligament as a means of holding the head of the femur in the acetabulum. It is hardly necessary to mention the ligaments of the hip, yet it may recall some forgotten points if I do so. The ligament teres connects the head of the femur to the acetabulum.

The cotyloid ligament surrounds the rim of the acetabulum and deepens it. Below the notch there is the transverse ligament, and over this the cotyloid extends, so that there is a complete circle of cotyloid ligament. This specimen shows that the outer edge of cotyloid extends beyond the head of the femur, so that its outer margin grips the constricted portion of the femur just below the head, when it is pushed into the bottom of the acetabulum. Then there is the capsular ligament, which surrounds the joint, and this is strengthened in front by the ileo-femoral or Y ligament. This ligament extends from the inferior anterior spine of the ilium to the anterior trochanteric line, and is put on the stretch when the body is in the erect position. This ligament is very strong, and serves as a check to hold the femur in position when the body is erect.

It will be noticed that the head of the femur is not a perfect circle, and that the longest diameter is from superior portion of the head to the inferior portion at the neck. This makes evident the fact that in certain positions the longest diameter of the head might impinge upon the cotyloid ligament, so that the amount of distraction on separation of the head would be very slight.

This specimen shows that with the femur extended the longest diameter of the head impinges on the cotyloid. It may be said that the Y ligament holds the head because it is on the stretch; if, however, this is cut, there is still very little distraction. But if you flex the femur, the shorter diameter of the head now impinges on the cotyloid, and on pulling there is more distraction. If, now, I abduct the femur, as well as flex, you have the shortest possible diameter against the cotyloid, and on using force it is possible to get very considerable distraction.

If you pull down with the femur in the line of the body you get almost no distraction, but as soon as you flex and abduct the head of the femur comes out with very little difficulty, and can as easily be put back into the acetabulum.

DR. CHEEVER: The difficulty of draining the hip-socket, I should think, would be very great. In former times I frequently excised the diseased head of the bone, and even then was so struck with the difficulty of draining and washing out the cavity, that I adopted the practice of cutting a large triangular flap of skin and muscles, and sewing it or pinning it back, thereby converting the cavity of the acetabulum into an open crater or saucer, which could not close up. The depth of the parts, the thickness of the fascia, and the contractions of the muscles, I should think, would render drainage into the hip, which was incised by any ordinary incision, almost impossible. I had an idea that the benefit derived from extension was not so entirely by drawing the diseased surfaces apart, but was also by holding the muscles absolutely still, so that, being tired out, they did not give spasmodic contractions on the slightest nervous provocations. How-

ever it may be, the fact remains that in the majority of cases of hip disease, unless acute abscess is forming, extension almost always gives relief.

DR. WHITMAN: I understand, then, that Dr. Bradford recommends extension with abduction in these cases, considering the fact that the leg can be more easily extended when abducted.

DR. BRADFORD: Yes, in certain cases. In adults it is evident that extension in the line of the body does not cause distraction; that is, separation of the bones. In children, of course, that is not as true, because the cotyloid ligament is not so firm and the acetabulum not so large as in adults. In all probability it is not necessary to abduct the leg, but in extreme cases, such as I referred to to-night, I should say that extension in the line of flexion and abduction would give better distraction than the ordinary way.

DR. BRADFORD: In regard to the drainage of the hip-joint, I think that Dr. Cheever is certainly right that it would be practically impossible to drain the hip-joint thoroughly by a simple incision. In the case that I reported, the second case, I did not expect to entirely drain the joint. What I did expect, however, was to cut down upon the joint that was distended by pus, and allow the escape of that pus by incising the resisting wall of the capsule. I accomplished it in a measure, but I don't think I accomplished it as thoroughly as it could have been done, and I did not find the joint as distended as I expected to. There was not more than half an ounce of pus in the joint. I think that Dr. Cheever has expressed the object of extension exactly: that it is not only to cause distraction, but also to counteract the spasm of the muscles. I laid stress upon the subject of distraction because it is a matter which is to a certain extent under discussion, and it seemed to me important to show that distraction could be carried out.

DR. J. W. ELLIOT showed Bozeman's apparatus for

DRAINAGE OF THE BLADDER THROUGH THE VAGINA, and explained its construction and action.

DR. A. K. STONE reported

FIVE CASES OF PERINEAL SECTION WITH EXCEPTIONAL COMPLICATIONS²

occurring in the practice of Dr. C. B. Porter.

DR. PORTER said: It is not my custom to report my cases at a medical meeting by proxy, but these cases had been carefully prepared for publication in the JOURNAL by Dr. Stone, and at the request of the Secretary of the Section he consented to read them here to-night. The case of curetting the bladder interested me very much on account of the peculiar condition of the mucous membrane, which felt like exuberant granulations, covering the whole surface, the bladder being firmly contracted, and I said at the time of examination: "If this were anything else, I would curette it." And then I thought at once: "Why should I not do it under the circumstances?" By a pressure above the pubes the whole bladder was readily brought into relation with the curette, and its whole internal surface was cleaned just as an epithelial ulcer on the face would be scraped. The after-progress of the case certainly proved that the treatment used was the best thing that could have been done. From passing urine every fifteen minutes,

² See page 148 of the Journal.

and from its being nasty and bloody, it very soon came away clean, and the patient went from the hospital holding the urine very much better, and rising but once or twice in the night.

The case that proved to be tuberculosis was exceedingly interesting to me, because it was a complication which I did not expect. The man was in a pasty, waxy condition, but I did not think that he looked worse than a great many cases that present themselves with stricture, with an abscess in the perineum or perineal fistula, and I think that it was not so much the stricture produced by gonorrhœa which caused the obstruction, as it was the swelling of the parts about the urethra, and the involvement of the urethra by the deeper deposit. I did not suspect the tuberculosis until I saw the cheesy deposit as it appeared under the knife.

The case, where there was a traumatic rupture of the urethra, was interesting to me from the fact that the man had very little hæmorrhage, if any, from the urethra, until the eighteenth day. And that was after he had been free from his catheter for a number of days, and sounds were passed merely to insure the patency of the urethra, in order that he might be discharged, he being practically well, and there being no swelling and no soreness. The ecchymosis had almost entirely disappeared. Then, supervening on that was this very sudden hæmorrhage, so that while I was making the visit in the morning, being absent from the room perhaps half an hour, the patient bled a pint and a half from the urethra; and that without any previous manipulation, with the exception of a catheter in the urethra. Then on cutting down and turning out the clot, it was surprising to find that there were three separate spurting vessels in the tissue which had not been cut with the knife. They had probably been plugged, and for some reason had been opened afresh, and given rise to this very marked hæmorrhage.

I think the case in which the penis was so enormously swollen, interesting from that fact, and also from the fact that so much skin from the penis was lost. The patient certainly did remarkably well.

DR. F. S. WATSON: The first case seems to me a very valuable contribution to bladder surgery. It is, so far as I know, a unique case, as Dr. Stone has pointed out, and illustrates the advantages of a keen surgical intuition. The only case that I can recollect, in which recourse was had to the same procedures, is one which Guyon publishes. That was in a case of tuberculosis, the disease being limited to the bladder, in which the bladder was curetted and touched with the Paquelin cautery. That patient recovered from the tuberculosis, the bacilli disappearing after that had been done. He did it in a second case, in which the bacilli disappeared, but the patient continued to have cystitis. So far as I know, these are the only two cases in which this procedure has been done.

The second case, of tuberculosis, was interesting to me more especially in regard to one point which I have had my attention called to lately, and which I expressed Saturday night in reporting a case of tuberculosis. Two years ago that patient came to me with small swellings in both epididymes. These preceded the appearance of urinary symptoms by a short time. The question came up again a few days ago, in a case where there was a chronic swelling of the testicle without suppuration or urinary symptoms, as to the desirability of removing the testes in such cases. It seems

to me a very important one. Certainly I never watched such suffering as that which the first patient underwent after developing tuberculous disease of the bladder and kidneys which had its origin in the cheesy masses in the epididymis. If anything could be done to relieve these cases I think it would be of the greatest possible importance. In my opinion these chronically inflamed testes should be removed as soon as possible. I would also like to call attention to the inefficacy of division in the fourth or fifth case, and point out the fact that it would seem to have been a case well suited to the cutting operation with the Maisonneuve, using the small knife first, and later the larger one of Otis. It is in these cases that this operation is most appropriate and efficient.

DR. CHEEVER: I would not be willing to let so interesting a series of cases pass without adding a little to it from my own experience. In the first place, in regard to the permanent opening. My experience is very small; I have seen but one case. I did the operation upon a brother physician at his own request. He had been a patient of the late Dr. Curtis. He suffered very much from irritability of the bladder, and desired an outlet to be made. The operation was done but afforded no permanent relief, although the opening was not allowed to close for a good while. With regard to the tuberculosis, I believe that I have a case at the present moment, in which an indolent abscess has formed between the perineum and bulb, and side of the sacrum. At first it was thought to be a fistula, but later it was found to be not urinary, but a sinus, discharging small cheesy masses which came from the deep tissues about the nates and perineum. The patient was a young man of very feeble habit, and of a strongly tuberculous family.

In regard to operations for extravasations, I would like to say that I can recall no case which has failed to do well where I made a direct opening so as to give exit to the extravasated urine through the perineum except in a few cases where it was afterward found as shown at the autopsy, that disease of the kidney existed. I think that every one will agree that these cases are very appalling and threatening; that they often occur in very dissipated individuals; and frequently in consequence of a debauch or something of that sort, and the extravasation is very large and very destructive, and the patient appears to be reduced by them to a low ebb; that the relief by the direct outlet through the perineum is immediate and very great, and almost all cases recover unless there proves to have been some disease of the kidney. In that case I think cases almost all die.

The only other point is in regard to the fifth case. I have had in the course of a number of years two cases of great destruction of the penis. One case was rather unusual, in which the patient got drunk and lay out in the snow, with his genitals exposed. Frost-bite of the genitals must be very rare, of course. In this case the penis froze, and subsequently sloughed, with great loss of tissue. In the other case the patient was about some machinery and incautiously straddled over a revolving arm, which caught his trousers and rolled him up rapidly, caught the scrotum, and stripped off pretty much all the skin from the penis. Both these cases survived. Both were patched up in various ways by plastic operations, and had resulting organs through which they could pass water, etc., pretty well. In both of them there were these

painful erections, which I first looked at as evils, but which on more mature consideration I came to regard as really beneficial to the individual, in spite of the suffering, for if they had not occurred the subsequent contractions would have been very much greater. They kept the organ more or less distended through a certain part of the twenty-four hours, and in spite of the patient's sufferings, I have no doubt they were beneficial in the subsequent history of the case, for the parts, especially about the urethra, were not bound down by adhesion.

DR. PORTER: I would like to make one more suggestion. It is a question, in the light of what Dr. Cheever has just said, whether some of these cases in which a free opening through the perineum has been made for cystitis — those cases that do not recover — would not be benefited by curetting the bladder. Whether it is not due to the fact that the mucous membrane is in such a flabby granulating condition that there is no chance for recovery. I only throw out the suggestion as a question to be considered in these operations, in reference to making a much more careful exploration of the bladder with the finger to determine that, in cases that may present themselves hereafter.

DR. J. C. WARREN: In the after-treatment of cases of perineal section, I have of late been in the habit of introducing the catheter through the perineum, and not through the penis. I was led to that custom by an experience of mine in one case, where the catheter had been retained for a couple of days, the wound was healing nicely in the perineum, and had covered over the catheter, when a gush of urine took place outside the catheter, and an extensive extravasation into the scrotum was the result, with sloughing of the scrotum. It always seems to me, best therefore, to drain the bladder just as you would drain an abscess cavity with a drainage-tube, until a period has arrived when such a disaster as that spoken of would have been impossible; that is, when a fistulous opening had been made through the perineum, surrounded by granulations. After that, this fistulous opening might be allowed to contract, just as the fistulous opening in the trachea would close in after the removal of the canula, and the urethra can be kept open by sounds. That is a very convenient way of draining the bladder, also, because the English rubber catheter can be kept between the patient's legs, and can emerge through an antiseptic dressing. I have had no bad results from that mode of treatment.

DR. M. H. RICHARDSON reported a

CASE OF SUPRA-PUBIC CYSTOTOMY FOR TUMOR IN THE BLADDER.

and Dr. F. S. WATSON followed with a

CASE OF PEDUNCULATED PAPILLOMA OF THE BLADDER, SUCCESSFULLY REMOVED BY PERINEAL OPERATION;²

and showed

A NEW FORM OF PERINEAL DRAINAGE-TUBE.

DR. RICHARDSON: Of course it is impossible to come to any conclusion in one case, but I have felt ever since this operation that if we had done the perineal operation this patient would perhaps have gotten well. In going over the operation in my mind

since, there is nothing that I would have done differently in doing it a second time, unless it were the providing for drainage through the outer wound. The bladder was sewn up, leaving a small opening, then the wound was sewn together in the upper part, leaving sufficient space, as it seemed, for the drainage of the bladder, so that, in case of extravasation of urine outside the tube, which I don't see how you can prevent, it would not be forced down in the cellular tissue outside the bladder. I have not in mind the statistics of recovery after cystotomy, but my impression is that they are very favorable indeed; that some men have done a very large number of supra-pubic operations for stone without a death. Dr. Watson has put it exactly as it seems to me. The operation to be selected would vary according to the position of the tumor. If it is easily in reach of the finger, then the perineal operation would be sufficient. I do not see any way in which you are going to avoid the risk of extravasation of urine into the cellular tissue around the bladder.

DR. WATSON: The way in which the Frenchmen overcome that difficulty, and they have been very successful in doing so, is in the enjoyment of a double drainage-tube. The wounds are left opened, then whatever urine is extravasated beside the tube is not forced into the tissues under pressure, but runs out over the wound without harm resulting. Guyon's cases show that very decidedly. The Germans almost always sew up the bladder wound, on the contrary.

I was very much impressed with the fact when last summer I did supra-pubic cystotomy for tumor of the bladder, that it was not good surgery to sew the bladder wound tight where there was much bleeding in the bladder unless there is a very large opening in the perineum, for the pain from tenesmus was very severe and the strain on the suture was great. I do not think that any stitches would have stood the strain.

DR. ABNER POST showed a

CALCULUS FORMED ABOUT A PIECE OF CATHETER.

DR. MIXTER showed a

MODIFIED UTERINE ECRASEUR

of his own invention, and Dr. C. B. Porter, who had used the instrument in a case of hysterectomy, spoke highly in its favor.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

STATED MEETING, June 12, 1888, C. B. NANCREDE, M.D., in the chair.

DR. JOHN S. MILLER read the following paper:

A CONTRIBUTION TO THE STUDY OF BONE REPAIR.

The recent observations of Macewen¹ have done much to stimulate the study of bone repair, and have thrown out a little light upon the function of the medullary cells in osteogenesis.

The resort to mechanical irritation of the medullary tissues as a means of accelerating bone repair, is an old procedure. Nancrede² claims a priority in this for America. As far back as 1793 Eve³ relates that the lay surgeons of the frontier were wont to make multiple perforation of the external table of the skull where

¹ Annals of Surgery, vol. vi, p. 289 et seq., 1889 et seq.

² Internat. Encycl. of Surg., by Ashhurst, vol. v, p. 8.

³ Remarkable Cases of Surgery, p. 35. Philadelphia, 1857.

² See page 115 of the Journal.

necrosis had followed the Indian mutilation of scalping. And twenty years ago Agnew² resorted to the same procedure in a case of injury to the head. A fatal termination of the case, however, by encephalic complication, rendered the experiment incomplete. Reports of success by this procedure have been recently multiplied to an extent which will excuse us from repeating them in detail.

That, furthermore, medullary proliferation is not only an element in osteogenesis, but is of itself sufficient to that end without peritoneal coöperation, is evidenced by the case of Macewen,³ in which a considerable restoration of the humerus was secured "by bone-transplantation," after a suppurative inflammation had destroyed both the shaft and its periosteum. The date of this observation is 1878.

Whether the introduction of proliferating medullary cells into ordinary connective tissue granulations may convert the whole into osseous tissue, or that a few osteoblasts will, so to speak, leaven the whole mass, is a question involving grave doubt, but the affirmative would seem to receive some support from the case which Nancrede⁴ relates in 1883. An extensive laceration had caused denudation and necrosis of the ulna in two-thirds of its extent. The process of repair had been delayed, he drilled numerous holes through the sequestrum into the medullary canal, and, to quote his own words, "in a few days granulations sprang up from the ulna and fused with the granulations of the soft parts, and, in course of time, the fragment was separated."

That the procedure in this case had the effect of stimulating osteogenesis from within, we can readily believe; but concerning the fusion with granulation tissues without, a more accurate observation than is recorded by Nancrede is desired. Although by analogy we might conceive it possible, inasmuch as repair within the bone is by ossification of an embryonic tissue derived from the connective tissue around the bloodvessels of the medullary spaces. A similar case is reported by Macewen,⁵ in which granulations appeared upon a surface of bone completely denuded of its periosteum, and gradually spread until they became united with the granulation tissue at the periphery of the wound. Macewen, however, infers from this observation that:

"The periosteum covering a bone may be completely destroyed or permanently removed, yet the denuded bone may not only retain its vitality, but may throw out cells which will cover it and form a new periosteum."

These cases would seem to confirm Macewen's dictum that the periosteum has no part whatever in the regeneration of bone. But the first case I shall present to your notice this evening demands a different hypothesis for its explanation.

The patient, D. M., aged fourteen years, suffered from an osteomyelitis of the right tibia, resulting in total necrosis of its diaphysis. A complete involucrum had formed around the sequestrum and afforded an unsteady support to the body weight. It was covered with the thickened periosteum. A number of fragments had been removed from time to time, and the parents had refused to entertain for him the proposal of amputation. The case, however, when it came

into my hands, had become from septic infection so desperate that I was compelled to do something radical at once.

Exposing the shaft, or rather the involucrum, through its whole length, I made with trephine and saw a fenestrum large enough to permit the removal of the remaining sequestra, and cleared out the whole canal. Both epiphyses were found carious upon their exposed surfaces, and were scraped to the limit of safety. In a few days a superficial necrosis took place upon the inner surface of the tube.

Demarcation was, however, promptly effected by the free use of aluminum acetate⁷—that sheet-anchor in all sloughing wounds—and a fine layer of minute granulations became the field for any osteogenesis which we might hope to witness. During the long process of repair with the carious epiphysis as a never-failing source of bacterial supply, it was no trifling task to keep this extensive opening dry and sterilized. Furthermore, neither the patient, the household, nor the neighborhood could endure frequent dressings without great nervous prostration.

The requirements of the case were successfully met by a mixture of iodoform and starch, in proportions which varied with the changing conditions. The cavity of the wound was filled with this dry powder, and to the whole was applied a closed dressing of gutta-percha tissue. The purpose of the starch was to absorb the excess of moisture incident to a closed dressing as well as to dilute the iodoform. As soon as the powder became saturated it was removed by a stream of sterilized water, and the wound was filled and closed as before. The periods of dressing were gradually increased from three to ten days. I mention these details, because without them, or similar ones, we can wait in vain for the desired repair. In process of time the hollow of the involucrum became completely filled with granulation tissue, which continued to extend until it fused with the granulations from the soft parts, and finally the whole became covered with a new epithelium which had gradually spread from the edges of the wound. The tissues became now denser, and offered more and more support to the body weight until, as you see, he has acquired a very useful limb, and can walk without discomfort.

We must, therefore, infer that a metamorphosis into bone has taken place, and as the original diaphysis was gone with its medullary structure, we can find no osteogenic agent in the result other than the periosteum.

We must draw a similar conclusion from the recent case reported by Ceci:

The patient, a young man, developed an acute osteomyelitis of the left scapula five days after circumcision for inflamed phimosis. One month later, Ceci⁸ extirpated the bone, making the usual L-flap. The periosteum was left intact as far as possible, and the arm was preserved. The patient recovered rapidly, and there was a subsequent regeneration of the bone.

The only possible explanation of this result is by the hypothesis of periosteal agency or coöperation.

The second case which I present is in confirmation of Macewen's proposition that, "a portion of bone which has its continuity severed on all sides, and has had all its periosteum removed, is capable of living and growing."

¹ Loc cit., p. 361.

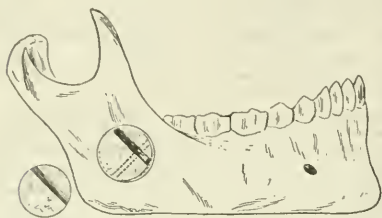
² Transactions of the Philadelphia Academy of Surgery, 1888.

³ Loc cit., p. 233.

⁷ R.—Pot. et alum. sulph., 1 part; plumb. subacet., 5 parts; aqueus bull., 100 parts. M. F. H. B.

⁸ Centralbl. f. Chirurgie, Dec. 17, 1887.

This is in contradiction to our inference in the case of the tibia, and can be reconciled only by the assumption that the discovered laws of osteogenesis are of a lower order, subject to some general law of which we are as yet ignorant. But to the case:



Mrs. L., aged forty-seven years, had suffered with a neuralgia of the maxillaris inferior. For the relief of which all medical means had been exhausted in vain, and which, therefore, left to my option only the *dernier ressort* of neurectomy. The mode of operating was the usual one. The ramus was trephined near the angle of the jaw, the canal was exposed, and about two inches of the nerve trunk were drawn out and excised. The button was, however, returned after having been sterilized in a 1 to 1,000 solution of corrosive sublimate, but it was not returned to its old position. With a view of imposing a barrier to the reproduction of the nerve, it was so rotated around its vertical axis that the groove upon its lower surface stood at right angles to the axis of the canal. Not only did the wound close by first intention, but the button grew solidly in its position. Now, the curious thing in the case is, that before trephining I had carefully removed the periosteum, so that the latter can claim no part in the subsequent bone-repair. After seven months there has been no return of the disease.

DISCUSSION.

DR. JOHN B. ROBERTS: It is a curious fact that the medical mind has not appreciated the possibility of bone-production, despite the frequent instances that must always have come under notice. I was taught in cases of comminuted fracture to take out the spicules of bone that were entirely separated from the larger fragments, lest they should necrose and give rise to trouble. Now it is the practice of the best surgeons to leave the spicules, and we find that often they do not die, and that they assist in the process of union and solidification. This experience is in the same line as the facts given by Dr. Miller in connection with his interesting cases. If these spicules of bone can reunite, why not the button removed by trephining? Why is it not good practice to insert, when necessary, a portion of dog bone or chicken bone, as, indeed, has been done? We must not forget, however, the importance of asepsis, and that it is antiseptic surgery that has made these procedures possible.

In a case which Dr. Miller reports to-night, where he rotated the button of bone, turning the groove in which the inferior dental nerve had run at right angles to its former direction, I should be inclined to go still further and turn it upside down. The bottom of the pit in which it is to be placed, and the periosteal surface of the button being scraped, the ungrooved, freshened surface, formerly external, would then be placed

inward, and a bony plug would be interposed between the divided ends of the nerve, probably preventing the reunion and return of pain which so often occur.

The case of tibial resection has been very interesting to me, as I have recently operated upon a similar one; the patient being, however, a woman of about fifty years, so that I cannot hope for as complete a closure of the cavity in the bone as in this growing child, exhibited by Dr. Miller. In that case I removed the whole front of the tibia, going as near the articular cartilages above and below as I dared. The process of repair is like that we see in a tree. We know that if a foreign body is inserted into a wound made in the trunk of a young tree the process of cell-growth will go on about it, and finally it will be completely covered in, and its presence be unsuspected, until, perhaps, the saw strikes it, as the tree is being converted into lumber.

Dr. Keen, in his recent case of trephining for brain tumor, returned the button of a skull removed, and the patient was able in a few days to walk around with a perfectly healed and reunited cranium. Then we know what the dentists do in the way of transplantation of teeth, or return of teeth to their original sockets after removal of diseased portions. More remarkable still is the implanting of old, dried teeth into new sockets, bored in jaws from which even the alveolar process had disappeared, and becoming fixed there.

DR. GEORGE E. STUBBS: In reflecting upon these cases and similar ones, it occurs to me that perhaps in the numerous resections we have done in army and in civil practice, we have made mistakes. Surgery has advanced immensely since the war-time, and antiseptic surgery has opened new possibilities. Often, in my army practice, we removed all the bone when there had been a comminution. I should now, with our new light, try to save more of the broken bone, and so shorten the period of recovery.

In regard to operative treatment of neuralgia, I believe that we are entering upon a stage of work that will be much enlarged in the near future. I had a case recently in which neuralgia of the inferior dental nerve had existed for nearly seven years. I removed one and three-fourths inches of bone with the dental engine, took out as much of the nerve as I had access to, and dressed and treated the wound antiseptically. The wound healed by first intention, and as yet there has been no return of pain, so that I consider I have obtained a very good result.

The Chairman, DR. NANCREDE: The first question to be answered in a discussion of this kind is: what constitutes the periosteum? If we mean a fibrous membrane, the inner layer of which consists principally of yellow, elastic tissue, then we must agree with Macewen's extreme views, and admit that it has nothing to do with bone-repair. But, if we study the normal process of bone-development, I, at least, must arrive at a different conclusion. The long bones are laid down in cartilage, a temporary structure. How do they ossify? By means of this very periosteum, which Macewen treats with such contempt, and which Ollier exalted too highly. There is a third layer of the periosteum in direct contact with the bone, and this layer is composed entirely of those elements which, wherever we see them, we recognize as the agents of ossification—the osteoblasts. The temporary cartilage is invaded by connective tissue, ingrowths from the periosteum, covered with osteoblasts,

and is eaten up by them; and we find it permeated, and finally replaced by a network of fibrous tissue covered with osteoblasts. A certain number always remain beneath the periosteum. A certain number, very small, remain in the Haversian canals, a still larger number in the medulla.

It is clear to me why compact tissue dies; it has so few osteogenic cells. The medullary tissue lives because it is comparatively rich in osteogenic elements. Why does bone die when the periosteum is stripped off? because the resulting inflammation is so severe that the inflammatory tissue strangled the osteoblasts in the Haversian canals. With antiseptic means we now control the inflammation, and the osteoblasts are not killed and the bone is saved.

We are very hard, nowadays, on the periosteum. The fibrous layer has nothing to do with bone-repair, but its osteoblastic layer is in direct communication through the lining of the Haversian canals with the medulla; it is practically one structure, and thus, if we look at this matter from the standpoint of a correct histology, we find that both views are correct, provided only that we have a distinct understanding what is meant by the word periosteum in each case.

As to Dr. Miller's cases, I cannot quite agree with him as to what formed the bone in the case of total excision of the diaphysis of the tibia. While the shaft was dying, new bone was formed by the deep layer of periosteum, but after that the medullary spaces of the involucrum completed the bone.

I would also take exception to Dr. Roberts's proposition to scrape the button of bone and turn it inside out in the case of trephining the jaw for neuralgia. By this process he would remove all the osteoblastic cells, and the compact tissue would have a very good chance of dying. One reason for failures in operations about the lower jaw is that it contains so little true medullary tissue, while, on the contrary, we can replace trephine buttons in the skull and have union, because the skull contains a large amount of such tissue.

I think Dr. Stubbs need not blame himself for his practice in resecting in military surgery. The necessary condition to bone-repair is that absence of suppuration afforded by antiseptic methods, and under the conditions present in the operation he speaks of he did right. And, to-day, he does right in trying to save the bone. In each case he takes the proper course in relation to the circumstances, and that is all that any one can do.

The case of Dr. Agnew, referred to in the paper, occurred some twenty odd years ago. I saw the operation. The wound was completely covered by granulations. The fact that a denuded external table did not always necrose was known to Potts and to all the older, as well as modern surgeons, and if Ollier had not led us astray by grafting, by insisting upon the periosteum being the sole osteogenic agent, ignoring the fact that in removing it a layer of cells identical with those of the medulla are torn off, I think we would have arrived at a correct practice sooner. But surgeons went wrong by authority of Ollier, as they are now going wrong in the other direction by authority of Macewen.

In regard to the implantation of dead teeth, which Dr. Roberts refers to, the principle is probably the same as in the bony pegs we used to employ for ununited fractures. They are hollowed out by the gran-

ulation tissue which develops into a fibrous or even osseous tissue, and so holds the tooth in place by these newly formed digitations.

About twelve years ago I exhibited to this Society a case in which I resected four and a half inches of the humerus, and about two and a half inches were re-produced from the sawn end. This was without antiseptis. In the case referred to by Dr. Miller, where I drilled the ulna, I am sure that the bone granulations with those of the soft parts for these reasons: the shell of bone, when detached, was not more than one-fourth the thickness drilled through, while the new bone was nearly as thick as the ulna of the other side, as the cicatrix was not materially depressed. A recent experience in a case of knee-joint excision induces me to recommend that, instead of wiring fragments of bone, we nail them together, after having previously drilled, or not, according to circumstances, allowing the heads of the nails to project through the skin. We thus save trouble, and avoid damage in the removal.

DR. ROBERTS: Dr. Nancrede misunderstood me in regard to scraping away the cancellated tissue in reversing the plug in the case of trephining the lower jaw. I would scrape only what he calls the fibrous periosteum from the button, and from the bottom of the pit in the jaw I would take away the cancellated structure sufficiently to remove all trace of the nerve canal. The two raw surfaces would be placed together, and, by the sinking of the button, would be a solid, bony plug, interposed between the nerve ends.

DR. MILLER: I do not see any advantage in reversing the plug over rotating it. The groove being at right angles to the course of the nerve, the part in contact with the nerve is still solid bone, and the groove does not matter at all. In relation to the tibia case, the reason I emphasize the fact that the repair took place from the periosteum is because there was entire death of the old bone with the involucrum, and the periosteum did not die.

Recent Literature.

Surgery: its Theory and Practice. By WILLIAM JOHNSON WALSHAM, F.R.C.S., etc. 236 illustrations, 655 pages. Philadelphia: P. Blakiston, Son & Co. 1887.

The object of the writer of this little volume has been to furnish a work giving in as concise a manner as possible those facts which give to the student a general insight into the theory and practice of surgery, and which is not intended to take the place of the standard works and exhaustive treatises on this subject. For this purpose it is well written, and presents the subject in a manner which makes the volume a student's useful handbook. It is issued in a convenient form in clear type, is neatly bound, and contains many instructive illustrations. For a practitioner, the style is too concise, and the omission of many important details make it in many instances a mere compendium of fundamental principles and pathological or clinical facts.

— There has recently been presented to the Paris Anthropological Society a "Catalogue of Prehistoric Crania contained in the Broca Museum." It refers to 653 specimens representative of time from the earliest epoch to the Merovingian, inclusive.

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THE TOPOGRAPHY OF THE BRAIN.

In the *Forum* for August, Professor Charcot, in reply to the article of Brown-Séquard in the April number, states a series of propositions, which he regards as summing up the existing knowledge of cerebral localizations, and gives weighty reasons therefor, based on anatomico-clinical facts.

In the endeavor to ascertain the function of definite portions of the cortex, Charcot sets aside, as of only secondary or subsidiary value, the results of experiments on animals, of which Ferrier has presented such a complete embodiment in his "Functions of the Brain." He emphasizes the differences which exist between the human cerebrum and that of animals. The brain attains in man a degree of development and perfection not reached in any other species. Its functions become complex, while at the same time its morphology undergoes important modifications. Now, as regards localization, morphological details are of the first importance. As for functions, even if we take account only of those common to men and animals, they are not performed in all in the same way. The higher an organism stands in the animal scale, the more strictly are the purely reflex functions subordinated to the functions of the higher centres. A decapitated frog performs with its legs coördinated automatic movements; not so a decapitated dog. In the dog, brain lesions, even of considerable extent, produce only incomplete paralysis, often passing away, while in man the like lesions cause incurable functional troubles. These examples are enough to show how much reserve is necessary in drawing inferences, as regards brain functions, from animals to man. The results of experimentation can give only presumptions more or less strong, but never absolute demonstration. Hence, the only really decisive data touching the cerebral physiology of man are those developed according to the principles of the anatomico-clinical method. This method consists in ever confronting the functional disorders observed during life with the lesions discovered and carefully located after death.

This is the method that enabled Laënnec to throw light on the difficult subject of diagnosing pulmonary affections, and it has also materially helped the diagnosis of diseases of the liver, kidney, and spinal cord.

Taking, then, his stand on the rigorously ascertained data of the anatomico-clinical method, Charcot proceeds to formulate certain propositions which he thinks may now be regarded as established:

(1) When a brain lesion, whether cortical or of any other sort, is accompanied by motor paralysis, the seat of the paralysis is always on the side opposite to that of the lesion. This proposition is universally accepted by physicians, and in clinics it may be said to have the force of a law. Granting, Charcot says, that this law is subject to exceptions, these exceptions are so rare that, as far as clinical diagnosis is concerned, we may leave them out of account and hold it for a well-established truth that a paralysis of cerebral origin presupposes a lesion of the hemisphere of the opposite side. If, now, we turn to the study of disorders consequent on lesions of the cortex, we find that hemiplegia is often the consequence of these lesions. But not all lesions of the cortex are accompanied by hemiplegia; they are so only when certain conditions as to the extent of the lesion and its seat are present.

(2) Anatomico-clinical research shows that even considerable alterations in the gray matter of the brain cause no motor disturbance when they are localized in certain regions; for example, the sphenoidal, occipital, and inferior parietal lobes of the *pli courbe* and of the insula, the orbital lobule, and the anterior portion of the first, second, and third frontal convolutions. These portions of the brain may be destroyed by softening, may be compressed or irritated by tumors, by bony splinters, or by effusion of blood, without in the least affecting motility.

(3) The case is totally different if the region destroyed is that corresponding to the two ascending frontal and parietal convolutions and the adjoining *replis*, namely, the paracentral lobule, the foot of the first three frontal convolutions, and of the superior and inferior parietal lobules. In such cases we always find hemiplegia of the side opposite to that of the lesion. It is from such considerations as this that we formulate the existence of a well-defined motor zone in the cortex. This zone occupies pretty nearly the middle portion of the external surface of each hemisphere.

(4) The above conclusion is confirmed by anatomico-clinical observations of another order. It has been clearly proved that among the cerebral lesions *en foyer*, there are some, that is, those of the motor zone, which are sure to produce secondary degeneration of nerve-fibres proceeding from the cortex; descending sclerosis, in fact, regularly appears when the foyer comprises the two ascending convolutions (ascending parietal and ascending frontal) and the contiguous parts of the frontal and parietal lobes.

(5) The so-called motor zone in itself, shown by clinical facts — supported by the findings of the autopsy — to be resolvable into distinct centres, each

concerned with the movements of some special part of the body. There is, for instance, a monoplegia due to lesion of the cortex. In 1883, Charcot was led to conclude from researches made with Pitres that "the cortical motor centres for the two members of the opposite side are situate in the paracentral lobule and in the superior two-thirds of the ascending convolutions; that the centres for the movements of the lower part of the face are situate in the upper third of the ascending convolutions; that the centre for the isolated movements of the arm lies in the middle third of the ascending parietal convolution of the opposite side." Nothnagel reached the same conclusion through a close analysis of a multitude of facts, and these have been confirmed by observations published since 1883. Some recent facts, moreover, go to show "that the paracentral lobule with the uppermost part of the ascending frontal and parietal convolutions has especially to do with the motility of the femur and leg."

Charcot concludes his article by reference to the facts of what is called "Jacksonian epilepsy," and its relations to certain irritative lesions of the motor zone. He considers it as established that in the great majority of cases partial epilepsy results from lesions of the cortex, limited affections with quick and progressive evolution (neoplasm, superficial encephalitis, meningitis, whether acute or chronic). The lesions which produce it are usually on the motor zone itself, but they may lie outside of it, provided the affection is capable of irritating the elements of the motor convolutions. He alludes to the impregnability of Broca's doctrine of the speech centre in the left hemisphere, and regards it as sufficiently settled that the region of the cortex, lesion of which produces "word-deafness," is in the first frontal convolution. As to *agraphia* and *word-blindness*, we are not yet absolutely settled as to the seat of the lesion which produces them.

The propositions which he has stated, no longer, he says, meet with any serious contradiction among clinicians; the apparently contradictory facts brought forward by the few opponents will not bear methodical and rigorous criticism.

EFFECT OF ERGOT ON THE INVOLUTION OF THE UTERUS.

SOME experiments have recently been made by Drs. Herman and O. C. Fowler, and reported to the Obstetrical Society of London, by which the authors sought to ascertain the effect of prolonged administration of ergot on the involution of the puerperal uterus.¹ To determine whether the medicine had any action or not, they gave an ergot mixture to one set of patients, fifty-eight in number, in repeated doses daily for a fortnight after labor. To another set, sixty-eight in number, only a single dose of ergot was given after labor, and no more. In both sets of patients they measured the height of the uterus above the pubes on

successive days of the lying-in period. They found that in the cases treated by the continuous administration of ergot the uterus diminished in size more rapidly than in those in which one dose only was given. They compared the two sets of cases as to the duration of the lochial discharge, but on this they did not find that the ergot treatment produced any appreciable effect.

At the same meeting Dr. Bloxall referred to two sets of cases occurring in his Lying-in Hospital, each having to do with one hundred patients. Every alternate patient admitted to the hospital was given a mixture three times a day containing fifteen minims of liquid extract of ergot. This was kept up during the first three days of the lying-in. The two series of observations were carried on simultaneously. In the second series the routine administration of the ergot was omitted. By contrasting the two series of cases, Dr. Bloxall concludes that the practice of giving ergot during the three days following delivery tends to prevent the formation of clots, and to hasten their expulsion, and to diminish the frequency, intensity and duration of after-pains. That if omitted at first, but given afterwards, the ergot mixture tends to promote the expulsion of the clots and relieve after-pains.

Dr. Dakin at the same meeting reported some observations which seemed contradictory to the conclusions at which Drs. Herman, Fowler and Bloxall had arrived, and claimed that the results of his studies went to show that the continuous use of ergot, by keeping up a tonic state of contraction instead of allowing normal alternate contraction and relaxation, would favor retention of clots, and hinder rather than help the normal process of involution.

THE YALE THERMOMETRIC BUREAU.

THE Thermometric Bureau established in 1880 in connection with the Observatory of Yale University is accomplishing a work which physicians ought to appreciate. It has examined a gradually increasing number of thermometers during the years of its existence, but its usefulness is not measured by the number of instruments that pass through its hands. There is from year to year an improvement in the quality of instruments of American manufacture submitted for verification, both actual and relative to foreign manufactures, and the Observatory claims a share of the credit for this improvement.

"It may now be fairly said—as it could not have been said before the institution of this Bureau—that the best clinical thermometers of American manufacture compare favorably with the best foreign manufactures, both in the smallness of the amount of the required corrections and in their uniformity throughout the scale." Such was the statement of the managers of the Observatory in their last year's report, and this year they find occasion to say that their good work is still progressing.

¹ Journal of Obstetrics, May, 1887.

MEDICAL NOTES.

—The *British Medical Journal* quotes from the *Archives de Médecine et de Pharmacie Militaire* for last year, an account of the seventeen patients who were killed or wounded by the explosion of a shell charged with the new explosive, melinite, in the arsenal at Belfort, in March, 1887. Only six recovered from their injuries, the remainder succumbing either to severe damage to the head, trunk, bones or blood-vessels, or to septic changes. The authorities believed that the explosion was due to chemical change in the compound with which the shell was charged. In the field during a campaign, freshly-laden shells would be expected to produce yet more violent effects. The patients mostly presented characteristic appearances. There were multiple, deep, very narrow wounds of the soft parts, caused by the entry of minute cubical fragments of shell, and in the depths of the wound the raw surface appeared as though tattooed with minute particles of foreign matter, as in gunpowder explosions. The injuries to bones were markedly localized, epiphyses being in some cases shattered without fissure of the shaft. The chief peculiarity was the presence of an intense yellow discoloration of the skin in every case, communicated to the patient's linen. The fragments extracted from the wounds appeared to be metallic splinters from the shell, no melinite nor any other chemical compound could be detected, nor did the patients who recovered exhibit any symptoms of the absorption of a chemical poison.

—The *Medical Press and Circular* quotes from a report of Dr. Keegan, Presidency Surgeon of Lahore, remarks showing some estimate of the immense boon conferred upon the women of India by Lady Dufferin's movement to supply them with medical aid in childbirth. The method of conducting labors throughout Central India only a year or two ago was as follows: The native midwives, or *dhaies*, on being called to a woman in labor, hasten delivery as much as they possible can by exerting pressure on the abdomen; they have no idea of waiting upon nature. The child being born, the mother is made to stand up, and pressure is again applied to the woman's abdomen, by means of the head or bent knee of the *dhaie*. A bandage is then passed round the woman's abdomen, and she is then allowed to lie down on a charpoy under which a charcoal fire is placed, which causes the room to become excessively warm. The room selected for the confinement is usually in the very interior of the house, and may be described almost as a hermetically sealed chamber. The day succeeding the birth of the child the mother is subjected to fumigation, which is continued for about twelve days, and at the same time indigenous stimulating condiments are given, which are supposed to give milk in abundance. These condiments are used four or six weeks. The mother is allowed to drink nothing but warm water for the first ten days. In the hot season of the year the charcoal fire is used both day and night for the first twelve days succeeding the birth of the child.

Subsequently it is used from evening till early morning, and is not discontinued *in toto* until the expiration of a month or six weeks. During these six weeks the child is subjected to the same atmospheric conditions as the mother, and whenever it cries more fuel is added to the fire, and the child soon ceases to cry, owing to the effects of the carbonic acid gas. Dr. Keegan adds that this method of conducting confinements is, with some slight modifications, more or less prevalent throughout the greater portion of India.

NEW YORK.

—Dr. Henry Raphaël, of New York, died at Saratoga, August 4th, in the forty-eighth year of his age. He was born in Russia, but came with his parents to this country at an early age. After a public school education, he studied medicine and was graduated from Bellevue Hospital Medical College; subsequently serving as house-surgeon in Bellevue Hospital. Up to a few years ago, he had a large private practice, but failing health compelled him to relinquish it. Dr. Raphaël is well-known to the profession by his excellent translations of Vogel's "Diseases of Children" and Von Zeissel's "Syphilis," published by the Appletons. He also translated several works of German fiction, and for several years contributed largely to current medical literature.

—The coroner's jury in the case of Mrs. Levy, who was run over and killed by a 23d Street "bobtail" car finds that her death was directly due to the system of running such cars without conductors, and condemns the system as especially pernicious in a large and populous city. It then recommends the State Legislature to take such action as will require the New York horse-car companies to provide conductors as well as drivers for every car.

Miscellany.

THE USE OF COLD IN DIARRHOEAS OF CHILDREN DURING THE HOT WEATHER.

THE *Therapeutic Gazette* speaks thus, editorially, regarding the value of the treatment of summer diarrhoea in children by cold baths:

"As the heated term is upon us, we take the liberty of calling the attention of our readers to a practice concerning which we have frequently written, but which we do not think obtains upon the profession as largely as it ought to. Any one who watches the mortality-lists of our large cities knows that any marked ascent of the average heat-record of the thermometer is accompanied by a corresponding rise in the mortality-list; also that the rise is chiefly made up of infantile deaths, such deaths in turn being in great part the result of some form of diarrhoea. Whether these cases are called cholera infantum, or summer diarrhoea, or enteritis, or colitis, we believe that they are in great part the direct result of overheating of the body, and that they are to be best combated by the use of the cold bath. In all such cases the physician should take the temperature of the little

patient, and if, as is generally the case, the bodily heat is distinctly above normal, systematic cold bathing should be enforced. It may be necessary to give the cold bath every two hours; it may only be required three times in the twenty-four hours. At first the child usually resists the bath violently, and the prejudices of the mother are often like the wall of a fortification; but, whenever we have persevered, the results have been so marked as not only to rapidly overcome the prejudice of the mother, but also to teach the child itself the value of the bath, and cause the outcries and resistance on its part to cease entirely. We wish that this treatment would be fairly tried by our readers, and reports made thereon through our columns."

ANTISEPSIS IN TYPHOID.

INTESTINAL antiseptics in typhoid fever cases seems to be in a good way of becoming of the highest importance, says the Paris correspondent of the *Philadelphia Medical Times* (July 16th). In the treatment of such patients, Professor Bouchard first introduced naphthol, and Dr. Legroux is at present applying it in his service at the children's hospital with great success. As soon as a child is brought in suffering with symptoms of typhoid, the intestines are at once cleaned out with calomel, given in doses of 0.30 to 0.60 centigrammes, depending on the child's age. The next day the intestinal antiseptic treatment is commenced as follows:

R Naphthol beta . . . } 32 grammes, 50
Bismuth salicylate . . . }

M. Divide in 10 powders, and give one every hour in a wafer, or mixed with a little milk or brandy.

If the diarrhoea is not important, the bismuth may be left out and only the naphthol given, and if on the contrary there is constipation, then the following is used:

R Naphthol beta 2 grammes, 50
Magnesia salicylate 2 grammes, 50 to 5 grms

M. Divide in 10 powders, and give one every hour until the bowels are free, and then continue with the naphthol only, as before.

It will be found that there will be a diminution or entire suppression of intestinal meteorism, and that the stools are disinfected, no longer giving the fetid smell of typhoid, and also the mouth and tongue will clear up, the general state will improve, the disease will evolve quietly, and the convalescence will be shortened under this treatment. Naphthaline was tried, but it was found so disagreeable to the patients — most of them refused to take it — that it had to be stopped. It also presents some danger of absorption.

STATISTICS AND TREATMENT OF PLACENTA PREVIA.

THE *American Journal for Obstetrics* summarizes a paper by Nordman on the above subject from *Archives f. Gyn.* (XXXII., 1.) The aim of the paper is to solve the question as to whether the preferable method of treatment is by combined version and slow extraction. Forty-five cases occurring at the Dresden clinic, in a total of 5,779 labors, are utilized. Twelve cases were treated by tampon or colpeuryter, with or without rupture of the membranes, delivery being allowed to take place spontaneously, with a maternal mortality of 0 per cent, and an infantile of 16.6 per cent, ex-

cluding the cases where the fetus was dead when first seen. In twenty-three cases, version was performed followed by immediate extraction, the maternal mortality being 17.3 per cent, and the infantile 5.8 per cent, excluding cases where the foetal heart was never heard. In six cases, version and slow extraction was the method of treatment, one mother dying of sepsis and all the children being delivered dead. Although these data decidedly speak in favor of the first method of treatment, it should be noted that, in all the cases so treated, there was marginal insertion of the placenta, which does not expose the mother to the same risk as the total insertion. By the second method the greatest number of children were saved. Nordman concludes that this method is preferable in hospital practice, whilst in private practice version and slow extraction should be the rule, notwithstanding the excessive infantile mortality. In case of placenta previa marginalis, the tampon will answer well both from the standpoint of the mother and of the child.

EVE ON ACTINOMYCOSIS.

MR. FREDERIC EVE gives some interesting examples of cases of actinomycosis in the *Practitioner*, May, 1888. This disease belongs to the large group known to pathologists as the infective granulomata, the infective element being a peculiar vegetable fungus, the growth and distribution of which are associated with tumors formed of granulation-tissue. The fungus gains access to the body by means of a lesion of some mucous membrane or of the skin. A primary tumor is thus established, from which general dissemination may take place by means of the blood and lymphatic vessels. Clinically, this disease in man presents itself under somewhat varying aspects. When attacking the maxillary region, it generally commences with pain in one or more teeth; a swelling soon appears, and, after the lapse of weeks or months, the disease culminates in a diffuse general enlargement of one side of the neck or face. The swelling becomes soft and fluctuating, but, on opening the softened areas, only a few drops of pus escaped, and the tissues are found infiltrated with a soft, spongy granulation-tissue. The progress of the malady is extremely chronic, as a rule. In actinomycosis of the lung and thorax, pain in the side, with pleurisy or pleuro-pneumonia, are commonly the first symptoms. The duration of the disease in fatal cases varies from ten weeks to a year and a half or more. Secondary formations have been found in the liver, lung, kidney, spleen, intestines, brain, ovary, heart-muscle, and in the muscles and skin. Up to 1886, an analysis of seventy-five recorded cases was drawn up by Moosbrugger. In twenty-nine the disease was in the neighborhood of the lower jaw, in the mouth and neck; in nine in the upper jaw and cheek; in one case in the tongue, and in two involving the pharynx and œsophagus; eleven in the intestines and abdominal viscera; fourteen in the bronchial tubes or lung. In seven the seat of the disease could not be ascertained. As to the prognosis of this disease, there is little chance in man of a spontaneous cure, as sometimes happens in cattle similarly affected; operative measures are successful if the affected part be completely removed, and the patient may be free from a return for years; cases of visceral actinomycosis are necessarily fatal. In cases beyond the reach of opera-

tive measures, it has been recommended to inject a solution of perchloride of mercury; but unless the disease can be eradicated by the knife in its earliest stage, there is little hope of a cure. — *London Medical Recorder*, June 20, 1888.

FOREIGN BODIES IN THE RECTUM.

MR. D. H. GOODSALL, Assistant Surgeon to St. Mark's Hospital, has published "The Notes of Twenty Cases of Foreign Bodies in the Rectum," in the twenty-third volume of the *St. Bartholomew's Hospital Reports*, recently issued. From a consideration of these notes, the *British Medical Journal* gives the author's conclusions as follows: (1) That this form of accident is more commonly met with after thirty-five years of age, the average age in the twenty cases being upwards of forty-two years. (2) That a bone takes from one to nine days to pass from the mouth to the rectum. (3) That the pain in the rectum comes on suddenly while the motion is being passed. (4) That there is constant pain and discomfort in the rectum, and sometimes also in the adjacent parts, from the time of puncture until the foreign body has been removed. (5) That the site of the puncture is within the last inch or three-quarters of an inch of the rectum. (6) That when an abscess follows the puncture it begins to form within two or three days of the puncture. That when the case is seen early and the bone promptly removed, no ill effects follow the puncture. (8) That when a fistula has formed, the patient may, unless the internal opening is large, be cured by making only a free external opening. (9) That when it is necessary to lay open the fistula the wound made (the foreign body having been removed), heals much more rapidly than the wound does in non-traumatic cases of fistula. The cause of fistula is very important in cases of candidates for life-insurance, for if the fistula be of traumatic origin, no increase should be made in the rate of premium because of such a fistula. An ischio-rectal abscess, caused by a foreign body, should be opened as soon as possible. When the case is seen soon after the foreign body has punctured the rectum and before abscess has formed, the patient should be put under chloroform and the sphincter forcibly stretched. The foreign body should then be removed, either from the rectum or by an external incision. Then about two drachms of unguentum cetacei should be introduced into the rectum. The bowels must be kept confined for three or four days and then relieved by olive oil, not by aperients.

DEUTSCH-MEDICINISCHE-SCHRIFT-SUCHT; OR, THE GERMAN MEDICAL-JOURNAL HABIT.

DR. JOHN S. HAWLEY closed an address on the above subject before the Hospital Graduates Club with the following "song," which we copy from the *Medical Analectic*:

If we write so that nouns with their verbs don't agree,
That's German, you know, quite German, you know.
If our meaning obscure and involved seems to be,
It's German, not English, you know.
But that kind of writing you read in Berlin,
In Heidelberg, Wien, where we've frequently been,
Don't mind how you end, if you only begin, —
Is German, quite German, you know.

O the queer things we do, and the queer things we see
Are German, you know, all German, you know.
No man in this wide world a surgeon can be
Till he's German, all German, you know.

We spend all our money to emulate Koch,
He's German you know, born a German, you know.
We cultivate germs tho' our raiment we "hock"
With our uncle, who's German, you know.
We hully our confères with Volkmann and Braun,
With Virchow and Schroeder their arguments down,
And we knock them all out with Esmarch's renown,
They're Germans, native Germans, you know.
O the queer names we hear, and the queer names we quote,
Are German, you know, all German, you know,
We speak them, tho' each gives us a pain in the throat,
For they're German, true German, you know.

We take out the stomach and reset the gut,
That's German, you know, quite German, you know.
The leaves of the journals in public we cut,
When they're German, true German, you know.
Our talk has a bacteriological drift,
We pay "twenty marks" for a pipe, for a gift,
And we quote from the *Berliner Klin. Wochenschrift*,
Which is published in German, you know.
O the marvelous statements that come from afar,
Are German, you know, all German, you know,
But of course it's all right if it's German — *nicht wahr?*
That's the German for "aint it?" you know.

We think it improper to poultice a boil,
No German you know, would do so, you know,
And we make salad dressing with carbolized oil,
That's the custom with Germans, you know.
With carbolic inhalers we muzzle our jaws,
We wear underclothes of iodiform gauze,
We ignore the effect, and talk big about cause,
Which the Germans do always, you know.
O the queer things we do and the queer ways we live,
Are German, you know, all German, you know,
Of squaring the circle the method we'll give,
Or some German will give it, you know.

We consider a coccus the cause of a gleet,
That's German, you know, quite German you know,
We dress a cut finger in a haystack of peat,
That's German, true German, you know.
We put in a gum larynx and a celluloid tongue,
We exsect the spleen, and we reset the lung,
We save at the spigot, and leak at the bung, —
O we're German, we're German, you know.
But the queer way we feel when we count up the slain,
Is not German, you know, no, not German, you know.
And we've not enough nerve yet, to exsect the brain,
As the Germans will soon do, you know.

We write in the journals a great deal of rot,
As do Germans you know, tho' they're Germans, you know,
And we seek a small pin in a tea-cake lot,
For the Germans can find one, you know.
We discard the choice meat and chew on the bone,
We refuse the good bread and grasp at a stone,
We hoard oyster shells and the pearls leave alone,
That's German, true German, you know.
O the queer things we do, and the queer things we write,
Are German, you know, all German, you know.
We will swear that the ace of the spade suit is white,
If some German but says so, you know.

On sterilized pap our young infants we feed,
That's German, you know, quite German, you know,
And we hope by such means to improve on the breed,
For the Germans advise it, you know.
In training a puppy, or raising a foal,
In the search for an office, or the seat of the soul,
Or how to fit a square stick to a circular hole,
We get points from the Germans, you know.
O the queer tricks we play with our young babies' milk,
Are German, you know, all German, you know,
Of sow's ears we make purses of superfine silk,
By a process that's German, you know.

We pour down the beer as tho' filling a tank,
That's German, you know, true German, you know.
And we eat Sweitzer Kase and Limburger rank,
That's German cheese with the gangrene, you know.
Frankfurters we love, and sauer kraut, too,
And we make no mistake when the spring Bock we brew,
But we bite off more science than we ever can chew.
When we follow the Germans, you know,
O for the queer things we eat and the good things we drink,
Thank the Germans, you know, bless the Germans you know,
But we ball up our science, and our good sense we kink,
When we try German methods, you know.

REPORTED MORTALITY FOR THE WEEK ENDING AUGUST 4, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrheal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	814	428	37.56	11.19	26.13	1.32	3.84
Philadelphia	1,016,758	471	233	31.92	9.03	18.06	9.45	.84
Brooklyn	751,432	409	247	9.11	9.11	.72	.24	3.60
Chicago	760,000	411	—	39.55	3.91	33.12	2.26	2.26
St. Louis	449,100	—	—	—	—	—	—	—
Baltimore	437,155	235	114	35.26	—	27.95	3.01	.43
Boston	407,024	241	127	31.57	11.48	26.65	.82	.82
Cincinnati	325,000	144	—	28.29	6.94	21.39	2.07	2.07
New Orleans	248,000	145	49	21.38	13.79	1.04	.68	1.36
Buffalo	230,000	130	—	47.71	10.01	26.95	6.16	2.31
Washington	225,000	122	65	39.36	7.38	26.24	4.92	.82
Pittsburgh	200,000	—	—	—	—	—	—	—
Milwaukee	123,000	—	—	—	—	—	—	—
Providence	80,000	—	—	—	—	—	—	—
New Haven	65,153	28	7	21.42	21.42	—	3.57	—
Nashville	60,145	45	20	4.44	24.42	4.44	—	—
Charleston	40,000	9	2	11.11	33.33	11.11	—	—
Portland	36,328	62	42	43.47	1.61	37.03	—	—
Worcester	69,530	—	—	—	—	—	—	—
Lowell	64,079	30	18	50.00	6.66	46.62	—	3.33
Cambridge	61,203	41	30	51.24	9.76	51.24	—	—
Fall River	51,467	20	—	5.00	10.00	—	5.00	—
Lynn	40,175	22	13	40.86	9.00	—	—	—
Lawrence	39,952	14	9	64.26	—	64.26	—	—
Springfield	36,228	15	9	46.62	—	46.62	—	—
New Bedford	33,397	—	—	—	—	—	—	—
Somerville	32,887	—	—	—	—	—	—	—
Holyoke	28,781	9	2	22.22	22.22	11.11	—	—
Salem	27,552	9	5	22.22	—	22.22	—	—
Chelsea	24,979	13	8	46.14	15.38	38.45	—	—
Haverhill	24,784	—	—	—	—	—	—	—
Taunton	24,784	5	3	—	—	—	—	—
Brockton	23,187	—	—	—	—	—	—	—
Gloucester	21,105	9	6	33.33	—	11.11	—	11.11
Newton	18,932	6	3	60.00	—	16.66	—	16.66
Malden	17,534	10	7	20.00	—	10.00	—	—
Fitchburg	16,651	4	2	50.00	—	50.00	—	—
Waltham	13,839	9	2	—	—	—	—	—
Newburyport	13,419	9	4	55.55	22.22	55.55	—	—
Northampton	—	—	—	—	—	—	—	—

Deaths reported 3,514: under five years of age 1,524; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 1,151, consumption 308, acute lung diseases 152, diarrheal diseases 779, typhoid fever 97, diphtheria and croup 67, whooping-cough 67, malarial fever 33, scarlet fever 32, measles 28, cerebro-spinal meningitis 12, puerperal fever seven, small-pox five, erysipelas four. From whooping-cough, New York 19, Washington 10, Philadelphia nine, Brooklyn seven, Chicago six, Cincinnati and Pittsburgh four each, Boston and New Orleans two each, Baltimore, Haverhill, Newton and Fitchburg one each. From malarial fever New Orleans 11, New York and Baltimore six each, Brooklyn and Washington four each, Philadelphia two. From scarlet fever New York 22, Brooklyn six, Pittsburgh three, Philadelphia one. From measles New York 17, Chicago five, Brooklyn and Baltimore two each, Pittsburgh and Worcester one each. From cerebro-spinal meningitis, Chicago four, Worcester three, New York and Washington two each, Nashville one. From puerperal fever Chicago four, New York two, Baltimore one. From small-pox, Philadelphia five. From erysipelas, New York, Brooklyn, Chicago, and Pittsburgh one each.

In the 28 greater towns of England and Wales with an estimated population of 9,388,275, for the week ending July 21st, the death-rate was 16.0. Deaths reported 2,884: infants under one year of age 777; acute diseases of the respiratory organs (London) 166, diarrhoea 105, whooping-cough 68, measles 50, scarlet fever 31, fevers 27, diphtheria 23, small-pox (Sheffield two, London, Bristol, Preston, and Hull one each) six.

The death-rates ranged from 12.2 in Brighton to 21.1 in Manchester; Birmingham 16.1; Blackburn 13.2; Bradford 16.1; Leeds 18.9; Leicester 14.9; Liverpool 15.3; London 15.8; Nottingham 12.7; Sheffield 15.9; Sunderland 14.2.

In Edinburgh 16.3; Glasgow 23.3; Dublin 19.4.

BOOKS AND PAMPHLETS RECEIVED.

Announcement of Gross Medical College of Denver. Medical Department of the Rocky Mountain University. Session 1888-1889.

Eclectic Medical College of the City of New York. Twenty-Eighth Announcement and Catalogue for Session of 1888-89.

Intestinal Obstruction. When should Operative Measures be Resorted to in Intestinal Obstruction? By Albert Vander Veer, A.M., M.D., Albany, N. Y., Professor of Surgery in the Albany Medical College, Fellow of the British Gynecological Society, etc.

The History of Abdominal Section in Albany, with a Report of Seventy-Five Cases. By Albert Vander Veer, M.D., Professor of Surgery in the Albany Medical College, Fellow of the British Gynecological Society, etc. Reprint. 1888.

The Formation and Excretion of Uric Acid considered with Reference to Gout and Allied Diseases. By A. Haig, M.A., M.D., Oxon, M.R.C.P., Physician, Royal Hospital for Children and Women, Waterloo Road; Assistant Physician, Metropolitan Hospital. London: John Bale & Sons. 1888.

A Case of Multiple Neuritis in a Woman, of Combined Syphilitic and Alcoholic Origin; Treatment by Electro-Massage; Complete Recovery. By Andrew Smart, M.D., F.R.C.P.E. Reprint. 1888.

The Medical and Surgical History of the War of the Rebellion. Part III, Vol. I; Medical History. Being the third medical volume. Prepared under the direction of the Surgeon-General U. S. A., by Charles Smart, Major and Surgeon U. S. A. Washington: Government Printing Office. 1888.

Annual Catalogue and Announcement of the College of Physicians and Surgeons in the City of New York, Medical Department of Columbia College. With an account of the new buildings. 1888.

Intracranial Tumors. By Byron Bramwell, M.D., F.R.C.P.E., F.R.S.E., Lecturer on the Principles and Practice of Medicine in the Extra-Academical School of Medicine, Edinburgh, etc. With 116 illustrations. Philadelphia: J. B. Lippincott & Co. 1888.

Some Retrospective and Prospective Thoughts on Surgery. By Donald Maclean, M.D., of Detroit, Chairman of the Section on Anatomy and Surgery, Professor of Surgery and Clinical Surgery in the University of Michigan. Reprint. 1888.

The meteorological record for the week ending August 1, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barometer.	Thermometer.		Relative Humidity.		Direction of Wind.		Velocity of Wind.		State of Weather. ¹		Rainfall.
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
Saturday, Aug. 4, 1888.												
Sunday, . . . 29	30.06	63.0	70.0	56.0	71.0	74.0	W.	S.W.	8	O.	O.	.10
Monday, . . . 30	29.88	72.0	84.0	69.0	72.0	70.0	N.E.	S.W.	6	12	C.	.0
Tuesday, . . . 31	29.75	73.0	82.0	65.0	106.0	87.0	W.	S.W.	18	19	C.	.2
Wednesday, . . . 1	29.93	67.0	77.0	64.0	61.0	56.0	N.	N.W.	14	13	C.	.26
Thursday, . . . 2	29.97	74.0	87.0	61.0	59.0	58.0	W.	N.W.	5	6	C.	.0
Friday, . . . 3	29.82	72.0	82.0	65.0	62.0	58.0	N.	S.W.	10	10	C.	.0
Saturday, . . . 4	30.18	74.0	85.0	66.0	69.0	68.0	S.W.	W.	15	20	F.	.10
Mean, the Week.	29.910	70.7	81.0	62.00		67.3						

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. A., FOR WEEK ENDING AUG. 11, 1888.

LAUDERDALE, J. W., major and surgeon U. S. A. July 28th, promoted to surgeon U. S. A., with rank of major, to rank from July 3, 1888.

CORSON, JOSEPH H., assistant surgeon U. S. A. Leave of absence extended one month. Paragraph 17, S. O. 178, A. G. O., August 2, 1888.

MASON, CHARLES F., first lieutenant and assistant surgeon U. S. A. Reappointed July 28, 1888, to rank from July 2, 1888. Reported for duty at Fort Washakie, Wyo., August 2, 1888.

MERRILL, JAMES C., assistant surgeon U. S. A. Granted one month's leave of absence from August 3, 1888. Paragraph 7, S. O. 178, A. G. O., August 2, 1888.

GARDINER JOHN DE B. W., assistant surgeon U. S. A. Will on the expiration of his present sick leave of absence report in person to the commanding officer at Fort Leavenworth, Kan., for duty. Paragraph 4, S. O. 178, A. G. O., August 2, 1888.

SOCIETY NOTICES.

AMERICAN ORTHOPEDIC ASSOCIATION.—Preliminary Programme of the meeting to be held in Washington, September 18, 19, and 20, 1888.

(1) Newton M. Shaffer, New York: The Modern Treatment of Chronic Joint and Spinal Disease. (2) V. P. Gidney, New York: Immobilization in Articular Disease. Report on the Treatment of Club-Foot by means of the Thomas Wrench, or "T. T." (3) Henry L. Taylor, New York: Mechanical Treatment of Senile Coxitis. (4) A. E. Judson, New York: A Practical Point in the Treatment of Pott's Disease of the Spine. (5) C. F. Stillman, New York: An Efficient and Inexpensive Method for the Mechanical Treatment of Pott's Disease. (6) John Riddon, New York: Rest, in the Treatment of Chronic Joint Diseases. (7) Dillon Brown, New York: Acute Epiphysitis in Infants. (8) Ketch, New York: Remarks on Lateral Curvature and its Early Treatment. (9) De Forrest Willard, Philadelphia: Osteotomy for Anterior Tibial Curves. (10) T. G. Morton, Philadelphia: Description of an Apparatus for Measuring any Inequality in the Lengths of the Lower Extremity. (11) Benj. Lee, Philadelphia: Hematoma Ovis, as a Sign of Injury to the Spine in the Superior Cervical Region. (12) J. A. Steele, St. Louis, Mo.: Two Knee-Joint Excisions. (13) H. Hodges, St. Louis, Mo.: Report on Morton's Operation for the Immediate Reduction of Club-Foot. (14) Ap. Morgan Vance, Louisville, Ky.: Femoral Osteotomy. (15) George W. Ryan, Cincinnati, Ohio: A Case of Reflex (?) Valgus. (16) W. R. Whitehead, Denver, Col.: Remarks on the Operative and Mechanical Treatment of some Joint Diseases and Injuries, with Especial Reference to the Hip, Knee and Elbow Joints, with Illustrative Cases. (17) E. H. Bradford, Boston, Mass.: Analysis of Treatment of Seventy Cases of Club-Foot.

LEWIS HALL SAYRE, Secretary.

285 Fifth Avenue, New York.

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.—Programme of the Second Annual Meeting of the AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS, to be held at Washington, D. C., September 18, 19, and 20, 1888.

Officers for 1888.—President, Dr. Edward L. Keyes, of New York. Vice-President, Dr. George Chismore, of San Francisco, Cal. Secretary, Dr. Robert W. Taylor, of New York. Members of the Council, Dr. John H. Brinton, of Philadelphia, Pa., and Dr. Francis B. Greenough, of Boston, Mass., together with the officers of the Association.

First Day. Tuesday, September 18th.—Business Meeting at 9 A. M. Morning Session at 1 P. M. Address of Welcome, by the President, Dr. Edward L. Keyes. Pyrexia as a Direct Sequel of Gonorrhoea, by Dr. Roswell Park, of Buffalo, N. Y.

Clinical Observations on Gonorrhoea, with Special Reference to Etiology, Duration and Treatment, by Drs. John P. Bryson and Edwin C. Burnett, of St. Louis, Mo. Retrojections in Gonorrhoea, by Dr. Edward R. Palmer, of Louisville, Ky. Local Treatment of Chronic Urethral Discharges, by Dr. Frederick R. Sturgis, of New York. On the Relation of the Prostate to Chronic Urethral Discharges, by Dr. J. William White, of Philadelphia, Pa. The Diagnosis and Treatment of Chronic Prostatitis, with Demonstrations of Instruments, by Dr. Oberlander of Dresden, Germany. To be read by Dr. John A. Fordyce, (by invitation). Adjournment at 1.30 P. M. Afternoon session at 3 P. M. Connection between Masturbation and Stricture of the Urethra, by Dr. Samuel W. Gross, of Philadelphia, Pa. The Curability of Urethral Stricture by Electricity: An Investigation, by Dr. Edward L. Keyes, of New York. The Radical Cure of Stricture of the Urethra by Dilating Urethrotomy, by Dr. Fessenden N. Otis, of New York. The Prognosis of Stricture Based on Thirty Years' Death Record at the London Hospital and the Practice at St. Peter's Hospital, by E. Hurry Fenwick, F.R.C.S., of London, England. (By invitation.) Some Points on the Etiology of Stricture of the Urethra, by Dr. Robert W. Taylor, of New York. Adjournment at 6 P. M.

Second Day. Wednesday, September 19th.—Business Meeting at 9 A. M. The Operative Treatment of Hypertrophy of the Prostate, with Stereoscopic Demonstrations of Specimens, etc., by Dr. Francis S. Watson, of Boston, Mass. Prostatectomy for Enlarged Prostate at the Age of Forty-Two Years, by Dr. Abner Post, of Boston, Mass. The History of the Filaria Sanguinis Hominis: Its Discovery in the United States, and Especially the Relationship of the Parasite to Chylocyte of the Tunica Vaginalis Testis, Dr. William M. Mastin, of Mobile, Ala. Clinical Observations on Diseases of the Testicle, by Dr. L. Bolton Bangs, of New York. Case of Removal of Both Testicles for Recurrent Carcinoma, by Dr. Frank W. Rockwell, of Brooklyn, N. Y. Adjournment at 1.30 P. M. Afternoon session at 3 P. M. Some Points in the Differential Diagnosis of Bladder and Kidney Affections, with Demonstrations of the Cystoscope and Other Instruments, by Dr. Alexander W. Stein, of New York. Demonstration of a Perfected Evacuator and an Improvement in the Method of Removal of Debris from the Bladder, by Dr. Fessenden N. Otis, of New York. Stone in the Bladder in Connection with Spicule Leucemia, by Charles Williams, F.R.C.S., of Norwich, Eng. (By invitation.) Lithotomy in Male Children, by Surgeon-Major Keegan, of Indore, Central India. (By invitation.) Case of Perineal Section for Traumatic Retention—Unusual Condition of the Bladder, by Dr. J. E. Michael, of Baltimore, Md. Adjournment at 6 P. M.

Third Day. Thursday, September 20th.—Business Meeting at 9 A. M. Operations on the Kidney, by Dr. William L. Hingston, of Montreal, Canada. On the Effects of Rapid Changes of Altitude in an Advanced Case of Interstitial Nephritis, by Dr. George Chismore, of San Francisco, Cal. Case of Nephro-lithiasis, Complicated with Hydro-nephrosis, in which Lumbar Nephrotomy was Performed, by Dr. Frank W. Rockwell, of Brooklyn, N. Y. Malignant Tumors of the Seminal Vesicles; Two Cases with Specimens, by Dr. John A. Fordyce, of St. Louis, Mo. Adjournment at 1.30 P. M. Afternoon session at 3 P. M. Case of Bowel Ending in the Urethra of a Child Four Weeks Old—Relief by Operation, by Dr. Arthur T. Cabot, of Boston, Mass. Unusual Case of Urethral Calculus, by Dr. Harvey G. Mudd, of St. Louis, Mo. The Congenital Anomalies of the External Urethral Orifice, by Dr. B. Kaufmann, of Zurich, Switzerland. (By invitation.) The Prophylaxis of Syphilis, by Dr. Prince A. Morrow, of New York. Syphiloma of the Vulva, by Dr. J. Nevins Hyde, of Chicago, Ill. The Value of the Tolerance of the Iodides as a Diagnostic of Syphilis, by Dr. J. William White, of Philadelphia, Pa. And papers by Dr. Felix Gayon, of Paris, France, Dr. Freund, of Strasburg, Germany, and others. Retirement of Old and Induction of Newly Elected Officers. Adjournment at 6 P. M.

Original Articles.

THE VALUE OF CORROSIVE SUBLIMATE AS A PRACTICAL DISINFECTANT.¹

BY WILLIAM B. HILLS, M.D., OF CAMBRIDGE.

It is only within a comparatively few years that the exact nature of infectious material has been determined with any approach to certainty. Previous to this time, our knowledge of the relative value of disinfectants was necessarily very inexact, and their mode of action, although the occasion for numerous theories, entirely unknown. It was assumed, however, that infection had its origin in putrefactive processes. Any substance, therefore, which arrested such processes, or destroyed their chemical products, was considered to possess more or less value as a disinfectant. The only known test of the efficiency of these was their power to arrest decomposition, and this was determined by the presence or absence of odor.

Investigations of recent years, however, have proved as exclusively, perhaps, as is possible that certain infectious diseases are caused by micro-organisms. Consequently, all processes of disinfection are now based on the view that all such diseases are caused by micro-organisms, or by poisons which are produced by the vitality of such micro-organisms. In the present state of our knowledge, therefore, we consider as disinfectants those substances only which have the power of destroying the vitality of micro-organisms.

When the various substances formerly employed as disinfectants were measured by this test, it was found that nearly all of them are much less valuable than was formerly supposed; while some, including ferrous sulphate and the salts of zinc, which had for some years been considered of inestimable value, are absolutely worthless. The hypochlorites, which have always occupied a prominent place in the list of disinfectants because of their power to destroy organic matter and the chemical products of putrefaction, were found to be in fact very efficient; though it is probable that, as they had been hitherto employed, they were more often inefficient than otherwise, owing to a lack of any definite knowledge regarding the proper amount to be employed. With this exception, however, the only metallic salt found to have distinct value for practical disinfection was corrosive sublimate. This salt had been recognized for many years as an efficient antiseptic, and had also been included in the list of supposed disinfectants; but it had not been shown, by the tests employed previous to 1880 or thereabout, to have a superiority over other metallic salts of its class, sufficient to compensate for its expense and poisonous properties.

Our knowledge regarding the relative value of disinfectants as measured by their power to destroy micro-organisms dates from the researches of Robert Koch, published in 1881. Koch found that most micro-organisms are destroyed by a solution of corrosive sublimate of the strength of 1:5000; while a solution of the strength of 1:1000 is fatal to all. He also found that corrosive sublimate has a decided superiority over all other substances as an antiseptic. A solution of the strength of 1:1000000 had a marked restraining power on the germination of the spores of the *B. anthracis*, for example, while a solution of the

strength of 1:300000 prevented their development. The results of other investigators, while showing that its antiseptic and disinfecting powers are possibly not quite so great as claimed for it by Koch, still confirm the latter so far as to show that they are considerably greater than those of any other known substance, with the possible exception of one or two other salts of mercury, which for one reason or another are not so available.

As a result of these investigations, and more directly following the recommendations of the Committee on Disinfectants of the American Public Health Association, published in 1885, corrosive sublimate has taken the place, to a large extent, of all other disinfectants, for nearly every purpose excepting aerial disinfection. Every State Board of Health, to whose reports, for the past four or five years, I have been able to obtain access, has published the recommendations of this committee, thus giving them a wide circulation, and nearly every one has distinctly endorsed them as representing the best methods of disinfection known to us. The Board of Health of Maine alone objects to corrosive sublimate, on account of its poisonous properties, and because it forms an insoluble compound with albumen. Figures showing the exact extent to which it is used, can be obtained, if at all, only through local Boards of Health, and the reports of these are not easily accessible. There were used, however, in the city of Boston, according to the reports of the Board of Health, in 1884, 850 pounds; in 1885, 1,550 pounds; in 1886, 1,400 pounds; and in 1887, 2,250 pounds of corrosive sublimate for purposes of disinfection.

The value of corrosive sublimate, as measured by its power to destroy micro-organisms in aqueous solutions, is not denied. But the efficiency of a disinfectant, and the amount required for certain disinfection, vary with the nature of the material to be disinfected. The disinfecting power of corrosive sublimate for instance, is greater in an aqueous solution than it is in an albuminous solution; for in the latter case a part or the whole of the disinfectant unites with the albumen, forming a compound which has little or no disinfecting power. Thus Klein² found that one and the same kind of blood bacillus was completely killed by an aqueous solution of corrosive sublimate of the strength of 1:25000, whereas it remained unaffected by a solution in nutrient gelatine of the strength of 1:20000 of fluid, — or even by a solution in broth of the strength of 1:10000. In all processes of disinfection with chemical disinfectants, we should therefore take into consideration the chemical changes which the disinfectant undergoes when it is added to the material to be disinfected. If we act upon germs in the presence of material which is capable of forming, with the disinfectant employed, inert compounds, it is clear that the germs are likely to escape unharmed, unless we add such a quantity of the disinfectant that it shall be in sufficient excess after the chemical change is complete. Even then we do not attain perfect disinfection, if the inert compounds are such as are able to protect the germs in any way from the action of such excess. This is the case when we employ corrosive sublimate, or any other substance which coagulates albumen, for the disinfection of albuminous material. Under these conditions a coagulum is formed, and germs included within such solid masses may escape

¹ Read before the Massachusetts Medical Society, June 13, 1888, and recommended for publication by the Society.

² Report of the Local Government Board, London, 1885-6, page 155.

destruction and develop later when the material is thrown into the vault or other similar receptacle; for the excess, if any, is in turn converted to inert compounds by the albuminous material, ammonia, sulphuretted hydrogen or other substances with which it there comes in contact, or it is so far diluted as to become inefficient.

Considering corrosive sublimate in connection with these facts, we see no reason for denying that it is an efficient practical disinfectant for certain of the purposes for which it is recommended by the committee on disinfectants, and employed in this and other countries; bearing carefully in mind, however, that its use is for obvious reasons unjustifiable unless we can dispose of it in some other manner than through lead pipes. But for the disinfection of the excreta, vomited matters, sputum, etc., of persons sick with diseases known or suspected to be infectious, or for the disinfection of clothing or bed-linen soiled with such material, it is wholly unreliable, and is so recognized by sanitarians abroad. Yet a solution of the strength of 1:500 is recommended for these purposes by the committee on disinfectants, and following them by most of the Boards of Health in this country.

An examination of the report of this Committee fails, however, to bring to light the slightest particle of evidence upon which such a recommendation could have been based. The statements made relative to corrosive sublimate are very contradictory and confusing; the biological tests recorded are few in number and very unsatisfactory; and the report, as a whole, shows evidence of hasty preparation, and is not at all creditable to the Committee. A brief review of the alleged evidence presented by this Committee in favor of corrosive sublimate will, I think, prove the correctness of this criticism.

It is to be observed, first, that the Committee recognize the fact that the quantity of disinfectant required for perfect disinfection depends upon the nature of the material in which the germs are contained — provided, however, the disinfectant is an oxidizing disinfectant. On page 19 of the report the apparently contradictory results obtained in two series of experiments with potassium permanganate are thus explained: "The wide difference as to the quantity of the disinfecting agent required in two series of experiments depends upon an essential difference in the nature of the fluid in which the germs to be destroyed were contained. The large amount of organic material present in the blood, as compared with that in the culture fluid used in the second series of experiments, fully accounts for the difference, for the disinfecting agent is, itself, destroyed by contact with organic matter."

Also, on page 14, we find the following: "The fact that the oxidizing disinfectants are destroyed in the reaction to which their disinfecting power is due, makes it necessary to use them in excess of the amount of organic material to be destroyed; otherwise germs included in masses of material not acted upon would be left intact in a fluid which is no longer of any value for their destruction, and, as a few germs may be as potent for mischief as a large number, there would be a complete failure to accomplish the object in view." The Committee make essentially the same statement on page 117, and thus conclude: "The only safe rule in the practical use of oxidizing disinfectants is to use such a quantity of the disinfecting agent that

it shall be in excess after the reaction has taken place."

But, if it is necessary to take into consideration the chemical changes which take place in the use of oxidizing disinfectants, why is not the same precaution necessary in the use of all disinfectants? For there is scarcely a substance which has been suggested as a disinfectant which may not undergo some chemical change when brought into contact with such organic mixtures as require disinfection, and there is none which is more liable to change than corrosive sublimate. The Committee, however, either ignorant of this fact, or forgetting it in their haste, actually use the oxidizing property of the hypochlorites, which makes them the most valuable chemical disinfectants at our disposal (since, if we use an excess, we destroy organic matter and germs at the same time), as an argument against them and in favor of corrosive sublimate, which not only may undergo more changes than do the hypochlorites, but such changes as may render it absolutely worthless.

"For this reason," they say (page 14), "the metallic salts, such as corrosive sublimate, which are not destroyed by contact with organic matter have a superior value for the disinfection of masses of material left *in situ*, such as the contents of privy-vaults and cess-pools. In this case, even if germs enclosed in an envelope of albuminate of mercury escape destruction, they will be prevented from doing mischief so long as they are included in such an envelope, and the wonderful antiseptic power of the reagent used will prevent their development for a sufficient length of time to ensure the complete loss of vitality of any pathogenic organisms present." It is, however, a well-known chemical fact that corrosive sublimate is destroyed, or, at least, undergoes chemical changes when brought into contact with organic matter. It is immediately converted by albumen to the insoluble albuminate of mercury. For this reason, albumen is recognized as the most efficient antidote in cases of poisoning by corrosive sublimate. Corrosive sublimate in solution is further decomposed by a very large number of other compounds, organic and inorganic, and by unknown constituents of most organic mixtures. There are but few substances whose range of incompatibilities is so wide. The Committee apparently admit the possibility of its uniting with albumen, but think we shall, even then, attain perfect disinfection, because the germs will be imprisoned within the envelope of albuminate of mercury, and will *probably* be prevented from developing. But this is not disinfection. Disinfection consists in the *destruction* of disease germs.

Later, the Committee realize their error, and admit the inefficiency of corrosive sublimate for the disinfection of excreta. Sternberg thus writes (page 59), referring to some experiments which show that this substance is not efficient for the disinfection of fresh tuberculous sputum: "The experiments of Schill and Fischer, which I had not read when the recommendation was made (referring to the use of corrosive sublimate for the disinfection of sputum and fecal discharges), indicate that it will be necessary to use some other agent when the object in view is to destroy the infective virulence of tuberculous sputum. And in general it will no doubt be better to use an oxidizing disinfectant, such as the hypochlorite of soda, when the germs to be destroyed are imbedded in masses of albuminous material; for such masses are disintegrated and destroyed by oxidizing agents, whereas corrosive

sublimate has the opposite effect in consequence of its power of combining with and coagulating albuminous material." And yet the Committee has recommended a solution of corrosive sublimate of the strength of two drachms to a gallon of water as equally efficient with chloride of lime for the disinfection of excreta, vomited matters, and sputum. Sternberg himself, in his Lomb prize essay, recommends chloride of lime as the most efficient agent for the disinfection of excreta, and recommends corrosive sublimate as efficient for liquid discharges only. But its value for *this* purpose must necessarily depend on the character of the discharges. If they contain albuminous matter in quantity sufficient to form with the disinfectant a coagulum, they cannot be disinfected by it with any more certainty than can solid discharges. The experimental evidence upon which this recommendation is based will be presented later.

The employment of corrosive sublimate for the disinfection of large masses of material, such as the contents of vaults, cess-pools, etc., is absurd, and would not deserve serious notice were it not for the fact that the report of the Committee on Disinfectants, recommending it for this purpose, has been so widely accepted. But the Committee, in a note inserted after their recommendations were printed, admit that the complete disinfection of such masses is difficult and expensive, and probably impracticable, and insist upon the necessity of destroying infectious material before it is thrown into receptacles of this kind. This admission, however, appears to be based upon impracticability due solely to expense and obvious mechanical difficulties, and not to changes tending to render the disinfectant inefficient. But, if a disinfectant is for any reason inefficient for the disinfection of small quantities of excreta, it is for the same reason inefficient for the disinfection of large quantities. The action of corrosive sublimate upon albumen is, therefore, a fatal objection to its use for this purpose. But such decomposing masses are constantly disengaging ammonia and sulphuretted hydrogen, both of which convert corrosive sublimate into insoluble compounds, and, owing to the high atomic weight of mercury, these gases fix comparatively large amounts of this metal.

Decomposing excreta also contain alkaline carbonates, phosphates, urea, and doubtless many other substances which react with corrosive sublimate and destroy its efficacy, for there is no reason for believing that any of the resulting compounds have any disinfecting power.

It has been suggested, however, that the albuminate of mercury, which is slightly soluble, has germicide and antiseptic powers sufficient to make it superior to all other disinfectants for this purpose, and that this can be relied upon to prevent the development of such germs as are imprisoned within the coagulum of albuminate of mercury. Professor Vaughan, for instance, considers it probable that the value of corrosive sublimate as a disinfectant is due to the formation of this albuminate; and Sternberg, in the *Medical Record* for August 1, 1885, affirms positively that the albuminate is a potent germicide, but gives no facts in support of this statement. Klein's experiments, however, suggest that its germicide power is very slight at the most. Admitting, however, that it has such power, the amount re-dissolved is very small, and this is likely to be converted at once to the inert sulphide by the sulphuretted hydrogen present.

Used as recommended by the Committee, corrosive sublimate is a good deodorizer so far as it goes; but has no more value probably than the ferrous sulphate which it has to a great extent superseded.

If we examine the experimental evidence upon which corrosive sublimate is recommended as an efficient agent for the disinfection of solid excreta, we find that it comprises ten or twelve biological tests made with pure cultures of micro-organisms, or with broken-down beef-ten, or with semi-solid faeces. Some of these were successful, others were failures. It does not appear to have occurred to the Committee that the *nature* of the material acted upon had any influence on the result in the unsuccessful experiments, or that any further investigation was desirable for the purpose of discovering the cause of the failures. But it was assumed that the *quantity* of material was too great for the amount of disinfectant employed, and that, if the latter had been added in larger quantity, or if the time of exposure had been longer, the experiment would have been successful. A liberal allowance was, therefore, made on the side of safety, and a recommendation made accordingly. The evidence upon which corrosive sublimate is recommended for the disinfection of liquid discharges is the following: "The liquid discharges from the bowels of patients with cholera, typhoid fever, advanced tuberculosis, septic diarrhæa, etc., may be fairly compared with our broken-down beef-ten as regards physical and biological characters." The amount required to sterilize a certain quantity of broken-down beef-ten was, therefore, determined, multiplied by two, and the product recommended as efficient for the sterilization of an equal amount of liquid faecal discharge. A recommendation based upon experimental work of this amount and character is not creditable to a Committee of the leading Sanitary Association of this country, and is not entitled to the favor with which the one in question has been received.

The importance of the disinfection of excreta, etc., cannot be over-estimated. It is conceded that such material must be disinfected before it is thrown into the vault or similar receptacle, because of the impracticability of disinfecting large masses of matter. A disinfectant, to be effective, must have penetrating power sufficient to bring it into intimate contact with every portion of the material to be disinfected. Corrosive sublimate does not have this power, owing to its property of coagulating albumen. It should, therefore, be replaced, if possible, by some agent to which this objection cannot be made. We have such an agent in chloride of lime. It has the power of penetration; it oxidizes and destroys organic matter, and it is, in addition, an efficient germicide, bearing in mind the fact that it must be used in such quantity that it shall be in sufficient excess after the reaction between it and the organic material is complete.

Corrosive sublimate, in a word, though a very efficient disinfectant, as measured by its power to destroy germs, is limited in its applications. It can be used for the disinfection of furniture and other articles made of wood or porcelain, or even metal, if varnished, the floors and walls of rooms, such parts of ships as can be reached with solutions, the hands and the surface of the body, and clothing and bed-linen, if not soiled with discharges; in other words, for the disinfection of surfaces which are not themselves injured by contact with it, or surfaces which do not contain

material of such a character as to destroy its efficiency. Its use for these purposes is, however, very much restricted, because we have no means of disposing of it, except through lead pipes.

Objections have been made to it because of its poisonous character. The danger of poisoning, however, is very slight. The solutions employed are very dilute, and its taste is sufficiently disagreeable to attract attention before an amount sufficient to do any injury has been taken. If the solutions are colored, the danger of mistakes is much lessened. The same objection may be made with equal reason against all substances which we now recognize as disinfectants. Care is necessary in the employment of all of them, and those entrusted with their use should be informed of their properties, that all necessary precautions may be taken.

There is, however, one process of disinfection with corrosive sublimate to which this objection may with some reason be made. I refer to its use for the disinfection of streets, for which purpose it has been employed by the Board of Health of Boston for the past two years or more. If its use for this purpose is continued, the time cannot be far distant when the beds of the streets will become saturated with various compounds of mercury. All of these, so far as we have any knowledge of them, are violent poisons. Is any danger to be apprehended from continually inhaling or swallowing, month after month, dust loaded with compounds of mercury? This is a question deserving serious consideration at the hands of the Board of Health. While not claiming that the process is positively a dangerous one, I believe it is one which involves some risks, and one which it is advisable, therefore, to discontinue.

UTERINE DISPLACEMENTS AND THEIR INFLUENCE ON THE GENERAL NERVOUS SYSTEM.¹

BY FRANCIS H. DAVENPORT, M.D.

UTERINE displacements have from the earliest times about which we have any medical knowledge been recognized as existing, and as giving rise to disturbances both general and local. It is probable that prolapse and procidentia, as being malpositions which would most quickly and surely be seen, were the first to be diagnosed and treated. Later, as the vaginal examination became perfected, would follow the forward and backward displacements, reserving for these days of gynecological enlightenment the recognition of the more refined shades of departure from the normal, which have filled our text books with subvarieties, and for whose relief a legion of pessaries has been invented.

The impetus which has been given to the study of this branch of medicine in the last twenty-five or thirty years has resulted in placing a great deal that is of value on a sound basis. With regard to the special branch of uterine disease which is the subject of this paper, the following may be said: We have learned to diagnose the various malpositions to which the uterus is liable, and the tactus eruditus is now seeking new worlds to conquer. Tubes and ovaries whose recognition by a large proportion of practising physicians is still a matter of considerable difficulty are pal-

pated by the trained gynecologist, and their pathological changes diagnosed with wonderful ease. The more remote and insignificant structures of the pelvis are now trying in vain to elude the searching finger of the specialist; and in one of the latest text books minute and lengthy rules are given for finding not only the round ligament and ureter, but even for differentiating the various muscles of the pelvic floor, and palpating the pelvic arteries and nerves.

The chapter on the diagnosis of displacements may in a certain sense be said to be closed. So, too, with the mechanical treatment of these disorders. Necessity is the mother of invention, and the skill and perseverance of the gynecologist in overcoming the difficulties he has had to contend with, have resulted in the multiplication of pessaries of all forms from the external to the intra-uterine, and of substances as various as ingenious, to meet all possible varieties. Slight modifications will continue to appear, but they will be on the lines already marked out, and will in all probability embody no new principle. It is to my mind a fair indication of the feeling which may be supposed to govern the question of treatment in the small proportion of cases which do not show themselves amenable to the mechanical devices alluded to, that progress is in the direction of operative measures, and that too of a bolder character than would have been dreamed of twenty or even ten years ago. Who, for instance, twenty years ago would have thought in his wildest moments of performing laparotomy and suturing the fundus uteri to the abdominal wall to cure an obstinate retroflexion? Yet that has been repeatedly done. It is an outcome to be sure of the feeling of security with regard to opening the abdominal cavity which the splendid results of our leading specialists have developed. Yet still other indications, less striking perhaps, but showing the same tendency, are the Alexander operation of shortening the round ligaments, Sanger's bold procedure of forcibly separating adhesions of the uterus to adjacent parts under ether, or Byford's proposition to shorten the sacra-uterine ligaments by an operation from the vagina.

While such questions as these are, as I have said, practically settled, it is a beneficent law which holds good in any department of human knowledge that it cannot be exhausted. Certain outposts are taken and occupied, and the scene of the conflict shifts to new ground. We know the course which the blood takes in its rapid circulation through the body. We busy ourselves now with counting the millions and billions of white and red blood corpuscles, and noting their varying proportions in disease, or discussing the microscopical character of the membrane which forms the coat of the capillaries. So the question concerning displacements, about which doubt exists to-day, and which are the subjects of discussion, are on entirely different lines from those we have mentioned above.

Curiously enough, one question which it would seem would naturally be the first to be settled, is only recently being met with any unanimity of sentiment. I refer to the normal position of the uterus. It is begging the question to affirm, as some writers do, that an organ, suspended in the pelvis between other organs liable to such temporary variations of size as the bladder and rectum, can have no normal position. On the other hand, it is manifestly absurd to judge a freely movable organ by the same rules as we would a spleen or kidney, and make any deviation from an arbitrary fixed

¹ Read before the Massachusetts Medical Society, June 12, 1888, and recommended for publication by the Society.

standard a malposition. The truth seems to lie between, and the most accurate observers now recognize a normal position of the uterus which varies within certain bounds according to the condition of the adjacent pelvic viscera.

I have said that the question of the mechanical treatment of displacements was practically settled, meaning by that that where such treatment was indicated, the principles on which it would be carried out were essentially known. There still exists, however, great difference of opinion as to the advisability or necessity of such treatment at all. Some writers, a respectable minority at least, maintain that displacements of the uterus very seldom give rise to symptoms, and that when they do general treatment is preferable to local. Still others claim that they are much more often the cause than the result of general conditions, and that not only is it useless to ignore mechanical treatment, but that the best results are obtained by such local treatment either alone or primarily.

These differences of opinion are based upon the different views which are held with regard to the dependence of one upon the other in the question of causation, and their subsequent reaction upon each other. Let me make this clearer by illustration. We find in a given case a malposition of the womb. With it is associated a debilitated state of the nervous system, which shows itself in the protean ways that are so familiar to us under the convenient but vague term of neurasthenia. There is now a problem to be solved in order to arrive at such a correct understanding of the case, that we shall be able to treat it successfully. What has been the sequence of events in this particular instance? Has the general health begun to suffer, the nutrition become impaired, the muscular system weakened, fat absorbed, and as a result the natural supports of the uterus become relaxed, and thus allowed of a version or flexion? Or, on the other hand, has the uterus become displaced, has congestion resulted, followed by a low grade of inflammation, has this begun to react upon the nervous system, and finally resulted in the more or less complete loss of tone which we find in these cases? If we claim that the first hypothesis is correct, our course is plain. Build up the nervous system by rest and tonics, make fat and blood by forced feeding, and as the body becomes better nourished, and the muscular system grows stronger, the uterus will right itself.

On the other hand, if we take the starting-point to be the displacement, our rational plan is to restore the uterus to its normal position, relieve the congestion, diminish the nervous strain, and our patient is cured.

There are to-day firm, I had almost said bigoted, adherents of both these opinions. There are men who make light of the local symptoms of their neurasthenic patients, who claim that treatment of the genital organs rarely does good, and often does harm, and who concentrate all their attention on general treatment. So, too, there are others who refer all these complex and remote symptoms to some lesion of the pelvic viscera, and are content to treat those exclusively. As a natural and almost inevitable result of circumstances, it follows that those who devote themselves largely to gynecological practice should more often err in the last-named direction, while those who from the character of their practice or from preference see few such cases should fail to give these symptoms their proper significance.

That neither of these extreme views is correct is self-evident. It is, however, insufficient to state in a general way that the advocates of both systems go too far. Little has been done unless such practical considerations are urged and demonstrated, as will set forth in a clear light the true relations which prevail between disorders in the genital sphere, and general nervous symptoms. It will be the object of this paper, if possible, to do this.

There are several questions to be discussed. In the first place we are met at the outset by the inquiry which suggests itself always in considering this subject, is the relation between the genital organs and the whole nervous system so peculiar, that disorders of the latter more often follow disease of the former, than is the case with other organs of the body? The ancients believed it to be so when they attributed to the influence of the womb those nervous manifestations which under the name of hysteria we recognize as a common symptom of a debilitated nervous condition. We now know that hysteria is not necessarily associated with uterine disease, that in fact it occurs in men, yet its preponderance in woman is a suggestive fact. Granted that a woman's nervous system is naturally weaker than a man's, may the cause not lie in the fact that her generative organs during their period of functional activity call for a greater expenditure of nervous force even when in health than any other organ or set of organs? If this is so in health, how much more potent must be their influence when diseased. That such nervous phenomena as we generally call hysteria or the more pronounced condition of nervous debility known as neurasthenia almost exclusively occur between the years of puberty and the menopause, confirms the opinion that there is in the majority of cases a more than chance relation between the disorders of the genital functions and the general nervous disturbance.

The clinical experience of those who have had the largest opportunities for observing these cases, will, I am confident, be confirmatory of this opinion.

There are, undoubtedly, certain classes of pelvic disease which more than others predispose to coincident nervous wear and tear. The amount of pain which accompanies the lesion is one of the criteria by which we judge of the probable effect upon the nervous system. We, therefore, find certain forms of ovarian disease accompanied by dysmenorrhœa very frequently associated with nervous debility. This rule is not absolute, however, for cancer with its gnawing pain does not affect the nervous system in the way that I am describing. It saps the strength and diminishes the vital powers, but it does not make the whole nervous organization hyperæsthetic, if I may so express it. Under this latter condition the nerves respond to the slightest stimulus, even that of a lively imagination, until it needs but a suggestion of discomfort in one part of the body to start reflex symptoms of the most acute type in another. There are certain affections of the female genitals which seem particularly liable to exert this baleful effect upon the whole nervous economy. Some of these have been recognized. Emmet long ago, and many others since then have pointed out the marked results in this direction of a neglected laceration of the cervix. After the primary symptoms of leucorrhœa, backache, dyspareunia, and a feeling of weight in the pelvis have persisted for a longer or shorter time, there are very apt to follow

those phenomena which begin as nervous debility and end as nervous prostration, and these latter symptoms may soon entirely predominate over the former.

This result is more apt to follow if in addition to the cervix the perineum is also lacerated.

Chronic pelvic cellulitis, of which we are hearing less and less, inasmuch as many cases which we formerly classed under this head, are now known to be affections of the tubes and ovaries, chronic metritis, and its result areolar hyperplasia, and even chronic endometritis, all furnish their contingent of neurasthenic cases.

Less, however, has been said about displacements as a cause, and yet I conceive that they not infrequently are the starting-point of grave nervous troubles and serve to keep it up. This cannot be said of all forms of displacement alike, and some consideration of the various malpositions of the uterus with reference to their significance in this respect, is of importance here.

Backward displacements of the uterus are by all means more serious than forward ones. The retroflexions and versions occur oftener, admit of a much greater degree of malposition, and with themselves dislocate other organs more than do the anteversions and flexions. The resulting disturbance to the blood and nerve supply is much more profound. Anteversions pure and simple are in my experience rare, and do not as a rule give rise to symptoms. When, however, with the anteversion there is some descent of the uterus as a whole, a combination which is by no means rare, the resulting effect upon the whole system is much more marked. The same may be said of ante-flexion, though here symptoms referable to the bladder and back, and disorders of menstruation are much more common.

Retroversion of the uterus is the most common form of malposition that we meet with, and when of the first or second degree, that is, if the version is not more than one of 90° , it may often exist without symptoms. If the organ, however, is deflected from its normal position in which the long axis of the uterine body makes a right angle with the axis of the vagina, more than 90° , we have symptoms arising from pressure on the rectum, and are apt to have dislocation of other organs. The danger of neglecting the treatment of even the slighter degrees of this displacement lies, as I conceive it, in the fact that as the axis of the uterus approaches that of the vagina, the weight of the abdominal viscera comes directly upon the fundus, and the resistance to descent of the uterus being lessened, slight degrees of prolapse are likely to follow.

Retroflexion adds to the symptoms which it causes in common with the version, those due to the uterus itself being bent, either from a loss of tone of the muscular structure of the organ, or from being drawn over by adhesions. This flexion of the uterus is an exceedingly grave symptom, and productive of the most marked general disturbance. Both for this reason, and because its treatment is often difficult, requiring even severe operative measures for its relief, it is commonly regarded as perhaps the most serious displacement in the category.

Prolapse and procidentia follow closely on retroversion in frequency, and equal if not exceed it in importance. The severer forms of falling, especially when complicated with a rolling out of the anterior

and posterior vaginal walls, cystocele and rectocele, are so easily recognized by both patient and physician that their true value as a cause of local and general symptoms is accorded them. Not so, however, with the milder forms, where either from increased weight, or a slight giving way of the natural supports, the uterus sinks a little lower in the pelvis. These relatively minor grades of displacements are very often passed by unheeded, when they in reality are a cause of constant and distressing symptoms. They are not recognized for the reason that in the ordinary method of examination they cannot be detected. With the patient in the dorsal position, the uterus, unless fixed, recedes from the vulvar orifice, and the examining finger fails to detect its abnormal mobility. Even if the patient is requested to strain, the action of the abdominal muscles is not sufficient to force the uterus as low as it descends when the patient is standing, and the force of gravity is added. The proper method of examining in these cases is with the patient standing in the erect position. Then if she is requested to contract the abdominal muscles as if to relieve the bowels, the finger in the vagina will appreciate the full amount of descent.

In the same category, though of less relative importance, are the displacements of the vaginal wall which may occur without any prolapse of the uterus, though their tendency is to produce such in time. They have only recently begun to receive the attention which they deserve.

Lateral displacements are merely subvarieties and minor complications of the forward and backward malpositions which we have spoken of, and do not need any special mention.

From the foregoing it will be seen that the displacements, which most often give rise to serious symptoms and demand treatment, are of the third degree or of lesser degrees when complicated with prolapse, retroflexion especially when bound down by adhesions and prolapse; less frequently ante-flexion, anteversion with prolapse, and least frequently of all simple anteversion, and retroversion of the first two degrees.

If we study this order of relative frequency closely, it will be seen that there are three conditions upon which the gravity of the symptoms depends. First, prolapse; second, adhesions; and third, flexion. I have named them in this order because it seems to me that both as regards severity of local symptoms, and secondary effect upon the whole system, especially the nerves, that is the proper order of relative frequency and importance.

I am convinced that prolapse of the uterus, especially in its minor forms, has been much neglected or underestimated as a factor in the pathological significance of uterine displacements. A large proportion of anteversions give rise to no symptoms unless complicated with prolapse; the same is true of many cases of retroversion, and the symptoms complained of in these cases are those characteristic of a descent of the womb, and are relieved by the treatment appropriate to that malposition. A slight amount of prolapse will cause more disturbance with the circulation than a very marked version, and the constant dragging and bearing down, which is the almost universal complaint, is excessively wearing upon the nerves.

The detrimental effects of the presence of adhesions are shown in two ways: first, from the impairment of the mobility of the uterus which ensues; and second,

the production of pain due primarily to the inflammation of the peritoneum, and secondarily to the implication of nerve filaments in the contracting bands of adhesions.

A bending of the uterus upon itself is of importance pathologically for several reasons. The two chief causes, however, to which its effects upon the general health are due, are the interference with the circulation in the organ itself, as a result of which alterations of tissue occur in time, and the displacement of other organs, notably the tubes and ovaries.

Having thus considered in a general way the various malpositions to which the uterus is liable, and the special circumstances connected with the different forms to which their pathological importance is due, it remains briefly to refer to their effect upon the system at large, and to insist upon the necessity of treating them.

I do not by any means claim that uterine displacements are always the primary occurrence, and that they invariably cause grave nervous symptoms. On the contrary, there is that large class of cases of displacement from loss of tone of the uterine supports, where muscular debility is the first factor, and the uterine condition is merely one mode of expression of it. But, even in these cases, the continued presence of the pelvic trouble tends to keep up the condition of nervous debility, of which it may be originally only a symptom.

Of the three principal factors in these cases of displacement to which I have referred — flexions, adhesions, and prolapse — the importance of the first two is, I think, sufficiently recognized by the profession. The rôle they play in inducing and keeping up a state of nervous exhaustion is well known. The difficulty here is not that the necessity of treatment is not fully appreciated, but that they rank among the affections of the genital organs which are the most obstinate to yield to the ordinary methods.

Cases of flexions with adhesions were for a long time, and still are by some authorities, considered incurable, and it is the exceedingly unsatisfactory results of the methods of treatment which have been hitherto tried in a class of cases which entails so much local suffering and exercises such a deleterious effect upon the whole nervous system which has led to such severe operative measures being proposed and tried for their relief, as laparotomy, forcibly breaking up the adhesions, and stitching the fundus to the abdominal wall.

It is, however, different with prolapse, especially in the earlier stages. The importance of this has, I am confident, been under-estimated. I claim that is the one element which makes versions, which would otherwise give rise to no symptoms of any pathological significance. The constant feeling of weight in the pelvis, to which is soon added weakness of the muscles of the back and thighs, making locomotion painful, and standing even more difficult, is generally due either to the yielding of the muscular and ligamentous supports of the uterus, or the loss of the integrity of the pelvic floor as a result of parturition.

I would, therefore, urge in all cases where the loss of nervous tone is a prominent symptom, where headache, dyspepsia, inability to walk, sleeplessness following the least excitement, loss of mental power, as shown by the inability to concentrate the mind on any subject, loss of ability to control the emotions, evinced

by fits of crying, depression, or temporary exaltation of spirits, followed by a corresponding reaction, where some or all of these symptoms are found, the careful consideration of the accompanying pelvic symptoms, and, if such exist, even though to a mild degree, would recommend a vaginal examination.

If any of the various malpositions be found which have been described in this paper, the important question has to be decided whether it should be treated, and when. If the history of the case makes it clear that it is the primary factor in the case, the first step should be the attempt to cure the pelvic trouble by treatment. The only exception to this rule is in those cases where the general health is so much reduced that the strain necessary to undergo local treatment would be too great. Here attempts must first be made to so improve the nervous condition by rest, food, and tonics, that treatment may be begun. The Weir Mitchell treatment, either thoroughly carried out or modified to suit the individual case, will serve as a model. In cases of this sort, if local treatment is entirely neglected, there may be improvement up to a certain point, but beyond that it will not advance if the special treatment of the genital complication is neglected.

Where the malposition is secondary, if taken in time, local treatment may sometimes be avoided. With the improvement in the condition of the general system, the uterus may recover itself. If it has persisted for some time, however, it in turn becomes one of the causes which keep up the depreciated state of the general health, and must be rectified before perfect health is restored. In these cases of profound nervous debility, every organ and function must be interrogated, and the ability to correctly estimate the pathological significance of the various departures from the normal conditions which are found, and the choice of the order and methods of treatment, is a matter requiring extreme delicacy and skill, and upon it depends the success of the physician.

As to the methods of treatment to be pursued, it is not the purpose of this paper to go into details. A few general considerations may be urged. Malpositions uncomplicated by adhesions or by inflammatory conditions in the pelvis, especially in unmarried women, may frequently be restored to their normal position and a pessary adjusted with a minimum of nervous strain to the patient at one sitting under ether. Where there are adhesions, or even in cases where there are not, but the vagina is narrow, the abdominal walls rigid, and the bimanual method of reposition difficult or impossible, the slower method, by packing the vagina, is to be recommended.

Where the uterus, on examination in the dorsal position, seems normal, but yet the patient complains of symptoms which suggest some displacement, the examination in the erect posture for the slightest degrees of prolapse should not be neglected.

Of especial importance to my mind in this connection are slight tears of the perineum, impairing the integrity of the pelvic floor. These are often overlooked because they not infrequently occur either at the sides where they loosen the attachments of the pelvic fascia, or beneath the mucous membrane in the muscular structure of the perineal body, and the almost intact external perineum gives no evidence of the damage done. These changes, the result of parturition, are a fruitful source of prolapse of both uterus and vaginal

walls, and their repair by a plastic operation will do much toward restoring the general health.

In the obstinate cases of retroflexion, where a pessary will not hold the uterus forward, the Alexander operation of shortening the round ligaments, or one of the other more serious operations, may be considered.

HEBREW PHYSICIANS IN THE MIDDLE AGES.

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FROM recently issued publications (Münz, Hosmer) it appears that inmates of monasteries were not the only scholars that made the higher education of Greek and Arab the heritage of modern life. The work of the Jews in this direction is the more striking because of their political and social ostracism. Their personal worth, however, the value of their minds, could not be ignored by the intelligent; and in no field of thought have they won more fame, and thankful recognition among the Gentiles than in medicine. Theological views disappeared when human needs were felt. Pope and prince did not hesitate to follow the advice of Israelitish doctors. The poor were not neglected by them. They served as instructors to those about them. Both Orient and Occident honored them as men and as practitioners. Not only did these people produce an unusual proportion of good surgeons to practice current methods, but through them, at the Renaissance, medicine was revived, to become the parent of physical science in general. In the composite picture presented, we notice a few prominent traits.

Isaac Israeli (obit 950), was a renowned practitioner, and his work "De Diatetica," published among the Arabs, may claim to be of decided value even now. He lived to be 110 years of age, and when asked why he had never married, replied "I have written four books, which will preserve remembrance of me better than children."

Maimonides,¹ in his epistle to the luxurious Sultan, in Egypt, while prescribing for the body, dared to direct the mind toward a rational living.

One ambitious son of Israel, however, a famous doctor, turned Mahomedan; but this change did not bring the desired reputation in a community hostile to those of his original faith; his last days were not peaceful. Another learned one became prime minister of the Great Khan, at Bagdad, and used his power to advance all branches of knowledge; yet envy and ill-will worked his fall. The popular hate toward this race was then (1291 A. D.) the cause of death to many thousands, jealousy, as in our day, being the apparent motive. Moslem physicians generally understood more of astrology and magic than of the noble art of healing, although the Jews, also tried to guide human conduct by stellar positions.

The Hebrew court physicians among the Spanish Arabs did much to preserve and transmit to modern central and western Europe the medical lore of ancient Greece and Rome, though little actual progress in natural or morbid physiology appears to have been made and recorded by them. The contemporary Christian rulers in the peninsula, despite their catholicity, prized the wise sons of David not less than

did their Moorish cousins. At the same time, the common folk, similarly to the Islamic masses, persecuted the "peculiar people," for both religious and economic reasons. A Hebrew surgeon persuaded John II, of Portugal, to refuse aid to Columbus when he asked ships for his voyage of discovery. Cohen and Halevi are names famous for learning and virtue.

Toward the end of the 15th century, a most sad tragedy drove the Judaic people, and with them the physicians, from Spain and Portugal; so that those who, about that time needed a surgeon, were left to the care of quacks and impostors, or found themselves forced to send, at great cost, to distant lands.

Touching central Europe, it is well-known (says Livius First) that, from Charlemagne to Francis First (who requested Charles the Fifth to send him an Israelitish doctor) every ruling prince had a Hebrew as personal physician. The one with Charles the Bald had such a name for magic and witchcraft, that common report credited him with having swallowed up a wagon laden with hay, together with team and driver. Although less advanced and progressive than those of Spain, yet Jewish physicians throughout Germany were fit to be called learned when compared with their Christian colleagues, who knew little of remedial science, and were sunk in ignorance and superstition.

In Ratisbon the inimical citizens complained that almost everybody allowed Israelites to attend them. In various parts of central Europe, from Königsberg (where in 1538, it was unlawful for such to practice) to Strassburg, Hebrew doctors were among those who were first excused from onerous taxes. Import duties on medical books and surgical instruments do not appear as exceptions from such franchise. Will the United States be flattered by comparison?

In Vienna they could not, at one time, be practitioners because of their inability to subscribe to the customary oath, "*de immaculata conceptione*:" in 1517, however, the emperor abrogated this rule. At different times (1373-1567), and in various places throughout Germany, city physicians were employed with definite honoraria. During the 15th century, Jewish women were successful in medicine. In 1419, one received official recognition from the government: about 1430, another was a skilful oculist. Similar instances were not rare, among the Teutons. The renowned John Reuchlin had two Hebrew scholars and physicians as friends and instructors.

In France we find a comparatively larger and more brilliant series of medical men, some of whom possessed the favor and protection of sovereigns, from Hugh Capet to Maria di Medici. Numbers of them were eminent scholars in science, and the ancient literature of physic (translating from Arabic), as well as instructors in medicine to many pupils of the Christian faith, together with those of their own racial descentance.

The Montpellier school, so flourishing in the first half of the thirteenth century, was in great part founded and sustained by them. Nevertheless, one illustrious son of Abraham, in 1288, became a victim of the *auto de fé*, and several were tortured to death on false charges of poisoning.

When, in 1453, the crescent rose above the cross in Constantinople, skill and prudence caused the Hebrew doctors to be trusted and honored by those in power. The influence thus gained was often used to lighten

¹ Dr. Münz, affirming that the industry of Maimonides, as a practitioner and writer of authority in professional matters, has not been justly shown, states his intention to publish a paper thereon.

burdens which discriminating laws put upon their co-religionists. In the latter part of the sixteenth century, the widow of a famous practitioner attended Sultan Mahomet II, sick with small-pox. It is stated that, with her medicaments, she restored him to health, and the grateful patient richly rewarded her. The record does not say that diseases were *self-limited* in those days.

In Poland, a place of refuge when the Jews were driven from Southwestern Europe, intellectual superiority and medical skill procured for them, in many instances, the favor of kings and nobles, and release from the burdens especially imposed upon their people.

It is remarkable that while in outlying territories subject to the hierarchy of Rome the Jews were generally persecuted with vigor, in Italy they lived under more satisfactory relations with the church authorities. In nearly all the larger cities they were active in scientific research, practised medicine, and stood well in the opinion of the Christian communities where they lived. From which we may learn that the laws of physiology (laws of nature, of science, of God) do not show special deference for any particular form of theology. One of these, Leo, had such a good reputation, that, in 1331, he was excused from the Venetian governmental examination usually required. A Mantuan, in 1376, was the first Israelite who printed and published Hebrew books. In his medical works we find ideas that seem quite wonderful, even in the midst of our latest discoveries. Emmanuel, a friend of Dante, like him, wrote an "Inferno," which, in spirit and humor, was equal to that now classic, and in elevation and nobleness of vigor surpassed it. He put the unskilful doctors and quacks in Plutonian regions because they did only harm to human society, and hastened the passage of credulous sick persons to the final sleep. Hippocrates was given a station among the sinners because he held his great wisdom secret, and narrow heartedly kept his medical books from his fellow-men. In the treatment of exigent patients, Emmanuel was witty and original, often successful; but details are too long for quoting here. A Jew was among the foremost men of the celebrated Medical School of Salerno, which also was indebted to Hebrew scholars for much of the translations from Arabic into Latin there used. At the instance of Charles I, King of Naples, a Jew translated from Hippocrates a treatise on diseases of the horse. One of these doctors is praised by a Christian prince, not only for his professional skill, but because he helped the poor and needy, and was not stern in demanding payment for his services.

Amatus Lusitanus (obit 1592), had a great name as physician. He studied to know the nature or natural history of disease. At the close of a long and busy life he could say that he had never accepted rich gifts, had attended the poor without regard to pay, made no difference between Jew, Christian, or Turk; that neither family reasons, hard journeys, nor anathemas ever kept him from duty. In numerous instances, medicine seemed to be the heritage of families.

Paracelsus is mentioned as one who attempted to reform medicine, which, in his day, was grievously burdened with ignorance and fraud.

One of the recommendations of the erudite Isaac Israeli is that the practitioner should not try to do more than his own health will warrant, because duty requires that he should be well in body and mind in

order to properly care for the sick under his charge. Other dicta of this master remind one of the rational practice taught by Hippocrates, Sydenham and Bigelow.

A professor at Montpellier recently wrote that, during the Middle Ages, the practice of medicine was so universally in the hands of the Jews, one might almost think it necessary to be of that race in order to have experience in the healing art. Among them the study of medicine was part of a complete education, often without intention to practice. Their wideness of thought and heartsome sympathy were more conspicuous because of the narrowness of view and fanatic selfishness characterizing the majority of physicians (monks and nuns) in European lands belonging to other cults. No creed or race was debarred from their service. It appears that the very general study of medicine by the Jews of the Middle Ages was due not merely to a desire for knowledge of the truth in nature, but also to a vivid appreciation of its value in religion or ethics, as shown in various codices and pedagogic writings: soundness of body was considered necessary to the manifestation of a virtuous soul. Maintenance of health was regarded a sacred duty by those firm in the faith. They recognized that the perfecting and ennobling of human faculties could be brought about only by the continual application of hygienic principles to the conduct of individual life. The *unpardonable* sins are those which the laws of nature fail not to punish. At the same time, the practice of physic was one of the few modes of life open to them, and the course that gave access to sources of power (kings and princes) for good or ill to their people.

While personal relations with the Jews were often maintained by high functionaries of the Romish Church, canonical censures were repeatedly issued against them; and Christians were threatened with excommunication for calling them to attend the sick, "because," says the edict, "it is better to die than owe one's life to a Jew." Although this sufficed to cause much unnecessary suffering (miscalled martyrdom) and possible death, such logic failed to convince many of those who had need of a physician: the most devout sons and officials of the Church, and zealous preachers frequently complained that the attending medical men in monasteries and convents were generally Hebrews. Sometimes, however, the law was put into effect; for example, in Sicily, during 1293, where the penalty was, for the patient, three months' imprisonment on bread and water; whereas the doctor was given twelve months, his fee going to the poor.

The generalizing of education in modern times has deprived the Jewish scholars and physician of the eminent position held during the Middle Ages. No monuments of brass or marble preserve these heroes' names; no poet sings their fame. The treasures they wrought out lie 'neath the dust of centuries on the forgotten shelves of many an ancient library.

— "Ah, Clara," said a young surgeon (after hospital hours), as he sank upon his knees, "would that I could gain possession of your heart!" — "You can, Mr. Sawbones," replied Clara, promptly but blushing-ly; "and without giving me ether either." — *New York Sun.*

POSTURAL TREATMENT OF CONSTIPATION.¹

BY EDWARD T. WILLIAMS, M.D.

A RECENT paper on constipation by an eminent surgeon of this city, and its discussion before the Boston Society for Medical Improvement,² emboldened me to speak of a source of trouble unnoticed, so far as I know, by formal writers. I allude to a faulty and unnatural posture at stool.

The act of defecation strongly resembles the expulsive stage of labor. The main propelling force in both cases is the contraction of the diaphragm and abdominal muscles, mere uterine action and intestinal peristalsis playing a subordinate rôle in both acts when physiologically performed.

The importance of posture and other aids in bringing out this natural action of the abdominal muscles in labor is tolerably well recognized by modern writers on midwifery. One often sees women in confinement quit the bed and take up a crouching attitude on the floor, instinctively feeling that they can bear down better in this position. The pulling and pushing movements with hands and feet so universally witnessed are directed to the same end.

Sixteen years ago I had myself the fortune to hit upon a simple and effective contrivance for this purpose which has proved of vast use in my hands. A description of it may be found in the *Boston Medical and Surgical Journal* of June 11, 1874. It consists simply of a twisted sheet with the ends tied together in the form of a ring or loop, in the lower part of which the feet are placed and pushed downwards, while the upper end is pulled upwards with the hands or wrists. It calls the whole set of waist muscles into powerful action, and secures, where the way is clear, a prompt and natural delivery.³

But to return to constipation. I feel sure I cannot be mistaken after twenty years' practice, and, I may say, almost daily study of the subject, in thinking that a faulty posture at stool and consequent inertia of the abdominal muscles have been among the commonest causes of the disease in the patients under my care. A gentleman, having finished his breakfast and lighted his cigar, retires, with the morning paper in his hand, to a cosy and well-heated apartment, takes a comfortable seat, and between reading and smoking passively awaits the tardy operation of nature. He either takes no active part at all, or at most inflates his lungs a little and holds his breath, thereby depressing the diaphragm, but having no marked action on the other expulsive muscles—the straight and oblique abdominal, the *psoæ* and *quadrati lumborum*. As a result the bowels are imperfectly emptied, a residual mass is left behind in the colon, which, accumulating day by day, must finally be evacuated by artificial means.

Put the same man into the woods, say the Adirondacks. At the call of nature he seeks the nearest thicket, and there assumes a strictly physiological attitude. He neither sits nor stands, he squats. Every muscle of the back and abdomen is brought into play,

the bowel is rapidly and completely emptied; and, vacation ended, he returns to his home a new man.

Watch any of the lower animals, the dog, the cat, the pig, the ape at the menagerie, even the horse and cow when hard bound—always an approach to the same attitude. I suppose every one has noticed the same thing in young children.

I believe I need offer no apology for these observations.

We ought, then, to expect, what I have found to be the case, that the assumption of a correct posture at stool would prove a sufficient cure for what may be called passive constipation. The sitting posture should be interdicted, and a stooping one substituted. If the construction of the water-closet does not admit this it should be altered. The margins of the basin should be leaved, and wide enough to afford room for the feet on each side. Above this on hinges should be two covers, the lower one perforated, the upper not. One of the best arrangements, for men at any rate, would be to abolish the seat altogether, and have merely a stone or marble slab, with a hole in it, as is often seen in Europe, at or near the level of the floor.

For ladies the matter is less easily managed. I have often recommended the use of the chamber utensil instead of the ordinary seat. One lady of most distinguished family and position assured me that this was one of the most valuable suggestions she had ever received. I have found it equally beneficial in other cases.

I have now been using and recommending this posture treatment for twenty years. I hardly know any person of sense who ever properly tried it who did not find it of advantage. With proper diet and exercise it will surely cure the majority of cases with comparatively little aid from medicine. Still drugs and clysters are needful at times, and in certain cases must be regularly used: though I believe the greater part of those who require continuous dosing are persons too ignorant or too indifferent to try and cure themselves by natural and simple means. The abused motto, *natura ducet*, too often made a mere cloak for professional ignorance, here finds a wise and wholesome application.⁴

—Mr. W. J. Clapp gives in the *Lancet* for July 21st, details of a case of tetanus successfully treated by him with the tincture of strophanthus, and administered in the form of tabloids containing two minims each, given every three hours. In a fortnight the man was able to walk and eat as usual, and subsequently returned to his work, quite well.

¹ Since writing the foregoing paper, in fact since the printed programmes of this meeting were issued, my attention has been called to two articles on the same subject, one by Dr. A. W. Abbott, of Minneapolis, in the *Northwestern Lancet* of March 1, 1888, the other an editorial review of Dr. Abbott's paper in the *New York Medical Record* of May 12, 1888.

I have decided, notwithstanding, to read my own paper as I wrote it, without entering into any question of priority with Dr. Abbott. While he certainly has the honor of being the first in print, I can positively prove that my practice antedates his paper by an even score of years, and has been liberally recommended to patients and physicians ever since. It was my experience of the benefits of this practice which first suggested to my mind the conception of the "birth-sheet" previously described, which I commenced using in 1872, and published in June, 1874. On May 23, 1878, I explained in full detail my notions on the posture treatment of constipation before the Roxbury Medical Improvement Society, as can be clearly substantiated by the official records, and the recollection of members present at the meeting. The present paper was inspired by the one of Dr. R. M. Hodges previously alluded to, at a time when I was as yet totally ignorant of the already published article of Dr. Abbott. Yet there can be little doubt that the posture here advocated on scientific ground is habitually used by great numbers for convenience's sake, and has been used by the majority of the race from the earliest period of its existence on earth.

² Written April 29, 1888, and read before the Massachusetts Medical Society, June 13, 1888.

³ See *Boston Med. and Surg. Journal*, April 12, 1888, pp. 376-378.

⁴ The description of what I call my "birth-sheet" was printed under the misleading title of "A Substitute for the Binder," a title prefixed by editorial oversight to a brief note without title. Doubtless I was to blame myself for not giving the note a title descriptive of its contents, but the error was peculiarly unfortunate as tending to divert rather than attract attention to a contrivance which in my own experience has saved a deal of operative interference and a goodly number of human lives.

REPORT ON PHYSICAL CULTURE IN SCHOOLS.¹BY Z. B. ADAMS, M.D., E. H. BRADFORD, M.D., AND
C. F. WINTINGTON, M.D.

THE Special Committee of the Massachusetts Medical Society appointed at the annual meeting, June 8, 1887, "to investigate the subject of Physical Culture in Schools, and to report on the same at a future meeting," beg leave to present the following report, in which they would call the attention of the Society:

(1) To the need of some method of Physical Culture, particularly for the children of our cities and larger towns:

(2) To what has already been accomplished in some quarters in the direction of supplying this need; and

(3) To a brief consideration of what seems to be practicable for schools (and particularly the public schools) to undertake for the physical training of their pupils.

I. THE NEED OF PHYSICAL CULTURE IN PUBLIC EDUCATION.

Were intellectual achievement the sole legitimate aim of education, a position which we protest against as partial and false, it would still be true that in the interest of purely mental development, physical well-being is indispensable. The brain is composed of material tissues, and its functions cannot be long or successfully maintained, unless those tissues, together with the body of which they form a part, are in a state of physiological health. Despite sporadic cases of an active mind in a feeble body, it is true that sustained and successful brain-work can be done only by a well-conditioned organism. The world is awaking to the fact that as mortification of the flesh does not conduce to moral health, neither will an overworked and ill-nourished body sustain a valid mind.

But it is not alone mental strength which is needed for successfully wrestling with the world. For the more highly educated, and still more emphatically for the children who receive their only preparation for life in the public schools, it is true that much besides what is learned from books is necessary for success in life. It is here that the current systems of education most seriously fail. They have occupied themselves solely with the mind, and have left other fields, equally or more important in their possible fruition, to lie fallow. No child will achieve his best usefulness whose moral and physical powers are left uncultivated. "Teach my boy three things," said an old-time father, "to ride a horse, to shoot a gun, and to tell the truth." Such acquirements as these made the fathers of the State, and while we can to advantage add to them in our modern education, we cannot dispense with them. Manual training has only of late begun to find a place in our school-rooms. It should be welcomed by physicians as well as by sociologists. Apart from the direct utility of sewing and cooking for girls or of the use of tools for boys, there is a physical advantage in the training of groups of muscles to coördinated action; and disciplined muscular action is itself no slight stimulus to the brain.

The time has come, in our judgment, for a further extension of this principle. Not only the brain, but the eye and hand, and not only these but the whole

muscular system should receive a training, which will make the individual efficient in whatever field he elects to work.

The splendid results attained by those nations which have paid especial attention to the cultivation of the body are too well-known to require extended reference. It needs no medical eye to see in the pale skins, narrow chests, thin and nervous frames of the great mass of public-school children in our cities a sad contrast to that physical perfection which gave to ancient Greece her leadership in arms and in art. A competent authority on the subject, and an American as well, says that one can enter the public schools of New York city and easily separate the German children from the American, simply by the difference in physique, the former class having had the advantage of the training of the Turners' societies, and the latter having grown up without any physical culture whatever.

We are in danger of forgetting the great changes in the condition of American life which have taken place in the last forty or fifty years, changes which require a general re-shaping of our habits. In former years a much greater proportion of the population lived in the country; boys and girls had an abundance of outdoor life. The open air was their gymnasium and the apparatus was whatever implement of labor they were required to wield. The apprentice system had not died out and the native-born population did not think it beneath them to learn trades, which were in themselves an education to body and to mind. Now it is estimated that one-fourth of all our children are living in the large cities of the country. While many of the cities are growing with marvellous rapidity, the country districts, at least throughout New England, are not holding their own. It is said that while a half century ago 85% of our male population were engaged in farming or other out-door work, not more than 40% are so engaged at the present time. Town-bred boys have no wood to chop, and except as they have access to public parks, no fields to play in. Out-of-door play for girls is quite obsolete. Brick sidewalks and brick school-yards are discouragers of running and romping, and the child of the period, especially if a girl, settles down early to the staid gait of its elders.

"The first requisite to success in life," says Herbert Spencer, "is to be a good animal. The best brain is found of little service if there be not enough vital energy to work it." Preventive medicine, public hygiene and orthopaedic surgery, while they have rendered inestimable benefits to the State, have yet kept alive many of those weaklings, who under the operation of the law of the survival of the fittest, would have perished. These defective individuals, added to the general sum of the adolescent population, tend to lower the average of physical excellence, and while merciful science has saved many a life otherwise doomed, she must see to it that her kindness to the individual do not carry with it a peril to the vigor of the species. Physical culture is necessary as never before, to meet the artificial conditions of urban life, and to prevent the feeble organizations from perpetuating their own type in their descendants.

II. WHAT HAS ALREADY BEEN ACCOMPLISHED FOR THE PHYSICAL CULTURE OF THE YOUNG.

In studying how to inaugurate any needed reform it

¹ Report presented to the Massachusetts Medical Society at its annual meeting, July 15, 1888, accepted by the Society, and ordered to be presented, with its endorsement, to the Massachusetts State Board of Education.

is of value to know what results have been arrived at by others working at substantially the same problem. The success of physical training as an integral part of public education in Germany is too well known to require extended mention. We would remark, however, that it was advocated in June, 1842,² by Frederick William IV, and with considerable promptness carried into partial effect. In 1860 it was introduced into the elementary schools for boys. In 1862 it was made compulsory, and more recently has been introduced generally into girls' schools. It is now required of each scholar for two hours per week. The exercises are graded in difficulty according to the age of the pupils from six years upward. Berlin in 1885 contained ninety-eight turnhallen, used for educational purposes. Frankfurt expends yearly \$27,000 for the physical culture of her 18,000 public school children, and Vienna for her schools about \$35,000, or one-twenty-ninth as much as her total educational outlay.

The German Turners' Association, which have been so closely identified with the cause of physical culture in the mother country, are continuing their good work in the land of their adoption. Last year the North American Turnerbund had under gymnastic training nearly 19,000 boys and girls, the children of its members.

In the observation which your committee has been able to make of these gymnastic classes, they have been impressed with the usefulness of the work done. The drill is for the most part conducted in the turnhallen, of which there are in the country 144, costing some \$3,000,000, belonging to the local societies, and the children have the opportunity of using such of the "heavier" apparatus as is adapted to their years; as, for instance, rings, ladders, and, to a moderate extent, high bars. But the latter appliances your committee does not consider essential to the training of young children, when the free movements and light gymnastics are so easily attainable. The German system has brought into our land an impulse in the right direction, physical results which form an impressive object-lesson in comparison with our present generally do-nothing policy, and the Turners' Normal School for training gymnastic teachers may possibly be made use of in securing instruction to our public-school teachers for the work which should be made a part of their pedagogic duties.

But the Germans are by no means the only ones who are alive to the needs of bodily training. The physical renaissance has begun in good earnest in most of our American colleges, while athletic clubs and gymnasia include many of the young men in the well-to-do classes of our city populations. But the movement which has well begun at the top of our educational system, needs to be extended downwards through all its ramifications. The great mass of children never reach the upper grades even of the public schools. If such children are to receive any physical culture whatever, it must be in the grammar, the intermediate, and even the primary schools.

In the "preliminary" schools, those having pupils from sixteen to seventeen years of age and under, is the present need of pioneer work. And here, we are happy to note, already pioneers are not wanting. As

might be expected, the private schools and endowed academies have been among the first to secure the requisite funds for such instruction. The report of the New Hampshire State Board of Health for 1887 contains an article by E. H. Fallows, reviewing the present status of physical education in public and preparatory schools. It is, unfortunately, incomplete in its data, but, so far as it goes, its information is valuable and interesting. In 60 out of 118 schools of this character which have answered the queries of this investigator, a gymnastic drill of some sort or other is required, but in half of them it is pursued at such long and irregular intervals as to be of little use. Among the 118 schools there are 27 gymnasia, and 28 rooms more or less extensively fitted up with apparatus. The total outlay for gymnasia and rooms was about \$115,000, and \$65,000 of this amount is represented in the gymnasia of three academies, namely, Phillips (Andover), Williston and Phillips (Exeter). These 118 schools are, of course, but a small part of all the schools of their kind, though they include many of the best known public and private institutions in the country, and doubtless represent an amount of attention to physical culture much greater than would be found in all the schools taken together.

We know of some schools not included in this list which are doing excellent work, and, on the other hand, some of the gymnasia reported in this list we have reason to know are rendered worthless or even worse to the pupils through lack of any skilled supervision in their use. The amount laid out for a gymnastic "plant" is no criterion of the usefulness of the work accomplished, a simple room with a very slight apparatus, or even none at all, having, under intelligent direction, greater capacity for good than the most elaborate appliances without it.

In only five of the schools referred to are physical examinations and anthropometric measurements of the scholars made the basis of the training. These are the Adelphi Academy, of Brooklyn, N. Y., the Preparatory School, at Princeton, N. J., the Wesleyan Academy, at Wilbraham, Mass., the Hill School, at Pottsdam, Penn., and the Phillips Exeter Academy, at Exeter, N. H. Each student is examined physically and measured once a year, the measurements being in accordance with the system used by Dr. Sargent in the Hemenway Gymnasium at Harvard, and Dr. Hitchcock, at the Pratt Gymnasium, Amherst, and adopted by the Association for the Advancement of Physical Education. A handbook of developing exercises is made out in accordance with the needs of the individual and given to each student. It contains, also, special instruction regarding air, hygiene, food, bathing, clothing and sleep.

It may be said that the responsibility of a boarding-school for the physical welfare of the pupils is greater than that of a day-school in which the pupils dwell under the parents' roof. But obviously the parent's responsibility is limited by his ability, and if the circumstances of his life in a narrow city quarter render it impossible for him to give his child any chance for a sound physical development, the municipality must look to remedying the defect or it will not be remedied. Certainly as a measure of public policy the State can as ill afford to neglect the bodies of her future citizens as their minds. It is, of course, not to be expected that the public schools can so far individualize its work in this direction as the private schools. In

² For this and other facts regarding the school gymnastics of Germany, see *Physical Training in American Colleges and Universities*, by E. M. Bartlett, Ph.D., M.P.A., of Johns Hopkins University. Circulars of Information of the Bureau of Education. No. 5, 1886.

the former the pupils must be exercised in classes; and anthropometric measurements, if made, will be more useful in showing the adaptation of the system to the needs of the average pupil than in affording a treatment for the special abnormalities or deficiencies of the individual.

In 28 of the 118 schools above referred to, a military drill is used. In 15 this is accompanied by light gymnastic work, but in the other 13, as the report says, with perhaps unnecessary severity, "nothing is done for the physical welfare of the pupils." A much larger number of schools in reality are depending upon military drill as the only means for physical culture of their pupils. It is probably better than nothing for this purpose, and if practiced without guns, or with a wooden gun of weight adapted to the strength of the pupils, would be much more useful than it generally is at present.³ The system, as it exists, however, in many of our large towns, we consider productive of little good for the outlay involved, which is considerable, both to the public treasury for the guns, and to the private pocket for the uniforms, while it is applicable to only a small portion of the children needing physical training.

A word in passing regarding the results attained by systematic training in calisthenics and light gymnastics in a private academy, the Adelphi, of Brooklyn. The director of physical culture, Dr. W. G. Anderson, in his report for 1886 gives the measurements, height, weight, etc., of his pupils, and, for comparison, those of average Boston boys and girls in the public schools, taken from Dr. Bowditch's report, and also the measurements of selected boys from the Boston Latin School and the Massachusetts Institute of Technology. The tables show a considerable difference in favor of the former, which, while it may be in part due to more favorable social circumstances, is yet, in the opinion of the director, chiefly due to the daily drill in light gymnastics which is carried on with much thoroughness.

But while endowed schools are often in position to afford gymnastic outfit which is not attainable for public schools, your committee are glad to observe that the latter class have already, in several instances, demonstrated their capacity for doing this work, which must be done for the great mass of our city children, if at all, by the public schools.

Kansas City has taken a most advanced position in the line of public physical training. The work has been, since its inception in October, 1885, under the charge of Mr. Carl Betz, who has published a series of manuals of free gymnastics, of gymnastic tactics, and of light gymnastics (with poles, dumb-bells, rings, wands and clubs), with which he has kindly furnished your committee. The method is based on the German system (Turnkunst), with special adaptation for use in the common-school system of America. This system was, in September, 1886, adopted by Chicago for her public schools. The work there is under the direction of Mr. Henry Suder. Eight teachers are employed, who visit each grammar grade twice a week. On the other days the regular teachers give instruction in the exercises. A pamphlet containing lessons for each

week of the school year has been printed for the use of the teachers. The same system has also been introduced into the public schools of Yankton, Dakota, Slater, Mo., and Davenport, Iowa, while we learn that a beginning was also made last year in Louisville, Cleveland, Omaha and Denver.

Mr. Betz's report on this method of his work in Kansas City after it had been fifteen months in successful operation, is as follows:

"On every Saturday the director of physical training drills the principals of the different ward schools. These in turn drill their assistants, the regular teachers, on every Monday. The assistants take up the new drill for the week on every Tuesday. The drill is obligatory, and is taken as any of the other studies. At 10 o'clock A.M. all principals strike a gong, and at this signal all teachers take up the drill at once (daily). Thus at the same time all school-children throughout the city have the same exercise. Each teacher is furnished with a manual of instruction, which clearly marks the work to be accomplished. The scholars, of course, do not leave the school-room. The assistant teachers are required to make a daily report of the work, and at the end of each school week hand them to their respective principals. The principals make a monthly report to the director, who reports on the entire work to the board. As yet we have only free gymnastics, but as soon as possible dumb-bells, wands, poles, rings and clubs will follow. Then gymnastic games and popular gymnastics will be taken up, and lastly heavy gymnastics on apparatus."

While the western cities as above mentioned have, perhaps through the prominence of the German element in their population, been the first to provide systematic physical training for the public schools, your committee recognize with satisfaction the work which is being quietly done in isolated instances by public school teachers nearer home. The school committee of Boston have for many years past in their schedule of studies for grammar and primary schools, appropriated ten minutes a day for "physical exercise," but without any definite instruction as to how that exercise shall be taken. Deprived of any active interest or encouragement from the authorities, the work cannot be said to have amounted to much in the schools at large, but in a few instances, where teachers themselves have been interested in the subject, the permissive attitude of the authorities has been made use of to good purpose.

Scholars and teachers have, in some instances, by their own contributions, purchased light apparatus, such as dumb-bells, wands and rings (for the city has never made any outlay for such purposes), and the apparatus has been virtually presented to the city by these enthusiastic workers for the benefit of future users.

With no intention of reflecting upon the work done elsewhere, we wish to speak with special approval of the exercises as conducted at the Prince School in Boston, the Dillaway School in Roxbury, and the Chapman School in East Boston. The plan pursued differs in each of these schools, being in each case the product of the intelligence of some one enthusiastic teacher, working upon the problem as it presented itself to his or her mind. In one of these schools the drill now in vogue was planned by Miss Allen, at that time a teacher in the school, and now in charge of the successful gymnasium for women in Boston. The en-

³ In the Berkeley School, in New York, where the military drill exists at its best, the "Martini tactics" are employed, thereby avoiding the unphysiological and largely one-sided manoeuvres of the common, or Upton's tactics, and the guns for boys from fifteen to eighteen years weigh not exceeding four and one-half pounds; for ages under fifteen from two to three pounds.

thusiasm aroused by an earnest teacher in a school is most remarkable, and outlasts the personal presence of its inspirer. In all the schools referred to, the work is heartily sustained by the teachers as a body, who, so far as is known, are unanimous in their praise of the good results obtained. Inquiry shows that where thus practised, it is popular with scholars and parents alike. Of course, in schools where there happens to be no teacher who takes much interest in the subject, there being no general and uniform plan prescribed by the central authority, the pupils receive no physical culture worth speaking of. In saying that the city of Boston has expended no money for apparatus for Grammar schools, we do not, of course, forget that it has laid out some \$1,500, chiefly upon heavy apparatus for a gymnasium in the English High School building, an expenditure rendered nugatory by the lack of an instructor in the safe and proper use of the apparatus, nor that it has spent for guns for the use of the High School boys a sum much larger than would be needed to supply enough light apparatus for all the school-children of both sexes.

III. WHAT IS FEASIBLE IN A SYSTEM OF PUBLIC INSTRUCTION.

It is to be borne in mind first and always that what is aimed at by physical education is not the production of athletes, but such a development and training of the body as shall make it a healthy organism, able to accomplish all that may be reasonably required of it.

Most of our modern school-houses in the large cities and towns, have a general "hall" in which the seats are movable, and which can be cleared so as to give room for the requisite manoeuvres. Some of the buildings have specially designed drill-halls. These rooms are large enough for classes of twenty to fifty to march, and to go through free exercises and light gymnastics without collision. For a very small sum, a few sorts of apparatus could be provided, in quantity sufficient for the use of one class at a time, and capable, of course, of being consecutively used by many different pupils daily. The music, which is so important a factor in regulating the rhythm of concerted movements, can be readily supplied by the piano, which every city school possesses.

As to the particular system of exercises to be followed, we need not go into detail. Whether the German or the Swedish method is to be preferred, is perhaps a matter for further investigation. But the system must be one that is simple, and not dependent on expensive appliances. It must be interesting. It must call for alertness of attention and promptness to obey command. It must involve movements in unison with other persons, both stationary and in marching. It must combine these good points of the military drill with bilateral and free, instead of unilateral and cramped movements. It must be equally available for both sexes, and with modifications for all ages.

The matter of instruction in physical culture is one of great importance, and this will require the employment of persons who are qualified by study and experience to adapt the work to the needs of the pupils. But there is no reason why the regular teachers in the school cannot, after being instructed in the principles and practice of the science, carry on the work of their own classes under the oversight of a general supervisor of physical culture, in much the same way

that some of the teaching of music in our schools is now carried on. This will make the expense of the movement, after the first, comparatively light. We understand even, that the cost of establishing the system in Kansas City was only \$1,300 a year and in Cleveland \$1,600.

In conclusion, we beg leave to mention that action looking towards supplying the needs above referred to, has already been taken by three of the district societies represented in this parent organization; namely, the Suffolk, the Middlesex, the South, and the Norfolk District Societies, by the appointment in each case of a committee on the subject. That the American Association for the Advancement of Physical Education, at its annual meeting, held at Brooklyn in November last, unanimously adopted resolutions as follows:

Whereas, A rational, harmonious system of education affords the best and surest guaranty for the welfare and stability of a republic;

Whereas, The present system takes into consideration the training of the mind only, almost totally neglecting that of the body;

Whereas, It is now universally conceded that physical training is a most essential factor in the education of the child with reference to his intellectual, moral and physical nature; and

Whereas, Physical training has been introduced into a great many schools of our country, and wherever introduced has given the utmost satisfaction; be it

Resolved, That the Association for the Advancement of Physical Culture, recommend to all the Boards of Education in this country, to embody Physical Culture in the course of study of the schools under control.

We recommend that this Society, approving the spirit of the above resolutions, present them with the foregoing report, to the Massachusetts State Board of Education, and respectfully, but earnestly urge upon that body such action as will bring this important subject to the favorable attention of local school-boards in the towns and cities of the Commonwealth.

Reports of Societies.

CONGRESS FOR THE STUDY OF TUBERCULOSIS.

HELD AT PARIS, FRANCE, JULY 25-31, 1888.

The first session of this important gathering whose recent organization, with Chauveau for President, Verneuil and Villemin for Vice Presidents, is one of the indices of the progress of the age in experimental pathology, was held in the amphitheatre of the *Ecole de Médecine*, Paris, July 25th to the 31st ult. There was a fitness in the election to the highest office in this Congress, of two men who have done so much to advance our knowledge of the true nature of tuberculosis; Villemin, who may be said to have been the pioneer in researches of this kind, having been the first to prove the infectiousness of tubercle; and Chauveau who was the first to confirm Villemin's discovery, to demonstrate the transmission of tubercle by the digestive passages, and show the difference which exist between true and false tubercle.

The work of the first day consisted in the opening address by Chauveau, in which he gave a history of the recent researches which have led to the present doctrine of the infectiousness and microbic nature of tubercle. The identity of human and bovine tuberculosis, and that of other animal species is now every-

where admitted, and the notion, now proved true by innumerable experiments of the transmissibility of this disease from one species to another, has been fruitful in practical consequences. It is on this account that veterinarians and physicians are forming associations to find out what measures may be adopted to preserve society from this dire scourge.

M. CORNIL, whose labors in pathological histology are so well-known, read a paper

ON THE TRANSMISSION OF TUBERCULOUS INFECTION BY THE MUCOUS MEMBRANES.

In order that the tubercle bacilli may penetrate the tissues by the mucous surfaces, it is not necessary that the latter should be the seat of lesions, excoriations, or fissures. Chauveau, Villemin and Bollinger had determined tuberculous intestinal lesions in animals which had ingested milk containing bacilli, and even the cultures of these bacilli. Tappenier, Schottelin and Theon have also caused the production of tubercles in the lungs, by making animals inhale liquids holding tuberculous matters in suspension. Cornil has witnessed the development of tubercles in the uteri of hares, in which he had introduced a few drops of the culture of tubercle bacilli. These were visible after twelve days, and after thirty-two days the lesions had spread to the neighboring tissues. This inoculation was produced without the least abrasion of the epithelial covering, which often remained intact, despite the continuous development of tubercle granula.

Cornil has seen tuberculosis in the human female localized in the cervix uteri, with the lesions of chronic catarrh, and tubercle granules with giant cells below the intact epithelium.

M. NOCARD, of Alfort, read a paper on

THE DANGERS ARISING FROM THE USE OF MEAT AND MILK FROM TUBERCULOUS ANIMALS.

There is no doubt as to the possible contamination by bacilli of milk. As a certain percentage of milch cows are tuberculous, it is expected always to boil before using it, the milk served in cities. The sale of milk from cows known to be tuberculous, should be absolutely interdicted.

The same may be said of meat, though the juice of flesh of tuberculous animals, is rarely capable of determining tuberculosis. Out of forty guinea pigs which Nocard had inoculated with one cubic centimetre of the juice of meat from tuberculous cows, only one became tuberculous (succumbing fifty-seven days after the injection). It seems, then, that in some rare cases tuberculosis is a disease *totius substantiæ*, but this generalization of the malady is but transient, the blood and muscular juice very rapidly ceasing to be virulent. Experiment on cats (an animal known to be susceptible to tuberculosis) which were made to ingest tuberculous meat, and not one of which became tuberculous, have shown the comparatively little danger there is from this source. Cooking, moreover, of course renders such meat much less virulent.

The greater part of the following day (July 26th), was devoted to the discussion of the paper of M. Nocard. During this discussion many important facts were brought out. Baillet, of Bordeaux, thought that the meat of tuberculous animals played but a trifling rôle in the transmission of tuberculosis to man; thus, at the slaughter-houses of Bordeaux, out of 22,000 head of cattle only 40 were found which were tuber-

culous; by the side of this small number of sick animals, the official statistics give 1,000 phthisical persons to a population of 250,000. It would seem from this that the influence of diseased meat on the propagation of tuberculosis in the human race plays a decidedly secondary rôle. M. Spellmann, of Nancy, said that tuberculosis was very frequent in the stables of Hautes-Vosges, the mortality of cows from phthisis being thirty to forty per cent. The meat of these animals, bought at a low price and offered for sale in the neighboring towns, constitutes a permanent danger of infection.

Guiraud, of Montanban, stated that at Montanban it had been found that there was one phthisical animal to every 245 head of cattle; while Villain, of Paris, said that in the metropolis of France the proportion of phthisical animals is 6 per 1,000, at least, for the abattoirs of Villette and of Grenelle. Thomassen, of Utrecht, (Holland), gave some statistics as to the prevalence of tuberculosis among cattle in Holland; this is one-half per cent. With respect to swine, the percentage is somewhat higher. Liegen, of Luxemburg, had succeeded in tuberculizing four hogs by giving them meat to eat from a tuberculous cow. Robinson, of Glenock, Scotland, spoke in favor of a total interdiction of tuberculous meat. Guinard, of Dijon, alluded in severe terms of condemnation to a custom prevalent in some localities among anæmic patients, of resorting to the abattoirs to follow out a line of treatment which consists in drinking the blood of an animal just killed.

The Congress voted a resolution condemnatory of the use of all meats from tuberculous animals and recommending the seizure and destruction of such animals, but a principle of indemnity to the owners was also recommended.

At the evening session, July 27th, M. DE BRUN, of Beirut, gave an address on

PULMONARY TUBERCULOSIS IN SYRIA.

Formerly phthisis was rare in Beirut when malaria was rife. Latterly, the marshes have been drained and rendered salubrious, the land cleared and cultivated; the result has been a comparative disappearance of the malaria, but at the same time phthisis has appeared and is now making ravages among the population. The often alleged antagonism between tuberculosis and malaria thus seems to find exemplification. Observations made in other parts of the East and in Egypt, agree perfectly with the facts noted by Dr. De Brun in Beirut. The climate of Syria, on the whole, seems particularly favorable to the development of phthisis, which prevails in an especially rapid form wherever malaria has not already had the ascendancy.

MM. CHAUMESSE and WIDAL, of Paris, made a communication on

THE PERSISTENCE OF THE GERMS OF TUBERCULOSIS IN RIVER WATER.

The results of an elaborate series of experiments were these: that the germs of tuberculosis remain alive for fifty days in Seine water sterilized and kept at a temperature between 8° and 12° C., and seventy days in Seine water kept at 15° to 18° C. This is one aspect of the question; another series of experiments show that they do not preserve their virulence or, if at all, to a very feeble degree, the result of inoculation of this water in animals being nil.

On the other hand, Galtur and Cedeac have been more successful with their inoculations of tuberculous matter kept in standing and in running water. They placed fragments of tubercle in water that was incessantly renewed, and other fragments in standing water, then cultures were attempted with these liquids. The running water gave positive results from inoculations a month and a half after the beginning of the experiment, while the stagnant water was inoculated with success one hundred and twenty days afterwards.

M. ARLOING made a report

ON THE LOCAL AND GENERAL MEANS CAPABLE OF ARRESTING THE EXTENSION OF EXPERIMENTAL TUBERCULOSIS.

He first endeavored to arrest the march of tuberculosis in the same way as some have proposed to stay the progress of syphilis, by the extirpation of the local lesion and the neighboring glands. This is an experiment which is quite easy of execution in guinea pigs, where the inoculation is made in the mammary gland. All the animals that were the subjects of this early extirpation of lesion and glands were found, on killing them after a certain number of weeks, to be tubercularized to the same degree as an equal number of animals, which were inoculated at the same time, but without subsequent extirpation of the primary centres of infection. In a second series of experiments he practised the excision at the point of inoculation on the sixth day, when there was no swelling to indicate the success of the inoculation, but the tuberculosis none the less pursued its course and became general. He also tried the inoculation of what he supposed might be *attenuated virus*, that is, scrofulous matter; but "alongside of a positive scrofulous inoculation," he found that he could succeed perfectly with "an inoculation of true tuberculous virus, capable of producing the disorders of tuberculosis." Cornil and Babes had previously published results of this kind. Finally, thinking that the action of certain antagonistic microbes might neutralize the morbid effects of the tuberculous virus, he attempted in guinea pigs the inoculation of typhoid fever virus, but found "that the animals the most saturated with typhoid virus were still perfectly susceptible of contracting tuberculosis," and were in no degree exempt by being victims of another infection.

THE BACTERIAL ASSOCIATIONS OF THE TUBERCLE BACILLUS.

M. BABES, of Bucharest, read a paper with the above title. In certain diseases, and especially in localized affections, such as tuberculous arthritis or osteitis, there exists an intimate association between the specific microbes of tuberculous and other microbes. The tuberculous lesions open the way for other bacteria which remain distinct from Koch's bacillus or form with it special products. In these cases this composite microbe is found in more or less intimate relation to the tuberculous products. These foreign microbes are often instrumental in awaking to activity a lateral tuberculosis.

M. DURET, of Lille, spoke of

GLANDULAR TUBERCULOSIS.

Tuberculosis of the glands comprehends three clinical forms, each demanding different treatment: (1)

The fibro-caseous form; (2) the caseo-tuberculous form; (3) the ulcerative or fistulous form.

In the fibrous form, the only rational method is extirpation. The second form demands igni-puncture or crucial cauterizations. The third form is best treated by the thermo-cautery, which should be pressed down to the bottom of the suppurating cavities, with thorough destruction of the fistulous tracts.

ON PSEUDO-TUBERCULOSIS IN MEN AND ANIMALS.

This was the subject of a communication by MM. CORNIL and TOUPET. The pseudo-tubercle may be anatomically undistinguishable from the true tubercle, and may contain giant cells, but it is free from the bacilli of Koch, and does not produce tuberculosis in animals.

M. HUREAN, of Villeneuve, spoke of the

USE OF RAW MEAT,

but in condemnation of this kind of aliment.

M. REDARD, of Paris, spoke of

SURGICAL INTERVENTION IN TUBERCULOUS OSTEO-ARTHRITIS OF THE TIRIO-TARSAL JOINTS AND OF THE FEET IN CHILDREN.

These can often be cured by free opening of the joints, followed by curetting or scraping, and cauterization with the thermo-cautery. The tuberculous foci must be carefully disinfected before and after the operation; there must be thorough cauterization of all the tuberculous *foyers* and fistule, good drainage, prolonged antiseptic baths, and immobilization by plaster or silicate splints. The results of such operative surgical interference have been almost invariably good.

The third day was largely taken up by a discussion of the question of

THE HUMAN RACES, THE ANIMAL SPECIES, AND ORGANIC ENVIRONMENTS, CONSIDERED FROM THE POINT OF VIEW OF THEIR AFFINITY FOR TUBERCULOSIS.

The subjects of

HEREDITY OF TUBERCULOSIS IN ANIMALS

and of

TUBERCULOUS CIRRHOSIS

were taken up in their order.

At the evening session there was an interesting discussion on the third question:

THE WAYS OF INTRODUCTION AND PROPAGATION OF THE TUBERCULOUS VIRUS IN THE ECONOMY; PROPHYLACTIC MEASURES.

Tuberculosis is rarely transmitted by subcutaneous inoculation. A dissection wound has rarely, if ever, caused tuberculosis, and the same may be said of wounds received at the autopsies of phthisical persons. There may be a painful tumefaction at the point of the lesion, followed by abscess, but the local tuberculosis gets well without becoming generalized. There, however, are exceptions to this rule, and instances were cited where generalized infection and death have followed a wound received at the autopsy of a tuberculous person. Some interesting facts were given to show the resistance that certain fowls (as hens, pheasants) show to the reception of tuberculosis by ingestion of tuberculous matter, as the sputa of phthisical patients. Some of these fowls, which had

been fed for more than a year on phthisical sputa mixed with bread-crumbs, meal, etc., were shown to the Congress. They seemed to be perfectly healthy, and, on being killed, every one of them was found exempt from tuberculosis. The fowl is, however, not absolutely refractory to tuberculosis, as this disease has been known to prevail epidemically among hens.

MM. STRAUSS and WURTZ presented a valuable communication :

ON THE ACTION OF GASTRIC JUICE ON THE BACILLI OF TUBERCULOSIS.

It has been experimentally proved that the gastric juice has little power in destroying tubercle-bacilli, and the experiments of Chauveau, Gerlach, Klebs, Toussaint, etc., have shown that tuberculosis may be engendered by the ingestion of tuberculous products. If it were otherwise, there would, of course, be immunity from danger in eating tuberculous meat. Gastric juice *in vitro* only imperfectly destroys the spores of the bacilli, and its effect is very much lessened when diluted by food and drink.

Many other subjects were introduced and discussed during this long session, which lasted four days : such as "The Disinfection of Sputa" (regarded as very important by some of the speakers, patients being made to expectorate into strong sublimate solutions); "The Hygiene of Infants of Tuberculous Patients" (goat's milk is preferable to cow's, if for no other reason than that the goat is never tuberculous); "The Surgical Treatment of Certain Tuberculous Affections" (by curetting, the injection of iodoform in ether, etc.); "The Early Diagnosis of Tuberculosis in the Human Subject" (by inoculation of animals with suspected products, etc.).

The Congress adjourned, to meet two years hence under the presidency of M. Villenin.

Recent Literature.

Physical Development; or, the Laws Governing the Human System. By NATHAN ALLEN, M.D., LL.D., member of the American Medical Association, etc. Boston : Lee & Shepard. New York : Charles T. Dillingham. 1888.

This volume of some 350 pages represents a considerable number of the previously published brochures of Dr. Allen, some of which the author tells us in his preface are out of print while the demand for them still continues. He has, therefore, in part rewritten them and added some new papers, introduced only the better part of some long articles, and so has virtually made a new book. Among the subjects treated are Physical Education in Amherst College. Remarks on Early Education and the Education of Girls. The Law of Longevity. Duties of Medical Men. Sanitary Science. Prevention of Crime. Changes in New England Population. Hereditary Influences. Prevention of Insanity. The Law of Human Increase. Heredity, a Source of Pauperism. Physical Degeneracy. College Sports. One of the longest chapters is the closing one, on the Normal Standard for Motherhood, in which the abnormalities connected with pregnancy, parturition, lactation and offspring are treated at some length, with suggestions of value to the medical as well as to the non-professional public, to which this book as a whole is apparently chiefly addressed.

THE BOSTON Medical and Surgical Journal.

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GEGENBAUER ON CÆNOGENESIS.

A RECENT address by this distinguished anatomist calls our attention to a less pleasant aspect of the science of the day than that usually presented in the congratulatory speeches of anniversary orators. Together with the wonderful progress of the physical sciences, there has appeared, also, a vast amount of what we must call cheap, or rather, spurious science. Various causes combined to bring this about. Within the last thirty years the number of men devoted to science (not to count women and children) has increased almost beyond computation, and, inevitably, the quality has fallen far behind the quantity. The number of notable leaders in science, of men of absolutely first-class attainments and of universal reputation, has shown no great increase. To compare the followers of science to an army, we may say that within the last generation we have gained few more generals, but that trained soldiers, both officers and privates, have multiplied, and camp followers and "bummers" increased by geometrical progression. Among these last we include men of little general education, of no philosophical training, and, unfortunately, now and then, of no principle, who sometimes ignorantly, sometimes recklessly, teach as certain what is doubtful and as fact what is theory, or it may be guess-work. The fact that many of the consequences of the evolutionary hypothesis are or appear subversive of the established order alike in religion and society, make the doctrine more attractive to minds of a certain class. A natural result of this state of affairs is the prevalence of the most vague terms. What, for instance, is less definite than the term evolution itself, as used in popular science? To some it is synonymous with Darwinism, to others to progress by sudden transformations; to some with one system, to others with another; and although the systems agree in admitting change, they differ radically in the *modus operandi* they imply, and are quite impossible to reconcile one with another. We find, every day, in the writings of those of whom better should be expected,

the statement that such and such appearances are explained by evolution, without a hint as to the system the author believes in. As an instance of how diverse views are held on minor points, let us take the history of the mammalia. Many, perhaps most, believe that the higher orders come from the marsupials; Albrecht maintains that the promammalia were nearly allied to the cetacea, and Mivart suggests a double origin. Now, when we are told that some anomaly in the human body is easily explained by a glance at its ancestry, we certainly should be told also whether we are to look to the whales or to the kangaroos, to both or to neither.

Great honor is due to some of the leading anatomists of Germany for their courage in standing firm for true science in the place of guess-work. Virchow, Kölliker, Gegenbauer, and others are of this class. We have already alluded to the first two, and now we wish to call attention to the address of the last named at the recent meeting of the Anatomische Gesellschaft at Würzburg.

As is well known, one of the most striking generalizations that has been made on the basis of evolution is that in the development of the individual (ontogenesis) there are seen as transitory states what are permanent conditions in lower forms, and that thus, in ontogenesis, we have a recapitulation of the history of the development of the species (phylogenesis). The central idea of this hypothesis has met with much favor, and it needed no prophet to foretell that so attractive and so vague a theory would be greatly abused. Professor Gegenbauer points out that in *ontogenesis*, besides the transitory appearances of ancestral, or, presumably, ancestral forms (palingenesis), we must not overlook the appearance of others that can bear no such interpretation (caenogenesis). This, of course, is no new discovery, but, from the way the matter is sometimes treated, one would imagine that the stages of development of the embryo each and all represent in regular order the ancestry of the species. It is against this crude and incorrect teaching that Gegenbauer protests. We know, for instance, that in the embryo the cavity of the mouth is for a long time separated from that of the digestive canal, but there is no animal in which this is the permanent condition. There is no ancestral form with a neuro-enteric canal connecting the central nervous system and the intestinal tract.

Again, there are discrepancies in the order of appearance of structures. Thus, in the animal series, teeth are far older organs than lungs, but in the embryo we see the beginning of the lungs before that of the teeth. Many of these caenogenetic structures are distinctly teleological for the nourishment or protection of the individual embryo, as, for example, the amnion. Gegenbauer insists that it is most important for the proper study of the questions at issue to recognize distinctly which structures have any phylogenetic significance, and which have none. Nothing but error and confusion can result from regarding everything in-

discriminately as representing earlier forms. If any of our readers have thought our remarks too severe, let them ponder the words of Gegenbauer himself: "As these caenogenetic conditions do not exist in adult organisms, they are assumed to exist in them, and so one goes on to construct fictitious conditions — nay, more, entirely fictitious organisms."

Having thus evolved, let us say, for example, a sham ancestor of a camel from one's inner consciousness, one compares it with a true camel, and draws conclusions from the points of resemblance or difference between the two species, one of which is wholly imaginary. One more quotation from Gegenbauer: "The uncritical use of the results of ontogenesis leaves the solid ground of experience and falls into baseless speculation. Pictures of the imagination take the place of real objects, and thus research is drawn aside from the only path by which the knowledge of the truth, and, consequently, lasting results can be reached." These are both bold and needed words, for which the great anatomist deserves the thanks of lovers of science. At the end of the address, Professor His expressed his gratification at what he had heard. He declared that it was disturbing to every branch of science to have its results drawn to the service of an engrossing theory before these results are yet firmly established. "Let research," said he, in conclusion, "go undisturbed on its way, and then no one need be anxious as to the final application of its results."

SACCHARINE CONSIDERED AS AN ANTISEPTIC OF THE DIGESTIVE PASSAGES.

ACCORDING to Constantine Paul,¹ saccharine is an excellent antiseptic for the digestive passages, not being toxic, and having an agreeable odor and savor.

In doses which do not exceed three or four grains, it causes no disturbance of nutrition; urea, phosphoric acid, the urinary salts, still continue normal in quantity. In Dr. Paul's experience with saccharine in diabetes it has seldom troubled the digestion, and he has seen patients who have taken it for more than five months without any evil results whatever. In other cases, however, it has seemed to arrest the digestive fermentations, causing pain in the stomach, diarrhoea, etc.

Dr. Paul insists especially on the antiseptic properties of saccharine. One part to two hundred prevents the ammoniacal fermentation of urine and arrests the development of the *bacterium terne* $\delta\delta\alpha$; that of *staphylococcus pyogenes*, $\gamma\delta\alpha$, perceptibly antagonizes the growth of the streptococcus of puerperal fever.

Saccharine is, therefore, an excellent dentifrice or antiseptic of the mouth. A six per cent. alkaline solution is prepared: of this a teaspoonful is put in half a tea-cupful of water, which may be aromatized. You thus have an admirable antiseptic mouth-wash. A solution of this kind would be useful for washing out

¹ Acad. de Med., July 10, 1888.

the stomach in putrid dyspepsia and gastrictasis, or as a vesical injection in cystitis with ammoniacal urine.

According to a Paris letter in the *Therapeutic Gazette*, the use of saccharine has been prohibited in all substances intended for food, both in England and in France. It has been, so far, chiefly employed for adulterating purposes, champagne wines of German make, syrups, chocolates, etc., having been seized in which sugar was partly replaced by glucose seasoned with the new sweetening principle. The authorities have wisely decided that while saccharine may be very good for diabetics, or as an antiseptic medicament, its use in common articles of food is a rank adulteration that should not be tolerated. Its place is on the pharmacist's shelf, to be prescribed by the physician, and not on the breakfast-table.

MEDICAL NOTES.

—In view of a late unfortunate error whereby a physician called to see a woman ill in a police station, failed to recognize symptoms of narcotic poisoning and treated the case as one of alcoholic intoxication, with the result of the patient's death, a daily paper makes the suggestion that in every case of arrest for supposed drunkenness, an emetic be at once administered by the police authorities as soon as the patient is brought in. This addition of medical attendance to already multifarious duties which so severely tax the capacities of many members of the force, seems hardly to promise success, though so far as the drunkard is concerned, such a course might conduce to temperance through the addition of one more to the hard things in the way of the transgressor. But the voice of the homœopath and the mind-curer would at once be raised in protest against so positive a treatment. We are regretfully obliged to conclude that despite "emergency lectures" and other kindred instruction to which the police have been introduced, the only really safe ground is for them to be ordered in all cases where unconscious persons come under their care, and the evidence of intoxication is not absolutely clear, to call for medical aid, not necessarily from the nearest "doctor" but from some one who has had experience in the sometimes not easy diagnosis of the different causes of unconsciousness.

—The *Detroit Free Press* thus lets open the flood-gates upon a sweltering medical and pharmaceutical public:—

"'I want some consecrated lye,' he slowly announced as he entered the store. 'You mean concentrated lye,' suggested the druggist as he suppressed a smile. 'Well, maybe I do. It does nutmeg any difference. It's what I camphor, anyhow. What does it sulphur?'—'Eighteen cents a can.'—'Then you can give me a can.'—'I never cinnamon who thought himself so witty as you do,' said the druggist in a gingerly manner, feeling called upon to do a little punning himself. 'Well, that's not bad, either,' re-

plied the customer, with a syruptitious glance. 'I ammonia a novice at the business, though I've sold good many puns that other punsters reaped the credit of. However, I don't care a copperas far as I am concerned, though they ought to be handled without cloves till they wouldn't know what was the madder with them. Perhaps I shouldn't myrrh-myrrh. We had a pleasant time, and I shall caraway.' It was too much for the druggist. He had collapsed."

Miscellany.

MACTE LISTER TRIUMPHATOR!

A MOIST-MERRY, HUMID-HILARIOUS ANTISEPTIC VAPE-MECUM OF INTERNAL SURGERY, FOR THE AMBITIOUS MODERN PHYSICIAN.

BY DR. RISORISUS SANTORINI. Translated by "FAMULUS."

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INTRODUCTION.

There was a time, long years ago,
When all our colleagues flourished;
When Therapeutics, grand, sublime,
With tenderest care was nourished.
Before the bistoury and trocar
Had entered sick-room and boudoir,
In visceral disorders.

The doctor of those good old days,
In bonnet or in hat,
Gave man and woman, right and left,
Prescriptions "quantum sat."
His instruments, in scant array,
Scarce bulged the pocket where they lay,
Corrupt with filth and oxide.

He was withal a surgeon true,
See "quoniam—vir iugenio."
But timid operations few
Comprised him "ab initio."
He, forceps now and then applied,
With trembling midwife for a guide;
"Three perineal sutures."

At times a fracture might occur,
And, rarely, dislocations;
But then, the shepherds cared for these,
As in all Christian nations.
The barber bled, and made the blisters;
The midwife filled and gave the clysters,
Leeched, poulticed and anointed.

So, to the doctor there remained
The visceral diseases;
But even these cases will not come
As often as he pleases.
But, called, the treatment he prepares,
By quarts and pounds and ample jars,
The malady to conquer.

Those were the days of golden gains
For each apothecary;
His friendship for the doctor grew
Like that of Tom for Jerry.
The *R* and the prescriber too
Were lauded to the azure blue,
By the devout pill-vendor.

But, ah! for ideal therapy
Is now no occupation.
The world is changed; new modes prevail,
And always new vexation.
Internal Surgery claims the field
Where we the power were wont to wield,
And Lister is its champion.

The gathered wealth of roots and herbs
Is daily more neglected;
And only opium's alkaloid
As sedative respected.
Practitioners of code correct
Even find cocaine derelict
As local anæsthetic.

The Pharmacopœia is thrust aside,
A relic of past folly;
With "Seven Specifics" all is done;
It's true, but it's not jolly.
Iodoform is everywhere,
From end of toe to cranial hair,
With acid. sal., et cetera.

Dear Doctor, if you wish to perch
On topmost twig of science,
Practice but surgery, instead
Of drugs, upon your clients.
My counsel will earn many a fee;
Gird up your loins and follow me—
To operative glory.

CHAPTER I.

PLEURITIC EXUDATION.

With scarce a chance of variation
Death follows pleural exudation.—
But if it's *serous*, it may be
Removed by Nature perfectly;
Because absorption *may* take place,
And thus recovery end the case.

If the disease is still *acute*,
Blood-letting may exactly suit;
Followed by a depleting diet,
Emetics, purges, sweats and quiet.

But if at once we see the sign
Of quick increase, and course malign,
If *apnoea* the patient quails,
And visceral compensation fails,
This should suffice as ample warning
Not to delay till coming morning;
But tap the chest in time to save
The case from a prognosis grave.

But in a *moderate* exudation
No man would counsel exploration.
For it is clear that aspiration
Can never bring amelioration.
That's why our brethren in France
No longer trust unequal chance,
Who earlier counselled costal puncture,
But seldom now approach that juncture;
Because the death-rate's rapid rise
Disclosed its perils to their eyes.
Therefore, dear doctor, be not rash,
The trocar all your hopes may dash.

But if the exudation grows,
Or stationary aspect shows,
If the effusion should compress
The lung, and thus produce distress,—
With atrophy of parenchyma,—
Which oft induces emphysema,
With hypertrophia cordiæ,
And frequently bronchiectasie,
In short, if three weeks' medication
Have not produced amelioration;—
And if by means of Kærner's method
The *status præsens* is not bettered;
Then you should puncture *instantly*
And set the lung from pressure free.

Is the effusion *purulent*,
It should be given instant vent,
For if you leave the suppuration
To be removed by cell-migration—
Because this now and then may happen—
And hesitate until cachexia
Appears with constant anorexia—
No, thank you. But be not afraid;
Seize boldly your aseptic blade;
Thoracocclasis must be done—
(Vide "Estlander," Vol. I.)
That is, the *empyæma-sac*
Must be incised from front to back.

If *decomposed* the liquid be,
It adds much to the gravity
Of the prognosis. This is very
Oft but a process secondary;
It follows on gangrena simplex,
E. g., from abscess near the apex;
Cases of bronchiectasie,
As part of their pathology.

Sometimes indeed to our surprise,
A *putrid focus* hidden lies.
This to relieve you should endeavor;
But don't transfix the spleen or liver.
Resound the praise of our vocation!—
Some *have survived* this operation.

The case pursues a course most tragic
If the effusion's hæmorrhagic;
Although this oft is secondary
To some disease preliminary,
Like cancer or tuberculosis,
Scorbutus, also trichinosis,
Alcoholismus, Bright's, et cetera.

We cannot hope by operation
To gain the least amelioration;
Because the effusion, though reduced,
Is instantly again produced.

We should advise *thoracentesis*
Only when fluid quick increases
Without a known diathesis.
Therefore, if by aspiration
We find a sanguine exudation,
Even if the fluid be *tinged* but bloody,
The Anamnesia we would study;—
But therapy can naught avail.

Conclusio: When the fluid content
Within the chest is subsequent

To a primary process causal
Which *a priori*, is lethal.
All hope is vain, we must agree,
From pulmonary surgery.

*But empyema, be it noted,
Falls not within the rule here quoted.*

CHAPTER II.

PULMONARY SURGERY.

Of all the viscera, none we see
Changed by disease more frequently
Than is the lung, that grand creation,
On which depends the respiration.
Even if the ambient atmosphere
Were from disease-bacilli clear,
Which once was true in each large town,
As in tradition handed down,
Where Public Sanitation wages
To-day, as in the Middle Ages,
War 'gainst disease in all gradation
From sausage to small-pox-invasion,
Till, without fear of contradiction,
Or being accused of speaking fiction,
We see the prospect indicated,
Phthisis will be exterminated;
Still there remains to taunt ambition
Many a morbid lung-condition,
Which, in the parenchyma seated,
With zeal and vigor must be treated.

But here, again, we see with anguish
That although science does not languish,
But probes the etiology —
We nothing gain in therapy.
For with *resinæ podophylli*
We fail to drive out the bacilli
Which swarm with reproductive issue
All through the pulmonary tissue.

At length, when we so long have waited
To see our science vindicated,
Pulmonary Surgery takes its rise!
Let loud hosannas reach the skies!

(a) Parenchymatous Injection of the Lung.

What theory have we to guide us
In understanding what's inside us?
Does Nature act with clear intention?
Reveal design? Display invention?
What could on Nature else prevail
To guard our lungs with coat of mail?
Ah! friend, for Lister's army brave
There is no barrier but the grave.

Deep in our vitals they intrude
And saturate with certitude
The foci where the germs locate
With iodoform and sublimate.
That is, they *speculate*, they *hope*
Thus with diseases grave to cope;
That they may check the irritation
And modify the inflammation,
And by repeated deep injection
May hinder general infection.

Yes, even in tuberculous centres
The aspiration-needle enters.

And, as this therapeutic feature
Is still advanced by each new teacher,
We'll lock each bacillary matrix
Within a layer of cicatrix.

Next comes a matter of great gravity,
The sterilization of the cavity;
But — *nota bene* — the physician
Must first locate it with precision,
Determine if the content's cheesy —
A task which is not always easy.

In Dorpat dwelt Herr Dr. Koch;
Who used potass. iod. injection
"Almost without febrile reaction"
(Take care; this was on animals);
And found the adjacent lymph-canals
Closed by cicatrix. Yes, on paper
This seems a very proper caper;
But such results within the lung
Are not so easy made as sung.
That lung must in a bear's chest grow
To kindly stop *in statu quo*
When filled with iodine injection.

"Rational" treatment now is able
On grave disease to turn the table.
Each case of pulmonary trouble
(Especially if it be not double)
Must be attacked by surgery,
If brilliant cures we wish to see.

Mosler brought bronchiectasie
Within thoracic surgery,
And sought to prove to every sceptic
The need of treatment antiseptic.
He made an opening in the lesion,
And aspirated the secretion;
Left a large canula within
For irrigation, p. r. n.

With Koch's and Mosler's theories gifted
(It's always so), our colleagues shifted.
The eager group which sees perfection
In each new method tried injection.
They thought all cases thus to treat,
Unmindful of the cause or seat,
Not only in tuberculosis,
Putrid bronchitis, lung-necrosis,
Echinococcus (several cases),
Infarcts and multiple abscesses.
Recent disease, as well as chronic,
Was treated by this mode Teutonic.
This not exactly a *meme chose* is
In gangrene or tuberculosis.

Argentum nit. and iodine,
Carbolic acid. salicine,
Potassii permanganicum,
With extract quercus fluidum,
Were pumped without a quail or tremor
Through the pulmonic parenchyma.

Pneumonia due to germ-infection
Lepine then treated by injection,
Where still the lung was hepatized
With hyd. bi-chloride vaporized.
Whereby, not only — thank the Lord! —
The temperature "at once was lowered,"

But this subdued the inflammation,
And — presto — stopped the crepitation!
Then vivat, crescat, floreat
Renowned corrosive sublimate!
And may the great name of Lepine
Be emblazoned on Apollo's shrine!

But I, my friend, hold strong conviction
Against Lepine's heroic prescription.
The lung, with sixty hours' duration
Of sharp and vivid inflammation
Cannot at once resume its function,
Even by mercurial inunction!
Lepine, with zeal and tact ambitious,
Has taught a doctrine most pernicious!

This factum note: — Against injection
You should afford the lung protection
In phthisis and pneumonia.
Only in bronchiectasie
With well-determined cavity;
When even profuse expectoration
Does not reduce the exudation;
So that gangrene, thrombosis, dropsy,
Suggest the patient's near autopsy,
You should with promptness operate,
And flush with sodium carbolate.

(b) *Opening and Draining of Pulmonary Cavities.*

In diagnosis, great vexation
Pertains to bronchial dilatation.
In size and seat it's most erratic,
Presents no features symptomatic;
May be in front, or far posterior,
In apex, or in lobe inferior;
Sometimes it's large, with capsule dural;
It may be deep, may be sub-plural;
Sometimes a single tube's dilated;
But usually it's disseminated,
And wakes a crepitation-chorus,
Till we scarce know what is before us.
In short, you'll find it, I may state,
Quite hard to diagnosticate.

But if kind fate should grant to you
To localize a focus true
By tympanic resonance,
Our therapy claims no advance.
Still if the use of Abbé's prism
Reveals no septic organism,
Then operate both deep and wide —
The holy Mosler be your guide.

He cured a follower of St. Dominic
At Greifswald, [vide Hueter's Clinic]; —
Too freely quoted it can't be,
This famous case of bronchiectasie.
Eh? — cured? — How can you make the query?
Such a suggestion makes me weary
Three months and more of time went past
Before the patient breathed his last!
In the report of the obduction —
Perhaps through wilful misconstruction —
We find, as total diagnosis,
The single word "tuberculosis!"

Therefore — bacilli being detected,
Trocar and drain must be rejected!
In case of bronchial dilatation
'T will surely prove an aggravation.

Renounce the knife — bold measures cease,
And let the patient die in peace.

In abscess of the lung, however,
To free the pus you should endeavor.
But if gangrene is on the docket,
Then put your lancet in your pocket.

Here it's important you should try
To trace the etiology!
If it is primary, make no parley; —
The case has else but one finale; —
Provide immediate path of drain;
Let not a drop of pus remain.

But if the gangrene is a sequel
E. g., of abscess or its equal,
Pneumonia interstitialis,
Or infarct hæmorrhag. centralis,
Waste no more time in medication,
But follow Fenger's innovation.

You may in this be justified
By previous puncture though the side: —
Although the smell is quite sufficient
To indicate what ails the patient; —
Added to this — without cessation
A grayish-red expectoration: —
Quickly the ribs must be resected,
The cavity throughout inspected —
Then by the aid of Paquin's cautery,
Proceed to carbonize the cavity;
And follow out each wandering sinus
Whate'er its nature, great or minus;
Then as the climax of devotion
Wash out with salicylic lotion,
Insufflate well with iodoform,
The enemy of every germ;
Drain-tubes a couple, gauze and peat
Bandage, and India-rubber sheet.
Then should the patient live or perish,
You've none but pleasant thoughts to cherish.
You've followed Lister's full direction,
And can repose in his protection.

(To be continued.)

LINEÆ ALBICANTES IN TYPHOID FEVER.

THE *Lancet* remarks that sometimes atrophic lines so common after distension of the skin appear without any obvious cause of stretching. Manouvriez and Bouchard have recorded such cases occurring in the course of convalescence from typhoid fever. Troisier has given an interesting account of this condition in the *Bulletin de la Société Médicale des Hôpitaux*, No. 12. These lines have been noticed, especially in children and young adults. Bouchard considered that they were due to stretching resulting from rapid growth after the subsidence of the fever. Troisier and Menetrier have noted that the elastic tissues of the skin are less thick at the level of the "atrophic" area, but they failed to find any real evidence of wasting of tissue; the elastic fibres were simply torn through and curled up at their broken ends. M. Bucquoy said that in boys the whitish lines have no special distribution, but in girls the breasts and the iliac crests appear to be chosen sites. M. Barié referred to a case in a girl aged seventeen, in whom the lines were situated over the tibio-tarsal articulation on each side.

MERCURIC CHANGED TO MERCUROUS
CHLORIDE.

DR. SAMUEL KENNEDY communicates to the *Pharmaceutical Record* the results of his experiments with bichloride of mercury in solution.

He found by repeated testing that compound syrup of sarsaparilla reduces mercuric to mercurous chloride. If a little common salt is added to the solution, the buff-colored precipitate of calomel does not take place for at least two or three weeks. He advises to add to prescriptions in which corrosive sublimate enters as an ingredient, an amount of common salt equal to the weight of the corrosive sublimate.

Correspondence.

DINNER TO FOREIGN GUESTS OF THE CON-
GRESS OF PHYSICIANS AND SURGEONS.

WASHINGTON, August 21, 1888.

MR. EDITOR,—Some complaints having reached the committee in regard to the distribution of invitations to the dinner to be given to the foreign guests of the Congress of Physicians and Surgeons, to be held in this city next

month, I must beg the use of your columns to say that this distribution was in my hands.

The council of the Congress having expressed themselves as averse to any elaborate entertainment on the part of the Congress, it may be said, in the first place, that this dinner is *unofficial*, and is in the hands of the *members* of the committee, and not of the committee. As it was necessary, after the matter was decided upon, to act quickly in order that proper invitations might be sent to Europe and answered in time, it was not possible to arrange this distribution so methodically as might have been done had the time been longer. It was intended that every member of the Congress, that is, every member of any of the constituent associations, should have an opportunity to subscribe.

Some circulars were sent directly by me, and some of them by such representatives of the associations as I could most readily get at. It is possible that there may have been some accidental omissions; and it is more than possible that at this season, when so many gentlemen are absent from home, some invitations may have gone astray. Another possibility, which we know to have been in some cases an absolute fact, is that they have been placed in the waste-paper basket.

This note is intended as an invitation to every member of all the associations composing the Congress of American Physicians and Surgeons, who wishes to do so, to send his subscription of twenty dollars to Dr. S. C. Busey, 1545 I St., N. W., Washington, D. C., for a dinner to be given at Willard's Hotel in this city, on Monday, September 17th, at 7.30 P. M.

I am, very respectfully,
ROBERT T. EDDES, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING AUGUST 11, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consump- tion.	Diarrheal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	846	416	33.72	10.68	25.16	.48	3.96
Philadelphia	1,016,788	508	267	28.50	7.79	18.43	7.07	1.14
Brooklyn	751,432	366	197	32.76	9.56	24.18	.78	5.72
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,155	—	—	—	—	—	—	—
Boston	407,024	239	111	40.12	13.44	28.14	2.10	4.62
Cincinnati	325,000	—	—	—	—	—	—	—
New Orleans	248,000	—	—	—	—	—	—	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	154	82	36.40	9.75	26.00	2.60	—
Pittsburgh	210,000	93	55	35.64	8.72	22.68	3.24	2.16
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	26	11	46.20	11.55	19.25	11.55	—
Charleston	60,145	44	19	20.43	6.81	11.35	6.81	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	76,328	39	23	46.08	10.24	16.08	—	—
Lowell	69,550	—	—	—	—	—	—	—
Cambridge	64,079	21	12	66.66	14.28	52.36	4.76	—
Fall River	61,203	36	24	94.52	5.66	80.62	5.66	—
Lynn	51,467	14	—	14.28	28.56	—	—	—
Lawrence	40,175	26	20	65.45	—	60.60	—	—
Springfield	39,992	—	—	—	—	—	—	—
New Bedford	36,298	16	9	49.00	12.50	49.00	—	—
Somerville	33,307	11	5	18.18	9.09	9.09	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	16	9	6.66	6.66	6.66	—	—
Chelsea	27,552	19	8	31.56	5.26	31.56	—	—
Haverhill	24,979	6	2	16.66	—	16.66	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	4	1	50.00	25.00	25.00	25.00	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	7	3	28.56	28.56	14.28	—	14.28
Malden	18,932	7	5	85.68	—	71.40	—	14.28
Fitchburg	17,534	8	2	12.60	25.00	12.50	—	—
Waltham	16,651	8	3	25.00	25.00	25.00	—	—
Newburyport	13,859	12	5	41.65	8.33	41.65	—	—
Northampton	13,419	6	2	16.66	—	16.66	—	—

Deaths reported 2,531: under five years of age 1,291; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 874; consumption 253; acute lung diseases 119; diarrhoeal diseases 628; diphtheria and croup 76; typhoid fever 66; whooping-cough 38; scarlet fever 20; measles 15; malarial fever 11; cerebro-spinal meningitis 10; puerperal fever eight; small-pox two, erysipelas two. From whooping-cough, New York 15, Washington eight, Philadelphia and Brooklyn four each, Boston, Pittsburgh and Cambridge two each, Fall River one. From scarlet fever New York 14, Philadelphia four, Brooklyn and Nashville one each.

From measles New York 11, Pittsburgh and Lawrence one each. From malarial fevers New York six, Brooklyn three, Nashville and Charleston one each. From cerebro-spinal meningitis, Washington three, New York, Nashville and Lynn two each, Somerville one. From puerperal fever Pittsburgh four, Fall River two, Boston and Washington one each. From small-pox, Philadelphia two. From erysipelas, New York two.

The meteorological record for the week ending August 11, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barometer.		Thermometer.		Relative Humidity.		Direction of Wind.		Velocity of Wind.		State of Weather. ¹		Rainfall.
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	8.00 P. M.	5.00 A. M.	8.00 P. M.	5.00 A. M.	8.00 P. M.	5.00 A. M.	8.00 P. M.	
Saturday, Aug. 11, 1888.													
Sunday, . . . 5	29.82	74.0	82.0	70.0	83.0	96.0	W.	S.E.	10	6	F.	O.	
Monday, . . . 6	29.95	62.0	88.0	60.0	100.0	100.0	N.E.	N.E.	12	16	R.	R.	7.00 .88
Tuesday, . . . 7	29.95	61.0	65.0	60.0	92.0	92.0	N.E.	E.	10	12	O.	O.	2.00 .14
Wednesday, . . . 8	30.01	65.0	67.0	60.0	92.0	88.0	E.	S.W.	6	12	O.	O.	
Thursday, . . . 9	29.97	75.0	87.0	60.0	93.0	43.0	S.	N.W.	8	10	O.	O.	2.00 .02
Friday, . . . 10	30.20	76.0	81.0	61.0	63.0	55.0	N.	N.	12	9	F.	O.	
Saturday, . . . 11	30.29	66.0	81.0	58.0	53.0	80.0	N.	E.	6	10	C.	O.	
Mean, the Week.													

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE TWO WEEKS ENDING AUGUST 18, 1888.

WHITAKER, H. W., passed assistant surgeon. Detached from the "Mohican" proceed home and await orders.

FEREEBER, N. M., surgeon. Detached from the "Franklin" and to the Naval Hospital, Norfolk, Va.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING AUGUST 13, 1888.

PURVANCE, GEORGE, surgeon. Granted leave of absence for thirty days. August 13, 1888.

SAWTELLE, H. W., surgeon. Detailed as member of Board to select site for quarantine station at San Diego, Cal. August 6, 1888.

GOLDSBOROUGH, C. B., surgeon. Granted leave of absence for thirty days. August 10, 1888.

GUITERAS, JOHN, passed assistant surgeon. To proceed to Sanford and Jacksonville, Fla., and Way Cross and DuPont, Ga., on special duty. August 1, 6, 9, 10, 1888.

BANKS, C. E., passed assistant surgeon. Granted leave of absence for four days. August 6, 9, 1888.

PECKHAM, C. T., passed assistant surgeon. Granted leave of absence for thirty days. August 10, 1888.

URQUHART, F. M., passed assistant surgeon. To proceed to Way Cross, Ga., on special duty. August 9, 1888.

CLENNAN, A. H., passed assistant surgeon. Detailed as member of Board to select site for quarantine station at Port Townsend, Wash. August 6, 1888.

WASDIN, EUGENE, passed assistant surgeon. Detailed as member of Board to select site for quarantine station at Key West, Fla. August 6, 1888.

WILLIAMS, L. L., passed assistant surgeon. Granted leave of absence for fifteen days on account of sickness. August 10, 1888.

STONER, J. B., assistant surgeon. To proceed to Norfolk, Va., for temporary duty. August 9, 1888.

SOCIETY NOTICE.

AMERICAN DERMATOLOGICAL ASSOCIATION.—Programme of the Twelfth Annual Meeting to be held at Willard's Hotel, Washington, D. C., September 18, 19, and 20, 1888. Officers for 1888. President, Dr. I. E. Atkinson, of Baltimore. Vice-President, Dr. P. A. Morrow, of New York. Secretary and Treasurer, Dr. G. H. Tilden, of Boston.

First Day. Tuesday, September 18th.—Business Meeting (with closed doors), at 9.30 A. M. Morning Session at 10.20 A. M. Address by the President, Dr. I. E. Atkinson. (1) The Electrolytic Decomposition of Organic Tissues, Dr. G. H. Robe. (2) The Value of Salicylic Acid in Dermatology, Dr. Heitzmann. (3) Hereditary Dermatosis, Dr. J. C. White. Adjournment at 1.30 P. M. Afternoon Session at 3.30 P. M. (4) A Report of Four Cases of Dermatitis Herpetiformis, Dr. J. E. Graham. (5) Dermatitis Herpetiformis, with Notes of Three Cases, Dr. H. W. Stelwagon. (6) Personal Observations on Skin Diseases in the Negro, Dr. R. B. Morison. (7) Note of a Case of Filaria Medinensis, Dr. A. Van Harlingen. Adjournment at 5.30 P. M.

Second Day. Wednesday, September 19th.—Business Meeting (with closed doors), at 9.30 A. M. Morning Session at 10.30 A. M. Report of Committee on Statistics: Report of Committee on Nomenclature. (8) So-Called Acne Anthracoides Iodopotasigine, Dr. E. W. Taylor. (9) Note Relative to the Vegetative Lesions Induced by Ingestion of some of the Iodine Compounds, Dr. J. N. Hyde. (10) Notes on Some Unusual Cases of Skin Disease, Dr. W. A. Hardaway. (11) A Contribution to the Clinical History of Alopecia Areata, Dr. A. Van Harlingen. Adjournment at 1.30 P. M. Afternoon Session at 3.30 P. M. (12) The Non-Identity of Lichen Planus and Lichen Ruber, Dr. G. H. Fox. (13) The Question of Relationship between Lichen Ruber (Hebra) and Lichen Planus (Wilson), Dr. A. R. Robinson. (14) Multiple Pigmentary Sarcoma, Dr. E. B. Bronson. (15) Dermatitis Plantaris and Palmaris, Dr. L. Duncan Bulkley. Adjournment at 5.30 P. M.

Third Day. Thursday, September 20th.—Morning Session at 10 A. M. (16) Raynaud's Disease and Symmetrical Gangrene in late Syphilis, Dr. E. W. Taylor. (17) The Relation of Framboesia to Syphilis and Tuberculosis of the Skin, with Report of a Case, Dr. P. A. Morrow. (18) Kraurosis of the Vulva (Breisky), Dr. C. Heitzmann. (19) Molluscum Contagiosum, a Clinical Report, Dr. H. W. Stelwagon. Retirement of old, and induction of newly-elected officers. Adjournment at 1 P. M.

Original Articles.

OBSERVATIONS ON THE SURGICAL TREATMENT OF MALIGNANT GROWTHS.¹

BY MAURICE H. RICHARDSON, M.D., OF BOSTON.

AT the annual meeting of this Society in June, 1886, Dr. Hodges, in his admirable address, made the following statement: "Therapeutics, when not guided by an intelligent and definite purpose, are superfluous and meddlesome. Surgical operations which, from the outset, it is known cannot be completed, and into which every surgeon remembers with regret that he has been drawn by some vague expectation of benefit—the infiltrating epitheliomata, the adherent and fatally located tumors, the malignant growths sure to return, the limbs crushed in railroad accidents from which he has not withheld his hand—have certainly contributed nothing to the self-satisfaction of the operator, or helped to advance even the purely mechanical part of surgery. . . . The operation for cancer of the breast was as habitual as it is now exceptional—or, at least, as it soon will be."

He refers to the *Lancet*, March 21, 1885, p. 527, and January 9, 1886, p. 72. In a foot-note quoting from Vernueil (*N. Y. Med. Record*, January 9, 1886, p. 56): "Of one hundred possible operations, twenty are imperatively necessary, twenty are absolutely inadmissible, and the remaining sixty may be performed or not, according to circumstances, and surgeons may and do err in each of these classes of cases."

Such an expression of opinion from so eminent an authority in surgery as Dr. Hodges deserves the greatest respect, and carries great weight. I certainly agree with him in most of the opinions quoted above. No surgeon can object to the opinion that operations should not be undertaken where the malignant growth cannot be completely removed, if this can be known beforehand, unless it is done for other reasons than the hope of a permanent cure, or adding materially to the duration of life.

To the second statement—that the operation for cancer of the breast is now exceptional or soon will be—I take exception, and I have ventured to present my views on this subject, and to give my reasons, in the following paper, why I believe that the excision of tumors of the breast, as well as of other parts of the body, will become more frequent, as well as more successful.

The work necessary for the preparation of a paper based upon the experience of the Massachusetts General Hospital is very great indeed. Last year, I began the work of collecting all the cases of malignant disease treated in the Hospital by excision from November 1, 1877, to January 1, 1887. Thus far I have collected only the tumors located in the easily accessible parts of the body, and I shall consider in this paper only growths located on the face, lips, lids, scalp, ear, and tongue, the neck and body, the breast, the upper and lower extremities, and the external male and female genitals.

I cannot state my belief as to the best treatment of malignant growths better than by quoting from the authority referred to by Dr. Hodges in his paper (*Lancet*, January 9, 1886, p. 72, editorial): "A great risk and a severe operation are only justifiable when

the advantage is also great. When, for example, an operation promises complete cure or long immunity from an otherwise certainly fatal malady, it is obviously right to undertake it, even if it be severe and dangerous. This is a somewhat self-evident proposition, and yet one of its applications to practice is often lost sight of. Experience has fully shown that, other things being equal, the success of excision of malignant growths is largely dependent upon the period at which they are performed. As, therefore, an early operation for cancer offers a far greater prospect of long immunity from recurrence than a later one, a wide and more severe operation is justified in the earlier, rather than in the later stage. The contrary view is sometimes acted upon, even when not actually stated. Excisions of limited extent are often practised when malignant tumors are small, and because they are small and of recent origin, while in tumors of greater age and more extensive growth more formidable operations are readily undertaken, in spite of the small prospect of success they hold out. The converse should be the rule. When the surgeon has to do with a case in which a free excision holds out a strong hope of long immunity, or even a cure, a very thorough operation should be performed, even although it cause some deformity or mutilation, or expose the patient's life to danger. The great advantage to be expected from such an operation justifies the greater severity and the extra risk of such a procedure. Where the object aimed at is the removal of a malignant tumor, with a view of interrupting for a time or stopping forever its growth, the principle should be kept in view, and, if it were fully carried out in the early operations, we believe the practice would be attended with most favorable results."

Speaking of operations of great severity, where it is merely a question of prolonging life: "In all the isolated brilliant achievements of surgeons in this region of practice, it is doubtful whether some of these operations have resulted in adding to the sum total of human life; the prolongation of a life here and there does not compensate for the cutting short of that of many others."

I believe that the immediate future will see a great increase in the number of these operations, and very much greater success will follow them by the recognition, on the part of the general practitioner, of the vital importance of early diagnosis and excision of all growths situated in those parts of the body especially liable to malignant disease, and by the adoption on the part of the operator of the principle quoted, that it is in the early stage of the disease that the most radical operation should be done.

It is hardly necessary for me to call the attention of members of the Society to the dreadful condition of body and mind to which this fearful disease sooner or later reduces the unfortunate patient. Every physician knows that malignant disease, especially certain forms of carcinoma, is a terrible thing. If left to itself there is a period of life, quite definitely shown by statistical tables, during which the life of the patient is one of dreadful suffering, and he may become an object of loathing to himself and his friends. It is a mercy if this period is shortened by intercurrent disease or by the early invasion of the internal organs.

From a great mass of statistics, we can easily find the average duration of life in different forms of malignant disease where no operation has been done. We

¹ Read before the Massachusetts Medical Society, June 13, 1888, and recommended for publication by the Society.

can ascertain in the same way the duration of life in all the great classes of malignant disease where an operation for relief or cure has been done, and it must be acknowledged that in most forms the prolongation of life and the alleviation of suffering do not present a very favorable outlook. But, nevertheless, it does not seem to me that we are justified, in the face of these statistics, in saying that all attempts at cure or relief should, therefore, be abandoned. Probably every physician in this room has had cases, or knows of cases, in which an operation for the cure of cancer has been perfectly and permanently successful. If we can show that there is even a small percentage of complete recoveries, are we not justified, and is it not our duty, to operate in all cases where there is no definite contraindication, as shown below? It is certain that in many cases life is prolonged for years. It is no doubt true, also, that in a certain number of cases life is shortened; but, if we analyze such cases, we shall find, I think, that in the majority of them the disease was attended by such conditions as would, in my opinion, now render an operation unadvisable.

I would say here, once for all, that cases evidently incurable are not considered at all in this paper. Even in hopeless cases, no one will deny, I think, that operations are sometimes demanded for the relief of pain or the removal of an offensive mass.

It is generally admitted that malignant disease is a local, not a constitutional affection. We must look, then, for the cause of failure in the operation itself, provided we can show that in a given case there was no invasion of distant organs by the disease which was overlooked. The points to be considered in the following analysis of cases are, first, the thoroughness of the excision, and second, the evidence by which we can decide that an operation is inadmissible.

The cause of the ill-success hitherto met with in these operations is: (1) in early and favorable cases the excision is not thorough; (2) sufficient attention is not given to the existence of glandular infection and metastasis of the internal organs as contraindications.

It is the imperative duty of every surgeon and every practitioner of medicine to investigate at once every new growth which comes under his observation, with a view to perform the most radical excision as soon as its malignancy has become established, provided, of course, the disease can be thoroughly removed, and provided there are no contraindications either in the disease itself or in the general condition of the patient. The most favorable time for operation is the very earliest possible after its discovery, and *then* is the time when a thorough removal promises the best chance for recovery. I am perfectly aware that all these remarks are truisms, but, nevertheless, it seems to me worth while to emphasize them again. Nothing is more common in the experience of every surgeon than to meet with cases of inoperable malignant disease which have been treated for a long time as benign by local applications, constitutional remedies and other methods, while the favorable opportunity for surgical interference has been lost. All cases, for instance, of ulceration of the lip after the age of thirty; all slowly growing tumors of the breast after the age of thirty; the rapidly growing tumors of childhood and youth; in fact, all rapidly growing tumors of all times of life are of sufficient gravity to make it the imperative duty of the attending physician to take meas-

ures to ascertain their nature. It is not right to allow a crust or ulceration of the lip to grow unchecked, or to allow a tumor of the breast to increase until the axillary glands become involved, in the hope that there is nothing malignant in these cases, when we know that by far the greater number of them, after the age of thirty, are malignant, and that a most fearful death awaits the patient, in the course of a short time, if something is not done to prevent it. It is of the greatest importance, then, to recognize at the earliest possible moment the existence and nature of a new growth, no matter how trivial, in any part of the body which is known to be the common seat of malignant disease. A lady of forty-five consults the physician for a small lump which she has discovered in her breast. She is very nervous and much excited, and fears that she has a cancer of the breast. It is the natural wish of the physician to assure her that it is probably nothing, that it has always existed, and will never amount to anything. But do we not by such advice allow the opportune moment to escape? Is not this the time when of all times an operation should be advised and done? The lady presents herself again, perhaps, for examination in the course of six months or a year. Resting upon the assurance of the physician, nothing has been done; her mind has been at rest, and the gradual enlargement of the growth has excited no fresh apprehension. She is again examined and the axillary glands are found involved. An operation is now advised and performed. The focus of infection which at first was limited to the breast, and which might have been removed most thoroughly, has already extended to numerous points in the axilla. A much more radical operation has become necessary, and her chance for recovery has been diminished. The same experience is constantly met with in ulcerations of the lip. I would, therefore, emphasize most strongly the importance on the part of every physician of early recognition of the nature of all new growths.

When the malignancy of the growth has been established by microscopic examination, and when by the most searching physical examination no extension can be found to exist in the thorax or abdomen, and when the lymph-glands are unaffected, or if involved they are within reach and admit of complete excision, then the operation should be undertaken. But even then the patient should be informed of the serious nature of the disease and the probability of recurrence, before excision should be performed. It is not right to subject any patient to an operation with the assurance that there is no danger of return. He has a right to know the facts before submitting to the necessary suffering, and incurring risk of immediate death. In this way the surgeon and his art will be protected from the criticism, too often true, that harm has been done instead of good, and that life has been shortened rather than prolonged. Such criticisms, no doubt often undeserved and unjust, are very common among the laity, and many have come to me among the responses to my letters. By careful attention to these suggestions, in every case, I am convinced that not only will many fatal results be avoided, but in the event of recurrence the friends and the patient himself will have no cause to complain.

The operation of excision should never be undertaken unless it is certain that all the growth can be removed,—that is, as an operation for cure. When

it has been decided that complete excision is possible, or that it is not impossible, then the growth should be removed with the knife in such a manner as to take with the tumor a broad margin of skin and a deep layer of healthy subjacent tissue, regardless of deformity or mutilation.

The existence of affected lymph-glands, while it is almost a contraindication to the performance of an operation, does not necessarily remove all chances of cure. When they are present they should be removed in the most thorough manner as far as they can be felt, with the surrounding tissues, and with all the parts between them and the tumor through which the lymph vessels are known to run. I have met with many cases, especially in cancer of the breast, where there has been immunity from the disease for several years, and where the reappearance has taken place in the breast scar rather than in the axilla, after the most thorough dissection of that space.

I have no doubt that it is impracticable to perform as thorough excision as I have recommended, especially in cases of mutilation of the features, yet I am fully convinced that such mutilations in the first operation, — in epitheliomata of the lip and lid for example, — would prevent in a great many cases the horrid deformities which make their appearance in the later stages of the disease.

From November 1, 1877 to January 1, 1887, eight hundred and thirty-three cases of new growths were treated at the Massachusetts General Hospital by excision. It is very probable that some of these were not malignant, but by far the greater number were. They embrace all varieties of malignancy, all ages, and all occupations. Of these eight hundred and thirty-three cases I have recent information in four hundred and ninety-eight. Of the four hundred and ninety-eight, two hundred and fifty-one are living and two hundred and forty-seven are dead.

Of those operated on previous to 1881, there are now living, 38.2%; dead, 61.8%.

Operated upon in 1881	Living, 52.54%	Dead, 47.46%
" " 1882	43.6	56.4
" " 1883	49.2	50.8
" " 1884	59.4	40.6
" " 1885	61.	39.
" " 1886	71.4	28.6

I have not included in these returns those cases where I have obtained information not accompanied with that of their present condition. There are many cases where the patient was incurable and where no second operation was done, which would increase the death side of the table very materially.

Taken as a whole these cases present very hopeful results and encourage, I think, the performance of excision as a general rule. If the present practice of more radical excision had been done in all these cases, and if fewer attempts had been made in the now-considered hopeless cases, I have no doubt the showing would have been much better than it is.

First in importance and frequency come Tumors of the Breast, with 274 operations. I have received 163 replies. Of the 163, 68 are living and 95 dead.

Next comes Epitheliomata of Head, Neck and Face, with 114 cases, from whom I have received 67 replies, with 34 living and 33 dead.

Tumors of the Extremities, all varieties. 89 cases; 56 replies, 37 living and 19 dead.

Cancer of Lip. 75 cases (not included in Epitheliomata), with 51 replies, 26 living and 25 dead.

Tumors of the Jaws. 40 cases; 20 replies, 11 living and nine dead. (Not including Epulis.)

Epulis. 20 cases; 11 answers, 10 living and 1 dead.

Penis. 22 cases; 10 answers, 6 living and 4 dead. Female Genitals. 14 cases; 3 answers, 2 living and 1 dead.

Tongue. 20 cases; 13 answers, 11 dead, 2 living.

Palate. 6 cases; 6 replies, 4 living and 2 dead.

Tonsil. 1 case, living.

Parotid. 11 cases; 5 replies, all living and well.

Melanotic Sarcomata. 10 cases; 8 replies, 1 living and 7 dead. The only living case was undoubtedly a melanotic sarcoma shown by the microscope.

Lymphosarcomata. Besides those cases included in the parts already given, 4 cases; 3 replies, all dead.

Excision of Tumors of the Testicle. 15 cases; replies 9, living 2 and dead 7. The 2 living cases were sarcoma and tuberculosis.

It must be borne in mind that there are quite a number of cases included in these lists which are probably not malignant. It is very unfortunate that there has been no microscopic examination in so many of the older cases. Death from a tumor or recurrence is sufficient evidence, however, of the malignancy of it. It has been impossible for me to go over all the cases and make the proper eliminations, except in the tumors of the breast, so that the figures and percentages are not as yet correct. They are sufficiently accurate, I think, for me to draw certain conclusions at this time. In a later paper I hope to be able to present the evidence in a more satisfactory form.

First in malignancy and fatality come the few cases of Lymphosarcomata, — all being now dead that have been heard from. Next come the Melanotic Sarcomata, with 7 dead out of 8. 87.5%.

Cancer of the Tongue, 84.6% dead.

Tumors of the Testicle, 77% dead.

Tumors of the Breast, 58% dead.

Epitheliomata of Face, etc., 49.2% dead.

Cancer of the Lip, 49% dead.

Tumors of the Jaws, 45% dead.

Cancer of the Penis, 40% dead.

Tumors of the Extremities, 34% dead.

Female Genitals, 33.3% dead.

Tumors of the Palate, 33.3% dead.

Tonsil and Parotid, all living.

While I am perfectly aware that these figures are not entirely reliable and accurate, as showing the percentage of recurrence and death after operation for malignant disease, and are open to criticism because the variety of growth is not given in all cases, yet in a general way they show the comparative malignancy of the various classes and situations, and enable me to emphasize certain facts to which I wish to call attention. We can say, for example, that operations undertaken for the cure of cancer of the tongue, as performed at the hospital during the past twelve years, offer very little chance of success, and the same may be said of the lympho- and melanotic-sarcomata. Tumors of the testicle and jaws also present a fearful mortality during that period. On the other hand, tumors of the palate, of the extremities (especially where amputation has been done), and even cancer of the lip and epitheliomata of the face, present much more favorable showings.

There is left the middle and much more important class of tumors of the breast, where the present living

percentage of forty-two per cent. is encouraging enough to justify renewed efforts in that direction.

Lymphosarcomata.—The results in these operations are too few to base much upon them. I do not believe, however, that excision of a large number of these glands in the neck will long continue to be good practice. I have done the operation several times, and have removed at one operation forty-five glands from the neck, and within a month as many more from the same boy. I do not believe that it is possible to effect a permanent cure, unless it can be reasonably certain that there are but one or two glands affected, and those within easy reach. I would apply the same general rule to these glands that I would to the secondary infiltration of the axillary glands in carcinoma of the breast, or to that following malignant disease of the extremities, namely, that no operation is justifiable where the glands are beyond easy reach. That is to say, when the infected gland is above the clavicle in breast and arm cases, or behind it in neck cases, or above Poupart's ligament behind the peritoneum in cancer of the genitals or of the lower extremity. In a case of lymphosarcoma, where but one gland is involved, it seems to me that operation is imperative; but in cases where a great mass of glands fills the neck and axilla, I believe that nothing can be expected beyond a possible prolongation of life and that is very uncertain.

Melanotic Sarcomata.—The mortality is extremely discouraging in this class of tumor. Most of the cases have affected the lower extremity. In these cases I believe that an early realization of the nature of the case, and the most thorough application of the most radical methods of excision will be followed by more favorable results. Such a case, a melanotic-sarcoma of the foot for example, if discovered before any glandular infiltration has taken place, demands amputation at once. The tendency of this disease to glandular complications and internal metastases will always make the failures large. In this, as in other forms of malignant disease to be considered, the ideal operation cannot be performed because of the very natural objection on the part of the patient to a sacrifice so out of proportion to the apparent necessities of the case. Yet it seems to me that the facts demand that the most radical measures be selected to meet the dangers of early internal infection in the melanotic sarcomata.

Cancer of the Tongue.—This is equally discouraging. Of the two cases now living out of a possible thirteen, one was probably not malignant, and the other so small that a wide margin of healthy tissue was left.

No attempt at removal of the tongue is justifiable, judging from these few cases alone, unless the operation is so radical as to leave a wide margin of unaffected parts. I believe that total excision is the only justifiable practice where the tumor is of any extent. The rapidity of growth of this disease makes it very important that it should be recognized early. It should then be most thoroughly removed, even sacrificing the whole organ if necessary, but should not be done, as it seems to me, where there is the additional complication of invaded cervical glands. That adds, I think, the deciding element.

Of the eleven cases heard from, nine are dead. One of the living should be excluded. The other living case was operated upon in 1884, and the tumor was very small and easily excised. One of the deaths followed

the operation, one occurred at the end of three months, one at four, one at five, one at six, one at twelve, one at fourteen, two at twenty, and one uncertain. The average duration of life was ten and a half months. It can hardly be said that life has been prolonged in these cases to any considerable degree, certainly not enough to justify the operation.

In such cases as these it seems to me that true conservatism demands that very few of them be touched, but when an operation is done it should be of the most thorough and formidable character. Removal by any other means than the knife, or, the growth being located near the tip of the tongue, the écraseur or the ligature, is not to be thought of for the purpose of cure.

(To be continued.)

REPORT OF CASES CONFINED AT THE BOSTON LYING-IN HOSPITAL DURING THE THREE MONTHS, JANUARY 1 TO APRIL 1, 1888.¹

SERVICE OF DR. W. E. BOARDMAN.

It is my privilege to inaugurate the custom of rendering to this Society a quarterly summary of the service at the Hospital. From this and succeeding reports it is believed that some, possibly much, information of value may be derived. You are quite familiar with the class of patients which are received there, and the profession, generally, is now well informed as to the routine methods of treatment pursued, which have been so clearly described by my colleague, Dr. Richardson, in a paper recently read before this Society, which shows conclusively to our minds the value—indeed, the necessity—of aseptic and antiseptic precautions in midwifery, a conclusion which the experience herewith presented will serve to emphasize, comprising, as it does, the largest number of patients confined at the Hospital in any quarter-year, and including a large proportion of complicated and serious operative cases, all of which recovered promptly without alarming symptoms. Indeed, the only case of evident protracted septicæmia was that of Jessie M., whose labor was normal, and whose temperature did not begin to rise until the eighth day of convalescence, when it was determined that the disturbance was due to a malposition of the uterus, which occasioned an obstruction to the escape of the lochial discharge from the cervix.

I deem it proper to state that the very successful issue of all the cases was largely, if not chiefly, due to the intelligent, efficient, and unremitting care of the internes, Drs. Mead, Paul, and Yage.

Primiparae, 77; multiparae, 35; total, 112. Married, 58; single, 54; total, 112.

	I	II	III	IV	V	VI	VII	VIII	IX	Totals,	112	54	58
p	77	52	25										
m	16	2	14										
h	10		10										
l	3		3										
v	2		2										
u	2		2										
o	2		2										
t	2		2										

Average age of primiparae, 23.6-7 (oldest 36, youngest 16.) Average age of multiparae, 28.6-7 (oldest 42, youngest 20.)

Primiparae, 72 Head (63.5 %), 4 Footling (5.2 %), 1 Breech (1.3 %). Multiparae, 35 " (100 %).

Primip., { 38 O.L.A., 33 O.D.P., 1 O.D.A., 9 O.L.P., 2 S.D.P., 3 S.L.A. 49 1-3 % 42 6-4 % 1.3 % 2.6 % 3 6-4 %

Multip., { 25 O.L.A., 9 O.D.P., 1 O.L.P., 2.8 % 71 3-4 % 25.7 %

¹ Read before the Obstetrical Society of Boston, May 12, 1888.

PREMATURE LABOR.

Primiparæ—1 s mo. 2 7 mo. 1 6 mo. 1 5 mo. 1 O.L.A. 1 O.D.P.
2 Footling. 1 Breech.
Multiparæ—2 7 mo. 1 O.L.A. 1 unknown.
Abortions none.

Labors: natural, 94; laborious, 8; complex, 5.

Forceps were applied in seven cases: in four instances the high operation was done.

Version after manual dilatation of the os was done in two cases, and attempted in a third case where the os was fully dilated. Eclampsia occurred in one of these cases.

There was one case of complete placenta prævia.

Craniotomy was done upon the dead foetus, once on the after-coming, and once on the presenting head.

Twins occurred only in one instance.

These cases are given somewhat in detail later on.

Average duration of labor: primiparæ, 24 h., 3 min. (first stage, 22 h., 45 min.; second stage, 1 h., 25 min.; third stage, 11 + m.); multiparæ, 28 h., 7 min. (first stage, 27 h., 27 min.; second stage, 22½ m. third stage, 10½ m.)—one case, 147 h., 30 min., and another, 286 h., 45 min.

Urine (taken on entrance): albumen found in 29 cases, and casts in one (Case III), described later.

Maternal pulse: average after completion of second stage, 84½ (highest, 144, lowest 60); average after third stage, 86½ (highest 144, lowest 60). The highest rate was in Case V, with placenta prævia.

CHILDREN.

Whole number, 113.

Fœtal length averaged 136 + (highest, a girl, 178; lowest, a boy, 119). Boys' average, 136 +; girls' average, 133 +.

Sex: 58 male (43 primiparæ, 15 multiparæ); 55 female (35 primiparæ, 20 multiparæ).

Length, average: male, 21.1 in.; female, 21.06 in. Longest (female), 24 in.; shortest (male and female) 17.5 in. each.

Weight, average: male, 7 2-16 lbs.; female, 7 1-16 lbs. Heaviest (male), 10 5-16 lbs.; lightest (male), 5 lbs. Average gain in weight, 31 oz.; greatest gain, 19 oz.; greatest loss, 21 oz.

Cord: average length, 24.3 in.; longest, 37 in.

Placenta: average weight, 21 oz.; heaviest, 36 oz.

Cord came off: average, 7 16-23 days; longest time, 14 + days; shortest, 4 days.

Ophthalmia occurred in two cases, and yielded readily to treatment with calomel dusted between the lids.

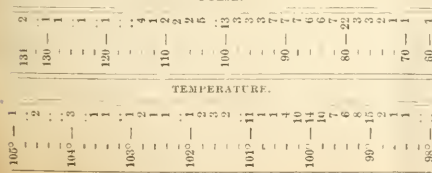
Puerperium: there was a mild cystitis in one case, relieved by catheterizing in a few days.

The catheter was required to relieve retention in 19 cases. The breasts were supported in 28 cases, and 7 cases had sore nipples. There occurred but one case of septic trouble which occasioned any anxiety, the one to which reference has already been made.

The following table gives a summary of the temperatures and pulse, and in connection therewith it should be stated that the number of high temperatures must not be considered as indicating an equal number of septic cases, for most of them were instances of a temporary rise from emotional or other neurotic disturbances—the passage of large fecal masses and like trivial causes. The scope of this paper will not permit a more detailed analysis to substantiate this statement.

PULSE.

TEMPERATURE.



Uterus. Examination made before discharge from Hospital (not all examined). Position: left lateral version, 2; right lateral version, 1; anteversion, 27; anteversion, 51; normal, 15. Cervix: right lateral laceration, 31; bilateral laceration, 30; stellate laceration, 3; normal, 34. Average depth of uterus, 3½ in.; greatest depth, 5 in.

CONDITION OF PERINEUM.

	Intact	Old tear
I para	22	5
II "	3	7
III "	1	1
IV "	1	2
V "	1	1
VI "	1	1
VII "	1	1
VIII "	1	1
IX "	1	1
Total	26	19

Nicked 31, united 17, not united 14.

Lacerated and stitched 31, united 18, partially united 10, not united 3.

Average stay in Hospital after confinement, 14 + days; longest, 53 days.

Mortality: maternal, 0; infantile, 1 (a premature seven-months' child, which was born asphyxiated, but was resuscitated and lived three hours).

Stillbirths, 9. Seven of them were premature; and one of these, and another at full term, died in the process of artificial delivery, and craniotomy was done later. The ninth case was the child of Case VII, referred to later.

The mothers were all discharged well except, of course, some of them were debilitated. The children were all discharged well.

The following cases are referred to as presenting points of interest:

CASE I. Elizabeth B., I para, single. Confined February 19th, O. D. P. First stage, 8 h., 50 min.; second stage, 1 h., 35 min. Head delayed at perineum, and Largent-witch forceps applied by Dr. Boardman. Child had cephalohæmatoma. Mother and child discharged, well, March 3d.

CASE II. Elizabeth G., I para, single. Confined February 19th, O. L. A. First stage, 32 h. Largent-witch forceps applied at brim. Mother and child discharged, well, March 3d.

CASE III. Sophia F., I para, single. Confined February 22d, O. L. A. First stage, 25 h., 45 min. (membranes artificially ruptured); second stage, 1 h., 15 m. Head delayed at perineum, and short forceps applied by Dr. Mead. Mother and child discharged, well, March 6th.

CASE IV. Marion M. K., married, thirty-one years old, I para. Confined January 30th, O. D. P. First stage, 49 h., 10 m.; second stage, 2 h., 6 m. Pelvis: external conjugate 7½ in.; crests 9½ in.; anterior superior spines, 8 in.; diagonal conjugate, 3 in. Membranes ruptured before entrance. For seventy-two hours had good pains: os not dilating, cervix taken up. Then had convulsion. Urine smoky; albumen, ½%. Two more convulsions, partially controlled by ether. Etherized seventy-eight and one-half hours after beginning of labor; os a pin-hole. Dilatation begun by Dr. Boardman with sponge-forceps at 2.10 P. M., and carried on with bone-forceps. Then manual dilation was begun: the hand was pushed with much difficulty through pelvis. A rest of fifteen minutes became necessary to recover strength and control in the hand, which was introduced again and the right foot seized and brought to vulva at 3.20 P. M. Traction on child and pressure over uterus were employed. Hot cloths to child; the fœtal heart beating from 160

to 180. Child born to shoulders easily, but the head was arrested at the brim. Traction and forceps proved unavailing, and at 3.55 the skull was punctured with Smellie's scissors just behind right ear. The cranioclast could not be applied and the blunt hook was introduced, and by traction with this the head was born at 4.16 p. m. A hot vinegar douche was given to prevent hæmorrhage. Retention till February 3d, requiring catheterization. Discharged, well, February 20th.

CASE V. Nellie M. K., VIII para, thirty-four years old, married. Labor began February 14th, at 7 A. M., at her home, where she had, as stated, a very profuse hæmorrhage. Physicians were summoned, and the vagina was tamponed with a sponge and a colpeurynter. Entered the hospital at 6.40 p. m., when she was extremely weak and blanched, with a variable pulse from 120 to 140. Fœtal heart could not be heard. The tampons were removed without inducing hæmorrhage, and the os found dilated to size of seven-eighths-inch and dilatable. Complete placenta prævia was determined. Without delay I commenced manual dilatation of the os. As the vagina was very capacious and the os dilatable, no ether was administered, as I thought the patient's chances would be better without it. She did not utter a word; indeed, scarcely gave an expression of distress during the operation, which was readily done. The right foot was seized. A little delay was occasioned by the obstruction to the version by the hand and head. Child born in thirty-five minutes after commencing manual dilatation, and found to be macerated, about eight months old. Placenta and membranes came away entire. Mother discharged, well, March 12th.

CASE VI. Elmira B., I para, twenty-five years old, married. Confined March 13th, O. D. P. First stage, 20 h., 50 min.; second stage, 5 h., 26 min. Head was delayed for three hours on perineum, when it was delivered, face to pubes, by Dr. Paul. Mother and child discharged, well, March 26th.

CASE VII. Lizzie B. (col.), I para, thirty-five years old, married. Had multiple fibroids. No history of menorrhagia prior to pregnancy. One tumor, with a pedicle, the size of an orange, could be felt in the epigastrium. Three smaller ones, without pedicles, projected from the left of the uterus. None could be felt per vaginam. Twins were diagnosed by the sounds of the fœtal hearts. The first presented S. L. A. Little progress having been made for eleven hours, when the os was about two-thirds dilated and the membranes ruptured, while the patient was partially under the influence of ether, I brought down the right foot. The sacrum rotated posteriorly to left, and left foot was released. The body continued to rotate, and came out back to pubes. The child was soon born, partially asphyxiated, but was readily resuscitated. The uterus remained large, and the membranes of the second child were ruptured artificially, when it presented O. D. P. Labor continued to be slow, with inefficient pains. Ether was again administered, and the second child easily extracted with Largethew's forceps. A slight post-partum hæmorrhage ensued. The patient had an uninterrupted convalescence. The uterus remained large, measuring four and one-half inches in depth at the final examination, when the tumors could hardly be felt. Mother and children discharged, well, March 26th.

CASE VIII. Mary C. S., twenty-eight years old, I

para. Entered, in labor, March 14th, when fœtal heart was heard beating normally. Patient did not have severe pain, and her general condition presented nothing unusual. Two hours, forty-five minutes, after entrance, upon auscultation, no fœtal heart could be heard. In the interest of the child, I immediately proceeded to manual dilatation of the os, which was then one and one-half inches wide, and ruptured the membranes, giving escape to liquor, mixed with meconium. Largethew's forceps were applied at the brim, and the child was extracted, still-born. There was some little delay in getting the head through the superior strait. Possibly, had I at hand an axis-traction appliance, the result might have been more favorable, though the mixture of meconium with the amniotic fluid would indicate otherwise. The placenta was normal in appearance. Au autopsy upon the child showed no cause for its death, but the head was not opened.

CASE IX. Matild R., I para, married, thirty-two years old. Labor began March 15th. Membranes ruptured, 2 A. M., March 16th. Brought to Hospital from East Cambridge, 8.40 p. m., March 18th, when I found the os fully dilated, with the head presenting, O. D. P. Fœtal heart, 178; mother considerably exhausted; pulse 108; temperature, 100.2°. Inspection of abdomen showed a marked prominence above, on left side, and another below the umbilicus, on right side, suggesting twins; but only one fœtal heart could be heard, on right side, below the umbilicus. A deep sulcus could be plainly defined between the two masses. Per vaginam, the os was found to be quite fully dilated, the anterior lip elongated and œdematous; head presenting, O. D. P., and just entering brim. At 9.15, under ether, version was attempted; but I was unable to get my fingers beyond the line of the sulcus mentioned, which was due to a constriction at about the junction of the middle and lower third of the fundus. It will be remembered the membranes had ruptured at 2 A. M., March 16th, two days and more before. After continuing for some time, without effect, my efforts to pass this constriction, I withdrew my hand, and applied the Vienna forceps; but these slipped. Then I endeavored to use Reynolds's axis-traction rods; but the fenestra of the forceps were so high and jammed at the brim, that I could not introduce them. Largethew's and Pajot's forceps were then tried with the same results. Meanwhile the patient's pulse had risen steadily to 160. The fœtal heart could no longer be heard, and craniotomy was begun. Just as a perforation had been made, the patient ceased to breathe, her face and extremities became black, and the pulse ran up to 170. She was immediately placed with head down and limbs elevated to the perpendicular, and stimulants were given subcutaneously. Considerable liquid ran from the mouth, presumably, too, from the trachea, and respiration was resumed. She was then replaced upon her back, with the head dependent, and delivery was soon accomplished by the cranioclast. Pulse 120. Ergotine was administered subcutaneously, and hot vinegar was injected into uterus. The uterus contracted slowly. There was but slight hæmorrhage after removal of placenta. She rallied well from the ether and convalesced gradually, and was discharged, well, April 7th.

She had for a few days considerable persistent and distressing cough, with coarse, moist, sibilant, and sonorous râles in lower half of back of lungs and

lower half of left front, with muco-purulent expectoration. An abscess formed in right forearm at the seat of the subcutaneous injection of ergotine. At the time of her discharge the uterus was still large, with a depth of five inches and a right lateral laceration of the cervix. Measurement of the pelvis gave between anterior superior spines, $8\frac{3}{4}$ in.; between crests, $9\frac{3}{4}$ in.; external conjugate, $6\frac{3}{4}$ in.; diagonal, 4 in.

Therapeutic Nihilism.

BY MAURICE D. CLARKE, M.D., OF HAVERHILL.

It has been said, and perhaps not altogether without reason, that what Matthew Arnold would call the stream of tendency of modern medical thought was toward a therapeutic nihilism,—at least in Boston. Now, if by nihilism in therapeutics were meant anything like the chaos the word implies, the charge would carry with it its own refutation. But, if the men that are fond of the phrase therapeutic nihilism, mean by it that our creed is that of *laissez faire*, that our attitude by the bedside is one of folded hands, that, in short, we are willing waiters and not workers, we may well plead to the indictment.

Doubtless there is something captivating in the phrase itself, since it stands out in evident contrast to the general instinct of humanity, testified to no less by the domestic thoroughwort and saffron than by the munificent hospitals and dispensaries of a larger charity, to do something for the sick. Whether to do something is necessary or not, whether it is wise or not, whether it may not be even harmful, we all understand that it is expected of the physician, by common consent, to do something. How often, too, after having inquired as to the patient's bodily functions, regulated the diet, made suggestions as to bed and bedding, urged the importance of fresh air, and carefully attended to all the minute details for the patient's comfort, how often has it fallen to the lot of all of us to be confronted by the anxious friends with the inquiry, "But aren't you going to do something for him, doctor?" It is equally a matter of common knowledge that this widespread sentiment of the laity finds its echo among physicians, and that a large majority of them share the opinion that he fails of his duty and his privilege who neglects to do something. The alleged nihilist in therapeutics antagonizes, therefore, a rooted prejudice, not alone in the world at large, of whom nothing else need be expected, but among his own class, who might be presumed to exercise an intelligent judgment.

I remember very well that the somewhat jejune proceedings of the Section of General Medicine of the International Congress at Washington last fall were refreshed one afternoon by a discussion on therapeutics, in which varying views were presented with an approach to animation. No speaker, however, met with a heartier reception or provoked louder applause than a gentleman from Ohio, who announced himself as an enthusiastic believer in active medication and in the new drugs, and who pointed his remarks by the terse statement that, whereas rheumatic fever used to mean Dover's powder and six weeks, it now meant salicylic acid and six days. The man and the approval are typical. There can be no doubt that the popular current sets this way. It is the positive dogmatist that

catches the public ear, and negations fail of attractiveness as they are difficult of proof.

I suppose there are few pursuits whose study and practice are characterized by so much zeal as that of the physician. The zealous medical student has become a proverb. And it is excess of zeal that has obscured and continues to obscure the exercise of a reasonable therapeutics. Each new drug that the botanist finds in the fields, the chemist in the retort, becomes to the ardent experimentalist an immediate specific for not one disease but many. It was so in the days of our fathers, it is so now, it is very likely to be so for some time to come. There is just dying from our midst the last of a generation that revered the lancet, and many of whom used to find their own materia medica in their neighboring woods and fields. The place their valued remedies held was usurped yesterday by antipyrin, the day before by cocaine, and will be to-morrow by I know not what. It is stated in the current medical literature, with every appearance of truth, that cocaine, for example, is "good in," to use the every-day phrase, gastralgia, childbirth, seasickness, nasal hemorrhage, hay fever, rhinitis, hæmoptysis, etc.; while antipyrin is very fortunately useful in spermatorrhæa, pertussis, enuresis, locomotor ataxia, rheumatism, migraine, neuralgia, seasickness, epilepsy, phthisis, hay fever, hysteria, lumbago, sciatica, diabetes, chorea and herpes zoster. But, alas, last week or last year the virtues of other drugs were lauded with equal assurance of their power. It is gravely stated in a dispensatory of the last century that "examples are related of very dangerous phthisis cured by the continued use" of a conserve of red roses; and the tincture of amber is extolled as "having incredible efficacy in all those distempers which proceed from weakness and relaxation, and in hypochondriacal, hysterical, and cold languid cases."

But there are other causes operative to favor indiscriminate therapeutics besides the popular clamor for dosage and the professional tendency to energetic medication. Not the least of these is the vast number of physicians annually sent out by the schools, which, in the nature of things, must include many excellent blacksmiths and tradesmen. "In this country," says the president of the American Medical Association in a recent address, "the multitude of medical schools, offering to the educated and uneducated, by low fees and short terms of study, inducements to become doctors, together with the almost universal desire among laborers to become doctors, has worked incalculable mischief. We have waited almost half a century for the desired reform to be effected, but our expectations have not been realized. Many excuses have been brought forward, but there is no excuse which will free the medical schools of this country from the responsibility of the odious defects of our system of medical education. The ratio of professional men in the United States to the population exceeds that of any other country in the civilized world. The ratio of practitioners of medicine to the population of the United States at present is about one to every five hundred and eighty, and there is very little danger that this ratio will be lessened. The supply will always equal the demand in spite of all difficulties." It is inevitable that the greater the rush to enter the profession the greater must be the proportion of those who, having but a smattering of general knowledge before matriculation and looking after graduation upon the practice of

¹ Read before the Massachusetts Medical Society, June 12, 1888, and recommended for publication by the Society.

medicine as a mere trade or means of livelihood, apply to it the same instincts and rules that govern the grocer's clerk and the carpenter's apprentice. It is inevitable that quinine and calomel should represent to them to-day the saw and scales they dropped yesterday, and that they should bring to the treatment of that complex variation from the normal we call disease the same confident energy they once employed in the building of fences and the weighing of sugar.

So far, indeed, as the representative school of New England, in which some of us have a personal interest and pride, is concerned, it is well understood that it is not open to criticism of this sort. I am not disposed to affirm, nor would it affirm, that its curriculum is complete or its methods incapable of improvement. I have heard the complaint in years past that its graduates had learned much about medicine, but had failed to learn how to practise it; that they had been taught the science and not the art of therapeutics; and that, when they were brought face to face with the every-day exigencies of private practice they found themselves at a loss. Now it may easily be that the student of the earlier days, riding his rounds with the country doctor, found something in the personal acquaintance with his instructor and his instructor's methods, in the daily elbow-touch with his parishioners, in the actual sharing of the interchanging hardships and rewards of a physician's life, — found something that the modern medical school, even with the aid of hospital and dispensary, fails in the nature of things to furnish him. And it may well be that the modern medical school would do wisely in adding to its scheme a few lectures upon the practical side of medicine before turning its graduates loose upon the community. But this is not saying that the modern medical school holds a wrong attitude toward therapeutics, if, inclining neither to the rhapsodies and vagaries of the enthusiast on the one hand nor to the idle fatalisms of the sceptic on the other, it aims to teach only such things as are believed to be truths in medicine, and leaves its students to deduce from them right conclusions.

The fact is that the treatment of the sick is very largely a matter of temperament. Some men are naturally disposed to look at disease from the standpoint of preventive medicine, some from that of hygiene, some with a reverence for the *vis medicatrix nature*, some with a belief in active medication. And the latter position is certainly the most attractive to the average medical man, and, in the presence of any serious illness, it is the most acceptable to the laity, in spite of the popularity of that therapeutic opera bouffe, homœopathy. Again, some men incline to run after new fashions, treating all diseases impartially and indefatigably with the newest discoverable drugs, and endeavoring to keep up with the "samples" of the manufacturing chemists; this is experimental therapeutics. Others, tor inert, perhaps, to shift for themselves, leave to these the practice of experiment, but borrow from them the suggestions their results afford; this may be called vicarious therapeutics. Others, again, settle back into the comfortable habit of always giving the same thing for the same disease, and thus, having once been in travail and delivered of a diagnosis, have nothing left to do but consult their books or their memories for the indicated remedy; this method of practice, I suppose by far the most common and

certainly the most degrading of all, is routine therapeutics. There are a few physicians, however, who look upon each case as to a certain extent *sui generis*, and who bring to its relief not only the results of the experience of the past and the experiments of the present, but also a personal opinion of the needs of the particular case, and who, so far as they are let, endeavor to do what a sound training, an impartial judgment, and an active conscience command; and this seems to me rational therapeutics.

I am aware that what I have said has been said before, and much better than I can say it. In fact, something like it was said fifty years ago before this Society by Dr. Jacob Bigelow, whose later writings repeat and emphasize the same idea. "It is the part of rational medicine," said he, "to require evidence for what it admits and believes. The cumbrous fabric now called therapeutic science is, in a great measure, built up on the imperfect testimony of credulous, hasty, prejudiced, or incompetent witnesses. . . . The enormous polypharmacy of modern times is an excrescence on science, unsupported by any evidence of necessity or fitness; and of which the more complicated formulas are so arbitrary and useless, that if by any chance they should be forgotten, not one in a hundred of them would ever be re-invented. And as to the chronicles of cure of diseases that are not yet known to be curable, they are written, not in the pages of philosophical observers, but in the tomes of compilers, the credulities of journalists, and the columns of advertisers. . . .

The exaggerated impressions now prevalent in the world, in regard to the powers of medicine, serve only to keep the profession and the public in a false position, to encourage imposture, to augment the number of candidates struggling for employment, to burden and disappoint the community already overtaxed, to lower the standard of professional character, and raise empirics to the level of honest and enlightened physicians."

There existed, indeed, in that day something that has fallen into disrepute in ours, and that is a belief in "heroic" medication. Active drugging does, to be sure, exist in plenty, but "heroism," in the sense of the exhibition of large quantities of nauseous medicine, no longer fetters the profession or frets the patient. Neither form of error, however, was spared by Dr. Bigelow's incisive pen. But this paper will not have altogether failed to be of service if it does no more than call attention, in these days of polypharmacy and superpharmacy, to truths which may have gained theoretical acceptance but failed of practical realization. The lesson cannot be said too often. No less an enthusiastic therapist than Roberts Bartholow has stated within three months, that "the science of therapeutics should be made more certain. This is a branch of medical study which is not cultivated as it should be, and a true knowledge of drug action is not widely enough diffused. The acquisition of this knowledge is greatly hindered by the mass of old prejudices which still cling to this science and impede its progress, like the barnacles on the hull of a ship. All this complexity and superfluity of olden times must be wiped away; at least two-thirds of the pharmacopœial preparations could be dispensed with, and scientific therapeutics would thereby be the gainer."

There appeared last fall a series of delightful reminiscences, personal and professional, from the pen of an honored member of this Society, whose ripe years

included a half-century of practice, from Laennec and Louis to Koch and Pasteur, who had seen the swift-handed surgery he was taught revolutionized by the discovery of ether, and who might have heard the then novel doctrine of the self-limitation of disease from the lips of its learned propounder. In his earlier days, to use his own words, "a doctor's call meant something. An emeto-cathartic inevitably followed the first visit, no matter what the disease might be." The doctor "was called to do something at once, and he generally did it." His "course was simple and easy. He had to be 'heroic' only with the lancet and heavy doses, and his responsibility was cancelled. If successful he had been lucky in hitting upon the right medicine; if unsuccessful, it was the patient's misfortune. . . . But, alas for the cautious or unheroic practitioner. His failures were accounted no better than homicides, if not indictable." When a man of this training and experience, at the close of fifty years of practice, publicly suggests as a fitting and self-desired inscription for his tombstone, "He cured the sick without drugs," it has occurred to me that we might be justified in occasionally neglecting to do something.

Yes, I repeat, if by therapeutic nihilism is meant that we are mere lookers-on in Vienna, none of us will admit that such is an attitude we keep or desire. But if it is charged, that in the presence of disease we maintain at once a reasonable faith and an honest scepticism; that we decline to fire at random and with all sorts of shot, in the childlike hope that Providence will kindly let us hit something; that, in short, we intend, as St. Paul advised the Thessalonians, to prove all things and hold fast that which is good,—then there are those among us, let us trust, who stand just there, unmoved by the ebb and flow of the tides of ignorance and prejudice. And why not? For, as Van Swieten said, a century and a half ago, in his Commentaries on the Aphorisms of Boërhaave, the learned professor of Leyden: "What will be the idea of the best Physician in future times we know not; but he is to be reckoned a good Physician now, who makes use of all the assistances by which, through the happiness of the present age, the art of Physick has been improved."

Clinical Memorandum.

UNUSUAL SUSCEPTIBILITY TO SEDATIVE REMEDIES.

BY ALBERT N. BLODGETT, M.D.

THE following case, which recently came under my observation, presented some features of peculiar interest, and I venture to record it:

The patient, a lady of twenty-four, in good health and free from any unusual tendencies, consulted me in relation to an acute neuralgia affecting the distribution of the facial nerve on the left side. Quinine in considerable doses, averaging ten grains a day for a few days, was sufficient to entirely relieve the distress, and the patient was for a time free from all disturbance.

The lady was in the fifth month of pregnancy, and again consulted me on account of a burning and smarting sensation following urination, which was very frequent, and occasioned much suffering from a constant

pain in the back, hips, and at the orifice of the urethra. The patient stated that she had been for a time a guest at a well-known watering-place, and that many of the ladies there were affected in a similar manner, and that the general opinion had been formed that this was in some way due to the waters, although many of the guests had been formerly at the same place, and had never had occasion to complain of the action of the waters. The pain and distress were so severe that my patient left the place, and after some delay, in the hope that the trouble would spontaneously subside, consulted me, as above stated.

I made no local examination, but prescribed a solution of bicarbonate of soda, containing to each teaspoonful two grains of potass. brom. sodii. brom. and chloral hydrate, with the addition of one-twentieth-gram of morphia. This solution was prepared at six o'clock in the evening, and the patient took one teaspoonful at half-past six, one at half-past eight, one at 2 A. M., and one at 8 A. M. She slept in the intervals, but awoke at the times stated, and, as she was alone, there is no other probable way in which the medicine could have been administered, except by her own hand. At eleven of the day, she rose and dressed and walked about her apartment, but feeling very drowsy and becoming rather frightened, she telegraphed for her husband, who came to her at four o'clock. She was at that time sleeping soundly, could with difficulty be awakened, and had no idea of the time, of her surroundings, or of the circumstances attending her condition. I was quickly summoned, and on reaching the patient found her dressed, seated in an arm-chair, and sleeping, with her head resting upon the back of a chair. Her color was good, there was no lividity of the skin, the breathing was easy, free, and natural, the pulse 72 and free, the skin a little cool, pupils dilated and sensitive, and the patient's condition was in no way otherwise changed from the appearances of ordinary healthy sleep. On trying to arouse her, there was no response to gentle measures, but by more vigorous methods she was sufficiently roused to open her eyes, to answer questions, and to give an account of her experiences. Two drops of the ordinary tincture of nux vomica were prepared in a little water, and the patient made to swallow it. She was then forced to walk, and after a little time could stand, and was able to move by herself. On being left alone, she at once sank down without regard to her situation, and was immediately asleep, and had to be violently roused. About five minutes after taking the nux vomica there was a distinct tetanic convulsion of a moderate degree of intensity, which was not, however, repeated. She now began to show increased animation, and was soon able to go about unassisted, and at my advice was taken to walk in the open air. She had eaten nothing during the entire day, and after a half-hour was able to take a good dinner, and from this time was entirely free from any soporific influence.

The patient said afterward that she had once before been similarly affected by a small amount of medicine given by a physician which contained bromides. She did not know the composition of the present medicine, and had no idea that it contained these articles. There was no appearance of hysteria, and the case seems to be one of unusual susceptibility to the action of a class of drugs which are usually supposed to be comparatively mild in character, and to be safe in large doses.

Reports of Societies.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

C. M. GREEN, M. D., SECRETARY.

MAY 12, 1888, the President, DR. WILLIAM L. RICHARDSON, in the chair.

DR. W. E. BOARDMAN read

A REPORT OF THE CASES DELIVERED AT THE BOSTON LYING-IN HOSPITAL DURING THE THREE MONTHS JANUARY 1ST TO APRIL 1ST, 1888.¹

DR. LYMAN remarked that a large proportion of the cases had albuminuria, and asked if any of these cases presented serious symptoms. The reader replied that there were no symptoms in any case except one: that patient had eclampsia.

THE PRESIDENT said that fourteen years ago, when he supposed that albuminuria meant approaching eclampsia, he had made a series of observations bearing on this subject. The urine of every patient was drawn by catheter before labor, when time permitted, and examined: in the first thousand cases albumen was found in forty-three per cent.; but in the vast majority of this proportion nothing else was found, and the albumen disappeared soon after labor.

DR. EDWARD REYNOLDS said: I have been especially interested by two points in Dr. Boardman's report. He finds, if I understood him correctly, that in seventy-seven primiparæ the average duration of the second stage of labor was only one and one-quarter hours. This is somewhat shorter than is usually reported, and is the more remarkable from the fact that in a hospital where the house physicians do not apply forceps unless in the presence of the visiting physician, the length of the second stage is always prolonged in operative cases by the time consumed in sending for him. Should further statistics support this average, it would lend additional emphasis to the opinion held, I think, by most of us, that a three-hour second stage is long enough for any woman, and that if at the end of two hours the head is within the pelvis, and is not advancing, it is better to apply forceps at once in advance of the coming exhaustion, rather than to delay until mother and child are in a precarious condition; and I think it is evident that in so doing we are following rather than supplanting nature, for if the powers of mother and child have been arranged for resisting the strain of the normal second stage of from one to two hours, it is plain that any considerable further delay must imply a drain upon that surplus strength, the expenditure of which results always in exhaustion.

I wish further to suggest a remedy for the difficulty which Dr. Boardman found in adjusting my axis-traction rods to the forceps in one case. As a rule nothing is easier than this attachment, but in a few of those cases in which the head is free above the brim of a transversely contracted pelvis I have found the fenestræ so high and the blades so closely approximated to the pelvic wall that there was not sufficient space for the passage of the rods; but, if in such a case the forceps be unlocked, the fenestræ are found

to be then within reach, and the attachment of the rods again becomes a perfectly easy matter. I have now used the rods in five such cases, and have seen them used in equally difficult cases by two other physicians, neither of whom had ever applied them before, and in no case was there any real difficulty in attaching them. I cannot help thinking that by this expedient they can be applied in any case which is at all suitable for forceps.

DR. J. P. REYNOLDS reported some cases of interest.

DR. SINCLAIR thought the reader should be thanked for his teachings of early delivery in placenta prævia and eclampsia.

DR. FIFIELD, present by invitation, asked whether any members had had experience with veratrum viride in eclampsia. Jewett, of Brooklyn, had lately recommended the drug, and had found that subcutaneous injections of 15, 25, or 30 minims had a wonderful effect in quieting the convulsions. Some years ago Dr. James Sullivan, of San Francisco, recommended veratrum viride combined with grain one-quarter of morphia: Dr. Fifield himself had never known the drug to be used here.

DR. MINOT asked if venesection had disappeared from among our various methods of treating eclampsia: he had had occasion to bleed on several occasions, and thought bleeding a valuable expedient in some cases. Certainly a large amount of urea might be removed by the bleeding; and if the blood is filled with poison, the removal of much of it must be a desirable thing.

DR. J. P. REYNOLDS queried whether a single bleeding might not be advisable when in primiparæ there are difficulties of dilatation: would not dilatation be facilitated thereby?

DR. C. E. STEDMAN had, in early years, practised venesection with success, even in one desperate case in which the patient was already anæmic, and who, he believed, was saved by free bleeding. The indications he had followed were headache and a full bounding pulse: he bled to twelve or sixteen ounces. Venesection was now largely superseded by anæsthetics.

DR. FIFIELD remarked that if done at all bleeding should be done freely. The rapidity of the pulse before a convulsion had probably led to venesection, and then to opium; but veratrum viride will also slow the pulse, and ought to give good results.

DR. BLAKE suggested that in successful results attributed to bleeding or veratrum viride the happy issue was in great measure due to the termination of the labor.

THE PRESIDENT said that those who bleed in eclampsia use other treatment at the same time, and he believed the success was due to the other treatment: the same was true of veratrum viride. He had seen many cases of eclampsia in consultation practice; but only one had proved fatal, and that one was bled.

DR. LYMAN said that before ether was known opium was looked upon as a bad thing in eclampsia, and the convulsions were treated by bleeding: then came ether. Then the profession, in New York especially, gave morphia: now come morphia and veratrum viride in combination. All these remedies are probably good, singly or in combination according to the case: there is no one remedy for all forms and conditions of eclampsia.

¹ See page 196 of the Journal.

BRITISH MEDICAL ASSOCIATION.

GLASGOW MEETING, AUGUST 7-10, 1888.

DR. J. T. BANKS, of Dublin, the retiring president, occupied the Chair, and opened the 56th annual meeting with a few remarks. He congratulated the association on their meeting in Glasgow, now become the second city of the empire, and assured them a hospitable reception in the ancient University. The past year had been one of prosperity in the association. One year ago when he became president the membership was 11,000; now it is 12,000. He congratulated the association heartily on the selection of Prof. W. T. Gairdner, of Glasgow, as president for the present year, and introduced that gentleman to the association.

PROFESSOR GAIRDNER, on taking the Chair, said that he would not boast on putting on the armor; it was not the time. It was the occasion, however, for Professor Banks to boast, for his work had been accomplished. Professor Gairdner said that though it was too early to boast, it was not too soon to be thankful for the honor conferred on him by the association in electing him to the Chair.

Council reported new branches, as follows: Perthshire, Nova Scotia, and Cape Town, South Africa. Two others in Tasmania and Malta are about to be formed. The number of members on the register last year was 11,107. During the year 359 resigned, 132 died, 1649 new members were elected. Present number 12,265. Income £28,680; expenditure £26,060 17s 9d. Surplus £1,619 2s 7d.

Inebriates Legislative Committee made a lengthy and encouraging report, which was adopted. They had changed the name of the act from Habitual Drunkards' Act to Inebriates' Act. Many declined to be called habitual drunkards, yet acknowledging themselves inebriates, and many were not habitual in their dissipation, but periodic. The legislation is now permanent in place of the temporary act for ten years which has just expired. In Great Britain, as well as in the United States and in the colonies the move towards this object has been originated among medical men.

Services were held in the old cathedral, which was crowded to its utmost with doctors, who sang the One Hundredth Psalm with a will. The sermon, by Principal Caird, was a counterblast to modern materialism. He dwelt at some length on the arguments to be deduced from death and the loss of reason, and concluded by two objections absolutely fatal to the materialistic theory of the relation of matter to life. First, the theory was in irreconcilable opposition to the very law of the conservation of the energy on which it professed to rest. Further, the fundamental objection to all material theories was that they begged the question at issue.

A resolution, stating it to be the opinion of the association that Irish and Scotch diplomas should possess the same privileges as diplomas from other divisions of the United Kingdom, which was brought up at the Dublin meeting one year ago, passed unanimously.

PROF. W. T. GAIRDNER, of Glasgow, then delivered

THE PRESIDENT'S ADDRESS.

He took for his subject "The Physician as Natur-

alist." In no other language, he said, besides our own has the title physician or physicist survived and threatened to engulf the term medicine, the art of healing. The physician is regarded as a student of nature. It is hard to find where this idea first took shape.

For a series of interminable ages, from the time, perhaps, of Hippocrates downwards to what we call the Dark or Middle Ages, the tradition has continually existed that the healer or physician of the highest class ought to be in every sense of the word a student of nature, a naturalist, or perhaps a man of science, and that he is trustworthy as a healer or physician chiefly in proportion to the confidence reposed in him as a naturalist, that is a humble, reverential and exact follower or student of nature. That magnificent opening of "Novum Organum" describes man as the minister and interpreter of nature. He must be, according to Hippocrates, the servant of nature. Hippocrates was the first to observe nature and her works. This term, servant of nature, according to Galen, will only apply to the true healer, and not to the mere druggist, who might be called the enemy and adversary of nature and the sick.

The physician of the middle ages, so far as we can judge of him from literature, while retaining the name, was in a very small degree, if at all, cultivated according to the type. In fact, anything like original research was dangerous on his part, and liable to be punished by imprisonment, perhaps the faggot. I apprehend that the physician of the middle of the seventeenth century in France unless caricatured out of all recognition by Molière, must have been altogether the most stupid, pompous and brainless formalist that ever in any age practiced the art under a learned title. Even down to the last century men of the type of Minacre and Cairns in the Royal College of Physicians in London, greatly predominated over the men of Science as exemplified by William Harvey. The physician *natura studiosus* was in danger of being wiped out, but the revival came, and in the Scottish universities chemistry as a science, and perhaps botany have never lost a distinctive place in the medical curriculum from that day to this. I wish I could say the same of physics proper, natural philosophy as we call it, which has been, comparatively speaking, left out in the cold. During the one hundred years past Scottish universities have been, with more or less success, laboring, on the whole, to build up again the great and noble idea of the physician as *natura studiosus*, a nature seeker, *natur forscher*. It has been claimed that the spirit of modern science is ungenial and hard, even pitiless, and therefore not at all fitted for the ministrations of humanity, that it tends to make the suffering man a mere case, a thing to be observed and noted rather than a man of like passions with ourselves, and therefore to be treated with consideration and sympathy. There may be just a grain of truth in this, yet all the evils inflicted on suffering humanity by the physician as scientist have been but a drop in the bucket as compared with those which have sprung from the too lavish adoption of traditions in which there never was any trace of the scientific spirit at all.

When we consider that the most of the great advances of the present day, stethoscope, microscope, laryngoscope, ophthalmoscope, sphygmograph and electricity involve applications of pure physics, which

are neither very remote from practice or yet very easily mastered by the beginner, and that in the case of electricity and other physical reagents, even heat and cold, we are every day extending the domain of these sciences in therapeutics, and still more, perhaps, in preventive medicine and sanitary science, their claim for an extended recognition in teaching seems to be enormously enhanced. I am persuaded that the physical laboratory will become an absolutely essential preliminary step in the education of the physician of the future, and that those who have not undergone this training will be hopelessly distanced in the race.

He lamented the unprepared state in which most boys and young men leave school as regards the most elementary truths of physical science and the observation of nature. Twelve or fifteen hours per week are devoted to classics, and two or three hours are considered sufficient for science in most schools. This renders more than ordinary care necessary to insure at the very beginning of the medical education the preparation in physics which will shortly become all and in all to the true physician.

No child is too young to take in the a, b, c of science, the manner how and the reason why, as Kingsley puts it. Children should not be taken from the age of six from learning of nature and have their noses poked into books and papers for ten long years, till their eyes become myopic and their brains suffer a corresponding deformity.

Religio medici was next considered. *Ubi tres medici, duo atheni*, is a proverb, the source of which it is impossible to trace, but which is evidently the growth of the mediæval period. This proverb is a calumny and a reproach. Yet to be accused of atheism in the Middle Ages might be the reverse of a real reproach to any man or set of men; to be tabooed for atheism has often been a compliment of the highest order.

The physician of the future, he believed, would be much more, instead of less, inclined to make his study of the Bible than hitherto. He will study it in the spirit of modern scientific freedom and historical research, and thus only, it seemed to the speaker, that the reconciliation of science and religion can ever be brought about.

PROGRESS OF SURGERY DURING THE LAST HALF CENTURY.

SIR GEORGE H. B. MACLEOD, of Glasgow, Scotland, took for his text in his address on Surgery the advances made during the reign of Queen Victoria. It was with pardonable pride that they spoke of medical science in this northern land and with no department of the one great and indivisible art have the names of Scotchmen been more honorably associated than with that which he represented. He cited the names of Lowe, Cullen, Black, Hope, Gregory, Graham, Granville, Pattison, Ure, Hooker, Balfour, Lister. The immortal Hunters were educated here. While in England 1 in 5,000 attend the Universities, in Scotland 1 in 500 avail themselves of this privilege. Of the 1,629 medical students registered last year in Great Britain, 666 belonged to the Scottish schools. After briefly sketching the works of the great masters in anatomy previous to 1847, Sir George took up the subject of "Anæsthetics and Antiseptics," which he considered to be the most distinguishing features of

the period under review. They are both "epoch-making" discoveries. Each has done almost as much for surgery as the discovery of hemostatics, and when combined, may, I think, be said to excel even steam and electricity in their gracious benefits to mankind. Velpeau said in 1839, "All research for any agent to destroy pain in operations is a mere chimæra and unworthy of further consideration." This was seventeen years before the great discovery. Suddenly, however, the riddle was solved, and by one who remembering the experiments of Humphrey Davy with nitrous oxide and sulphuric ether, dimly perceived the use they might be put to in surgery. Many of us can still recall the enthusiasm which that discovery evoked and the unbounded anticipations which it suggested. Chloroform was soon brought into use by Sir James Simpson. The relative merits of these and of other anæsthetics have not yet been determined. He himself, after fairly trying most of the agents in use, employs chloroform. He gives it in all cases and has never had an accident but once, when giving it to an epileptic he took a fit and died. It is unrivalled for speed and ease in giving. That it needs no apparatus but a towel is a great argument in its favor. He never measures the quantity used but exhibits it freely and takes the color of the lips and the respiration as his chief guides. Making the patient count at the beginning of the administration is a most valuable aid; and Nelaton's inversion of the body with artificial respiration is the surest mode of resuscitation in danger from failure of the heart. Anæsthesia has changed the whole aspect of surgery. "The lion heart" is now no more necessary for a surgeon. It was in this school that antiseptic surgery was first practically applied, so he may be pardoned if he speaks warmly and enthusiastically of that invaluable discovery. The fundamental principles on which it rests remain unassailable, and it has led to practical results, not alone in its immediate effects, but in the discussions and studies which it has produced, which have in an extraordinary degree, widened the domain of our art, diminished the sufferings, and saved innumerable human beings.

The study of micro-organisms which a quarter of a century ago were mere microscopic curiosities, has become a great and enthralling pursuit and has opened up a field of practical application, not in medicine and surgery alone, but hygiene and public health, though the present tendency is perhaps to exaggerate the influence of microbes. What was lately but a dream is capable of realization in the near future; namely, that every zymotic disease and all those which owe their origin to putrefaction and fermentation will finally be stamped out.

Asseptic surgery in its practical application has amazingly augmented the value of the surgeon's services. Pure drainage and entire rest, both physical and physiological, demand the attention of the surgeon. Of the many germicides he prefers the bichloride. Dry and elastic dressings have been most valuable improvements.

Hospital organization, owing to the misfortunes of the Crimean War and the cholera epidemic of 1852, have received more attention during the past twenty-five years than during the previous seventy-five years. That intra-mural hospitals are on their trial cannot be doubted. The smaller establishments in the rural districts meet the modern ideas more nearly than the

huge piles without space or pure air, which we find in the cities. Much good has been done during late years by the use of the ambulance wagon, after the American method, for the care of the sick and the instruction of the many in the care of the wounded.

To further abridge his address would be but to mention a long list of improvements.

An address before the general sessions which attracted unusual attention was that on

BRAIN SURGERY,

by WILLIAM MACEWEN, M.D., of Glasgow.

He said lesions of the head had at all times held a prominent place in the annals of surgery. The operations of primitive surgery were simple and chiefly directed to the superficial parts, the skull and its membranes. The brain inspired fear, as it was intimately associated with the seat of life, gave lodgement in its recesses to the soul and was surrounded with all the mysticism which speculative philosophy inculcated. From the day of Pott to our own, there seemed to be a growing conviction not only of the impotence but the positive harmfulness of active interference, so that the trephine was regarded as an almost obsolete instrument. Such was the state of surgery till 1870. It was necessary first to adopt means whereby immunity from the inflammation which so constantly attended brain lesions could be secured, and secondly, to endeavor to gain a better physiological knowledge hoping that light might be shed upon the localization of cerebral lesions.

The extended physiological knowledge obtained by the untiring efforts of such workers as Hughlings Jackson, Fritsch, Hitzig, and Ferrier, enabled cerebral lesions to be more accurately localized, while experience showed that by preserving aseptic the parts operated on, surgical interference could be robbed of its chief danger.

Here the history of a case was given in which the symptoms of focal cerebral disease led to diagnosis of lesion in Broca's lobe. This, unfortunately, had a fatal termination owing to the refusal of the parents to permit the operation, which was demonstrated after death, would have saved the life of the patient.

Dr. MacEwen then gave details of other cases, passing from the consideration of the Initial History of Cerebral Surgery to the Consideration of a Few Points regarding the Present Aspect of Cerebral Surgery.

His answer to the question whether the localizing motor phenomena are reliable guides to the diagnosis of cerebral lesions situated in the motor cortex, is unhesitatingly affirmative. Each case, however, must be studied upon its own merits. The various points of reliance should be tested wherever possible, by instruments of precision. When injury has been inflicted on the surface of the cerebrum, followed by plastic effusion and cicatricial formation, the superficial substance is apt to become soldered to the membranes, which in turn may become soldered to the skull, or if they should be detached the brain may become directly adherent to the bone by means of cicatricial adhesion. Thus the surface of the brain becomes anchored to its rigid walls. The gray matter of the cortex immediately surrounding the cicatrix is apt to become unstable, and traumatic epilepsy has thus resulted. If the cortical irritation be continued, encephalitis is sometimes produced and operation has

occasionally hastened the fatal issue, encephalitis rapidly becoming general.

In the majority of instances the surgeon makes no effort to fill the gap caused by osseous defects in the cranial wall. Since 1873, he has carefully preserved the portions removed from the skull, rendered them aseptic, divided into minute fragments, and reimplanted. These have grown wherever there has been immunity from suppuration. A most interesting case operated on four years ago was shown at the demonstration in the Royal Infirmary. Nearly one-half the left anterior portion of the skull was broken into fragments, which were mixed with brain-substance, shreds of membrane, hair, *débris* of lime and blood. The pieces of bone were all made aseptic, replaced, and, with the exception of two fragments, grew and now form a firm, osseous wall.

Briefly alluding to another portion of the nervous system, he said that certain sensory and motor phenomena due to lesions within the spinal canal are amenable to operations which are attended by a measure of success, which offers a prospect of relief to a class of sufferers hitherto regarded as hopeless. The spinal membranes and cord itself can be exposed, and neoplasms and encroachments upon the lumen of the canal may be removed therefrom without unduly hazarding life. In 1883, he first successfully operated thus for the relief of paraplegia due to angular curvature of the spine.

In conclusion, the distinguished speaker called attention to the fact that the same phenomena by which we are now able to recognize and locate cerebral lesions were exhibited by patients who came under the eye of our surgical predecessors, who were so hampered by the inculcated physiological dogma of the time that the facts were reflected from their brain as objects from a mirror, and their true significance never dawned upon them. There are all around us phenomena, each with its hidden truth obtrusively impressing our senses, and how do we fail to read their riddle?

A number of the patients operated upon by Dr. MacEwen were in attendance for examination by any of the members. All, both juveniles and adults, were in good health, the latter all able to be at work.

Dr. JAMES C. HOWDEN, of the Sunnyside Asylum, Montrose, the President of the Section of Psychology, in his address, touched on the lesson derived from the few cases of insanity in which surgical interference has resulted in recovery, and proceeded to discuss the medical and mental treatment of insanity. Insanity was a group of diseases of the most varied kind. Experimental teaching had done much good in showing the mischief of indiscriminate drugging, but it was apt to breed a fatalistic turn of mind. The importance of treating bodily diseases was duly recognized, and the individualization of patients and special medical treatment insisted upon. The training of attendants and nurses was now being carefully attended to. The moral treatment, though somewhat unfortunate in its sound, being somewhat Pharasaical, and implying the possibility of other means being immoral, was of much benefit, and there were few cases in which it could not, some time or other, be made use of. He preferred to call it mental treatment, as it was the effect of mental influence. It seeks to remove the patient as early as possible from the mental environments which produce or aggravate the disease. It seeks to distract the mind from

morbid feelings and thoughts, and seeks to occupy it with healthy employment and recreation. The prevention of insanity in its relation to civilization was discussed. The survival of the fittest would tend to eliminate insanity, and the highest civilization was the state which encouraged insanity by protecting the weak, and, at the same time, causing overpressure and injury to the brain. If the gospel of health could reach a civilized people, it would have a powerful influence in the prevention of insanity. He would look forward to the time when the brain would be so highly organized that false judgment and sophistical reasoning would be impossible, except among the imbeciles of the race, and that, perhaps, a perfect state of health would be reached when men would be unconscious of themselves. He then recounted the changes which had occurred in the Scottish asylums during the past thirty-five years.

CLASSIFICATION OF DISEASE BY MEANS OF COMPARATIVE NOSOLOGY

was the subject of the address in medicine, by DR. CLIFFORD ALLBUTT, of Leeds. He thought disease should be classified by affinity which should supersede our present system of classification by clinical features. The advances made in comparative nosology, a term rarely heard, have been less than should have been the case.

As the nervous system develops in the higher animals, all diseases must take on a change of type, become more systematic, more complex, more sympathetic with disorder elsewhere; must tend, in a word, to primary or secondary neuroses. The diseases of the lower races of men will differ, and, as a matter of fact, do differ from those of the higher.

In classification by affinity four methods of inquiry must be followed; namely, the hereditary, historical, geographical, and experimental. In the records of hereditary disease we find that observation has been almost wholly directed to the detection of the recurrence of the same form of malady in one family tree; but if we desire a scheme of all the fatal and non-fatal diseases found in the same stock, it cannot be furnished. The inherent tendency of organisms to vary—"Nature's bent for inequality," in the words of Matthew Arnold, is well known, if not yet explained.

The historical method leads to the philosophical in all studies, and no less in nosology: unhappily, this study has not yet emerged from the prehistoric period. In the comparison of human disease as it now exists, with its past history, we must remember that in the ruder stages of man morbid variations were constantly eliminated in the struggle for existence. But we begin to see the converse of this condition when human society attained a high degree of development. Natural selection is modified by deliberate counterplots: bad strains are preserved, which, in former times, would have died out. However, bodily improvement may be sought at the cost of the higher mental and effective organizations. Dr. Allbutt gave an interesting *résumé* of racial characteristics in disease. He finds the Dutch rarely the subjects of irritative neuroses; the Scotch, likewise, have a relative rarity of purely nervous diseases, but cancer is more common in Cumberland than in any other of the border counties. Apoplexy and palsy are more common among white than colored people, and among the Germans than the Irish. Among the Indians, diseases

of the nervous and circulatory systems are rare, but scrofula and consumption common. The Englishman is patient and courageous under sickness, the Scotchman lies down and gives way under the same conditions, while the Irish Celt is fired with alarm, and magnifies by his vivid imagination both his sickness and recovery. The study of racial peculiarities is intensely interesting, but the variations are known to be manifold: the Arab is not liable to tetanus; the poison of *beriberi* does not attack Europeans until they have lived in its district for a length of time: the resistance of negroes to yellow fever is common, as is also their relative immunity from sunstroke and paludal fevers.

In speaking of the geographical method, Dr. Allbutt queried: How have the morbid varieties of man arisen? We can only answer in general terms that we must have especial regard to areas long undisturbed, and, as we must not confound nations with races, we must not confound kingdoms with physiological areas. As in various families, so in various regions, we must work out in each not only the prevalence of disease taken singly, but more especially the schedules of its diseases, noting both coexistence and respective degrees of intensity.

The experimental method will teach us that drugs and poisons will not vary in their clinical effects on living beings by gradual augmentation of differences, but by leaps and bounds, as musical scales respond to scales of vibration. It teaches us that clinical types can be no basis of nosological classification, as we rise higher and higher in the plains of function we enlarge the office of inhibition.

SIR WILLIAM AITKEN, professor of pathology in the Army Medical School at Netly, made the address before the Section on

PATHOLOGY.

Sir William took peculiar gratification in being asked to fill this Chair, on account of his previous connection with Glasgow University. In pathology we have a link which connects us with the science of medicine as distinguished from the art or practice of it; but pathology must be studied as a branch of biology in the widest acceptance of the term; and when medicine was thus thought of as a pure science it implied a "pathology" which had no more necessary subservience to practical ends than zoology or botany. Research is essentially the method of working in pathology. The establishment of the "cell theory" in physiology was swiftly followed by a "cellular pathology" as its logical counterpart. It is unquestionably to Virchow that is owed the great advance by which histology came to take first place as aid to elemental pathology. The direction in which the greatest advances had been made in this section during the present era consisted, (1) in a better appreciation of the "processes of disease," (2) in an increasing importance attached to morbid anatomy, physiology and etiology.

He referred to the introduction of the clinical thermometer, which up to 1864 had no home in England. Even now, with all its usefulness, the theometric observation of disease is but in its infancy, or at least in its youth.

The doctrine of evolution in biology had acquired an importance which he believed especially capable of illustrating the pathology of constitutional diseases.

The doctrine in pathology must be accepted as a part of biology that the laws of variation are ever operative in connection with the origin and development of disease. There are good grounds for believing that new diseases as well as old are in constantly progressive stages of development, although the slowness of their evolution may make us unable to appreciate them.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.¹

ALBERT N. BLODGETT, M.D., SECRETARY.

MEETING, February 8, 1888.

DR. MORTON PRINCE read a paper on

OPHTHALMOPLÉGIA EXTERNA.

DR. O. F. WADSWORTH said: I listened with a good deal of interest to Dr. Prince's paper. I would like to say that, while Hutchinson was the first to propose the name of "ophthalmoplegia externa," and was the first to publish a case in which the nuclei were shown to be the seat of the affection, Graefe presented a series of these cases some ten years earlier. He was at first disposed to consider that there was a tumor; but afterwards gave that up, and supposed some central lesion, although he did not know what it was. I think there have been a number of cases observed besides those which Dr. Prince mentions. The term "ophthalmoplegia externa" was proposed by Hutchinson, and was used by him in contradistinction to another class of cases which he called "ophthalmoplegia interna," in which the internal muscles, the sphincter iridis, and ciliary muscle, and, as he supposed, also the dilator iridis, were affected only. It is doubtful, perhaps, whether the dilator was affected in his cases. He referred the latter affection to disease of the ciliary ganglion.

It is interesting to note, however, that although Hutchinson made this distinction in a large proportion of the series of cases that he reported as ophthalmoplegia externa, and in the one case that came to autopsy, where the nuclear affection was demonstrated, the iris and ciliary muscle were affected. Although there are a certain number of cases where only the external muscles are affected without affection of the ciliary muscle and iris, and that condition has remained for a very long time (Graefe stated that he had seen one where for the greater part of the patient's life that condition existed), yet in the large proportion of cases the iris and ciliary muscles become affected, or other cerebral nerves, or nerves of the spinal cord.

Even after the external ophthalmoplegia has existed for a long time without change, other changes have been observed to take place. Then there are certain cases which recover. I reported a case a year or two ago where, with not complete, but partial paralysis of most of the external muscles in both eyes, without affection of the iris and ciliary muscle, and with optic neuritis, the muscles recovered their function entirely. That was a case apparently due to lead poisoning.

It seems to me that the less complicated cases of ophthalmoplegia externa must be considered, most of them at least, as with very little doubt nuclear; unless, as Dr. Prince suggests, we consider that there is

a cortical lesion; and we have no knowledge by which at present, we can make cortical localization for the movements of the muscles of the eye. It is very difficult to understand how complete paralysis of those fibres in a nerve-trunk which supply most of the muscles which that nerve goes to can occur, and other nerve fibres, going to other muscles, and running in that trunk, should be entirely unaffected, if the affection is one involving the nerve-trunk; and such cases are those of pure ophthalmoplegia externa. If it was only the oculo-motor that was affected, we might suppose with some probability, that, as has been shown in certain cases, the fibres of the ciliary muscle and iris run through the abducens; but when the abducens as well as the oculo-motor, or the muscle supplied by the abducens as well as the muscles supplied by the oculo-motor are affected, this explanation would not be valid.

Some of the cases with complete paralysis of most of the ocular muscles show immunity of other muscles besides those of the iris and ciliary body which are supplied by the same nerve. For instance, I showed at the Improvement Society, some eight or ten years ago, a man with locomotor ataxia, who had complete paralysis of all the muscles supplied by the oculo-motor, and that on both sides, including the iris and ciliary muscle, except the muscles that raised the upper lid. These latter muscles on both sides were unimpaired, apparently, in their function. At that time I was not familiar with the nuclear affections, but I think now that there can be little doubt that there was in that case an affection of the nuclei; I cannot understand how all the other fibres should have been completely paralyzed and the fibres going to the levators unaffected, unless the trouble were at a spot behind the place where the fibres become joined.

I should like to mention one other case where the ophthalmoplegia externa was complicated with other affections. It was a young man from Keene, N. H., whom I saw four or five years ago, who fell while getting from a sleigh, striking on the back of his head. He went home without assistance. He soon had double vision and dizziness (probably in consequence of the double vision), persistent headache and vomiting. He was somewhat somnolent and there was some mental impairment. At the time I saw him there was paralysis of a number of the muscles of both eyes, muscles supplied by different nerves. He finally died, and Dr. Bridgman sent me a report of the autopsy, in which were found a number of spots of softening, chiefly in the region of the pons but also in one or two other places in the brain. My probable diagnosis had been tumor in the region of the pons, and it is quite possible, I think, in the absence of microscopic examination, that the spots of softening were due to broken-down glioma. I have never myself seen a case of pure ophthalmoplegia externa that lasted for any length of time under observation.

I cannot give all the references, but I think there have been a number of cases in which the nuclei or parts in their immediate neighborhood were shown to be diseased, and where ophthalmoplegia had existed together with other symptoms.

DR. J. J. PUTNAM: I will detain the Society but a moment. I think this class of cases is one of extreme interest. We find that the third nerve is not a single organ, but that many nerve cells lie side by side which have different functions and different susceptibilities.

¹ Concluded from Vol. cxviii, page 431.

Furthermore, the fibres which make up the nerve do not all come from the same nucleus. Take, for example, those fibres of the third pair, which raise the upper lid. A portion of them seem without question to come from groups which lie lower down than the primary nucleus to which Dr. Prince has alluded.

It is difficult to criticise or say very much about a paper like Dr. Prince's, which one would need to examine previously in detail. This I hope we shall have the opportunity of doing in print. I will simply add what little I have to say which seems to throw any light upon the subject. I have seen a number of cases of this sort, none of them perhaps pure cases. It seems to me sufficiently evident from what has been said that the pure cases of paralysis of all the external muscles of the eye, without implication of any of the internal muscles, and without any symptoms which would indicate that other portions of the nervous tissues were affected, are very rare, although they certainly do seem to exist, and the patients carry the symptoms, as has been said, through life occasionally, certainly for very long periods.

One point of etiology seems to be interesting out of many interesting points. As Dr. Prince said, I think the original cases reported by Hutchinson were supposed to be of syphilitic origin, and this group of symptoms has rather borne the stigma of syphilis on it that seems to be undeserved. A number of cases have been reported as following diphtheria, and that, it seems to me, opens an etiology of great practical importance. These diphtheritic cases are probably cases of multiple neuritis, of which we have heard so much of late. Of that same origin, as I believe, was a case of partial oculo-paralysis with other symptoms pointing to lead poisoning, which I have had an opportunity to observe during the past year, and various other cases which have been reported from time to time. In fact, in quite a number of cases of multiple neuritis, reference has been made to paralysis, partial or complete, of various ocular muscles. A case has been recently reported also, where both facial nerves were diseased.

I have also seen within the past year a patient exhibiting partial paralysis of all the external muscles of both eyes, with almost complete, if not complete preservation of accommodation. The rest of the muscular system was not paralyzed, but became very weak, so that she arose from her chair with difficulty and came to my office attended by a friend, and she had sensory symptoms such as one sees in cases of multiple neuritis of moderate severity. These symptoms gradually improved I think, during the time that I had an opportunity of observing the case, six months or more, but they had by no means passed away, and the case had already lasted some months before I saw it. She told me, moreover, that she had had a similar attack some two or three years before, of shorter duration. It seems to me impossible that we should assume, in such a case as this, that the various processes were of central origin. It seems to me more probable that the whole group of symptoms were due to multiple neuritis, and so I think with some of the other cases.

I have also recently had an opportunity to see an exceedingly interesting case which may have been one, possibly, of haemorrhage into the pons; at any rate, where the muscles of the eye, external and internal, were involved.

There is one other point in reference to what Dr. Wadsworth has said. It is difficult to see how a portion of a nerve can be pressed upon without the rest of the nerve being involved. Referring again to the case which Dr. Prince mentioned where the only paralysis spoken of during life, I think absolutely the only one, was the loss of movement upward, and where a gummatous tumor was found destroying both of the third nerves in their passage from the *crus cerebri*; it seems to me that this paralysis upward is observed much more often and much more fully than the loss of lateral motion. At any rate, I have seen recently two cases, one of them in a patient whom I saw to-day at the hospital, where both of the third nerves were affected and no other nerves apparently, but in both cases, and particularly in the one that I saw to-day, although the lateral motions are now present to a very considerable degree, there is entire loss, so far as I could see, of motion either upward or downward.

DR. P. C. KNAPP said: I have listened with a great deal of interest to the paper of Dr. Prince, because I think that the whole subject of ophthalmoplegia externa and the question of disease of the nuclei in the bulb is of very great interest, as filling up the gap in our knowledge of the diseases of the motor tract, especially in its relations to the other diseases of the motor tract lower down, such as progressive muscular atrophy and bulbar paralysis proper.

It seems to me, too, that these cases can be brought into more or less relation with the diseases of the motor tract lower down. We know that in affections involving the limbs, for instance, we may have disease in the cortex itself; in the pyramidal tract, especially the internal capsule; in the anterior cells of the cord; in the nerve-fibre; or in the muscle itself. Unfortunately, in the muscles of the eye, we cannot test the electrical reaction, whereas in the arm we can say definitely by the change in the reaction whether the disease is on one side or the other of the motor cells in the cord. In the case that Dr. Prince has spoken of, where there was no disease whatever to be found in the bulb or in the oculo-motor nerves, it is possible, as Oppenheim and Siemering have suggested in a paper on pseudo-bulbar paralysis,² that there is a lesion, not in the capsule, but in the centre for the eye, wherever that may be—possibly in the angular gyrus.

We know, too, that disease in the nuclei will cause this paralysis, and, furthermore, we know that there is in all probability a peripheral disease—we get it in certain isolated muscles in syphilitic disease—where it has absolutely been found that there is a lesion of the nerve after it leaves the motor cell, just as we get a neuritis elsewhere. As far as I know, however, there is not a definite acute inflammatory affection in the bulb, or, at least, in the particular nuclei in the bulb, corresponding precisely to the acute inflammations in the cord. There are, however, a good many affections which may produce this paralysis. In the first place, there are many tumors which may destroy these cells—just as in the cord we may find tumors and other processes which will lead to the same paralyses which, in some cases, resemble progressive muscular atrophy; and so these nuclei in the bulb may be destroyed by tumors or haemorrhagic encephalitis. Moreover, disease in the floor of the fourth ventricle may destroy them by extension. Nor did I mean to imply that Erb's scheme was to be re-

² Berlin Klin. Wochenschr., 15 Nov., 1886.

garded as absolute, that the individual nerves could not be spared in the case of such a lesion. I certainly intended to make the exception that, in post-diphtheritic cases, for instance, where there was in all probability a neuritis, and in many other cases, you could get an involvement of the tissues of the nerves without involving the other structures. As Dr. Putnam has suggested in a recent paper on alcoholic neuritis by Witkowski,² it was found that the terminal branches of the nerves were first and most extensively involved. It would be explanatory of some of these cases where there was no affection of the internal muscles of the eye. They may be due, possibly, to the neuritis.

DR. WADSWORTH: May I add only one word? If we have a partial paralysis of some of the muscles supplied by the third pair, while the iris and ciliary muscle are unaffected, of course it is perfectly possible that that should be peripheral. In a considerable proportion of the cases of paralysis of the muscles supplied by the third pair we have such partial cases, and it is generally agreed to consider most of these cases as peripheral; but that is quite different from the case where there is complete paralysis of all the muscles, except the ciliary muscle and iris.

DR. PRINCE: I would like, in conclusion, to say one word, especially in regard to paralysis due to peripheral affections. If I understand Dr. Wadsworth, I think experience shows the opposite from what he contends. It is an every-day experience to see paralysis of some of the fibres of nerves without the remaining fibres being affected. We frequently find in peripheral neuritis some of the muscles supplied by the nerve affected, and others not. We find it frequently the case in disease of the facial nerve. It is common experience that, even with intense inflammatory affections, all the muscles are not equally affected.

In one of the cases referred to in my paper, we have a demonstrated case, with autopsy, where there was, on one side, almost complete degeneration of one of the nerves, while the nerve on the other side was only partially so, and yet on both sides nearly the same muscles were affected, and no more in the one side than in the other, and the iris and sphincter were not affected. Also, we have cases following diphtheria, where there were also other symptoms pointing to peripheral disseminated neuritis, there was loss of knee-jerk, etc., ending in recovery. There was another case with no paralysis, but only anesthesia, followed by recovery. This is experience. I don't mean to argue in favor of the peripheral nature of these affections. It is often difficult to make the diagnosis. In my case I cannot make a diagnosis, but I think that the view must be given up that the disease necessarily means nuclear affection. In regard to the inclusion of the other cases in this category, as Hutchinson did, where there is also paralysis of the ciliary muscle and the iris, of course every one knows that you can have that lesion with paralysis of all the muscles of the third nerve.

There is another case where there was only right-sided ophthalmoplegia externa, and where there was a softened portion extending the whole length of the brain-stem from the thalamus to the pons.

DR. WADSWORTH: It seems to me that we ought to distinguish between the cases of pure ophthalmoplegia externa, which Hutchinson departed from as soon as he had given the name, and cases complicated

by other nerve symptoms. In the cases of pure ophthalmoplegia externa, where the iris and ciliary muscle are not affected, and there are affections of the ocular muscles belonging to both eyes and more than one nerve, in such cases it seems to me we have a right to suppose nuclear lesion without going farther. If the iris and ciliary body are affected also, then we have to consider all the circumstances of the case: what muscles are affected, what other symptoms may be present. Of course, there can be no question that we may have multiple paralysis of the ocular muscles from peripheral causes, but that we can have peripheral causes which shall pick out all the fibres in a nerve-trunk which supply certain muscles, quench their function entirely, and leave the fibres in the same trunk supplying other muscles intact, I doubt. The experiments of Heusen and Voelckers on rabbits show, so far as physiological experiments can be relied upon, that, in them, at least, the centres for iris and ciliary muscle are farther forward than the centres of the other muscles supplied by the third pair; and there are pathological and anatomical cases which point in the same direction in man. So it is easy to understand how some nuclei are affected, and not others. I should say that multiple neuritis does not seem to present the pure cases of this disease.

DR. PUTNAM: I cannot entirely agree with Dr. Wadsworth. It seems to me that we do find the fibres of a single nerve picked out, as in cases of peripheral neuritis, where the whole system of motor fibres is sometimes degenerated, with entire destruction of the muscles which are attached, and yet the sensory fibres are not involved to any very considerable degree. Furthermore, any one who has examined the nerves of the acute degenerative cases which occasionally occur will have been struck by the fact that side by side with the fibres which are seriously involved are other fibres which are apparently entirely healthy. It is not necessary to suppose that of the fibres lying side by side some only are affected; the disease sometimes begins at the periphery and spreads inward. It is in this way that ataxia is sometimes observed without any corresponding degree of cutaneous anesthesia, the fibres coming from the muscles being affected out of proportion to the fibres coming from the skin. And where a cranial fossa is the seat of exudation, as I understand Dr. Knapp to assume, I think that there, also, it is admitted that the nerves may be involved in the most singular manner; some of them being entirely unaffected, and others partially affected.

DR. KNAPP: I am afraid that I did not make myself quite as clear as I would like to have done to Dr. Putnam. I meant that, except in the cases of peripheral neuritis, where the nerve-fibres could be affected independently of any surrounding tissue, this statement of Erb might hold true, that the other nerves in the neighborhood might be affected. I do not mean to imply that there may not be cases where the individual nerves are involved; again fasciculated sclerosis or multiple sclerosis may pass up into the nuclei; and, finally, there probably may be, as shown by autopsy in Westphal's case, a degeneration of these special cells precisely similar to the degeneration of the cells in progressive muscular atrophy or in bulbar paralysis. There are probably two classes of these cases of nuclear disease: those where the affection is accompanied with symptoms of tabes, and those where it is an isolated disease, or with other degenerative process

² Archiv. f. Psych. u. Nervenkrankheiten, xviii, 809, 1887.

in the motor tract, the true progressive bulbar paralysis, and progressive muscular atrophy.

The acute form of polioencephalitis generally comes on in apoplectic form, and is attended with a certain amount of paralysis of the limbs. The differential diagnosis between the cortical and nuclear form and the form from peripheral neuritis is, of course, not easy. Neither is it always easy to differentiate it from some possible lesion higher up, or from pseudo-bulbar paralysis; at the same time, there are certain points which may be considered, which will, at any rate, help in the diagnosis between the peripheral and the nuclear forms.

In the first place, where only a single one of the ocular muscles is paralyzed, it is, I think, rather more likely to be peripheral than to be nuclear. Where a good many muscles are paralyzed, we must bear in mind another point brought forward by Erb: In the first place, to produce complete ophthalmoplegia, there, of course, must be a paralysis of the three nerves, the oculo-motor itself, the trochlear, and the abducens. Now, a peripheral lesion which involves all these three nerves, excepting, possibly, the post-diphtheritic neuritis, which may pick out the nerves themselves, without the surrounding tissue, would also involve the fibres for the internal muscles of the eye in the third nerve; and, if it were in the orbit, we should expect that the upper branch of the fifth nerve, and also the optic nerve, would be involved. We would thus get optic neuritis, neuralgia, and anæsthesia of the upper portion of the fifth, etc.

In the fossa of the skull, however, we have a different state of things. Disease which would be sufficiently extensive to take in the fifth, sixth, and fourth nerves in the middle fossa of the skull, which comes up to the upper portion of the pons, must in all probability take in the whole of the fifth, so that we should find affection of all the branches of the fifth nerve; whereas disease farther back, sufficient to take in the sixth, and also the third and fourth, would probably take in the fifth, and with it the seventh and eighth, so there would be affection of the other motor nerves.

One more point, in regard to the suggestion of syphilis. I would say that the first case that Dr. Prince reported I saw a good many times last winter, when I took the service, and she had been given iodide of potassium then. It was pushed until she took somewhere between two or three drachms three times a day, without any effect, and therefore, it must have been in this nucleus that I speak of, and from a negative point must have considerable bearing.

There is another way in which we may consider that we have a peripheral neuritis in which we may notice ophthalmoplegia externa. The third nerve first divides, sending a branch to the external rectus. This branch then sends a short branch to the ciliary ganglion, and after that goes on and supplies the other muscles of the eye. From the ciliary ganglion run the ciliary fibres to the ciliary muscle. You simply have to suppose, in that case, a neuritis affecting the terminal filaments either before or after the fibres going to the ciliary ganglion, without involving the ciliary muscle. That is a possibility that has been considered in the autopsies. In one case, I believe, it was not found.

The PRESIDENT appointed as a Committee to take into consideration the address from the College of Physicians, Drs. Barnes, Folsom, and Durgin.

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THE SCIENTIFIC SPIRIT OF THE AGE.

UNDER this head, Frances Power Cobbe, a strong-minded English lady who has been chiefly noted the past few years for her ravings against vivisection and experiments on animals, which, she thinks, exercise a "demoralizing influence upon any person who may be called upon to make them," writes in the *July Contemporary Review*. She deplores the "materializing tendency of a scientific education," which, among other evils, fosters a "callous and irreverent spirit." "Disease," as estimated from a scientific standpoint, "is the most important of facts and the greatest of evils. Sin, on the other hand, is a thing on which neither microscope nor spectroscope, nor even stethoscope, can afford instruction." The Scientific Spirit (the capitals are hers) is at war with religion, which now "meekly goes to church by a path over which Science has notified: 'On sufferance only!'" We are in danger of losing the pleasures afforded by Art and Nature, Poetry and Music, as fast and as far as we become pervaded by the Scientific Spirit, and the question is pathetically asked: "What shall it profit a man if he find the origin of species, and know exactly how earth-worms and sun-dews comport themselves, if all the while he grow blind to the loveliness of Nature, deaf to music, insensible to poetry, and as unable to lift his soul to the Divine and Eternal as were the primeval apes from whom he has descended."

All this indictment is sufficiently dreadful, if true, although in substantiation of it the writer produces only one witness, the late Mr. Darwin, who, in his recent autobiography, avows that the ever-increasing devotion to the special scientific studies which had absorbed the energies of his life had destroyed his relish for poetry, music, and art. Mr. Darwin was in this respect an exemplification of what every man experiences to a greater or less degree who concentrates his powers on any one study for which he has a special aptitude. It is not necessarily scientific men who, by devotion to their particular calling, becoming in a measure incapable of æsthetic enjoyments, are ex-

amples of what every one knows to be a physiological law, and of which Miss Cobbe might have found another striking instance in Sir Isaac Newton, who was, however, a very religious man; it is just as true that persons with an extraordinary penchant for *music* are often deficient in the scientific spirit, or, to use Miss Cobbe's metaphors, blind to the beauties of science and deaf to the harmonies of nature. The same may be said of a natural fondness for any of the arts which may produce in the individual a one-sided development. It is, moreover, a fact that, by virtue of the physiological law, true greatness in any specialty becomes possible by the localization and concentration of energy.

That earnest and eminent workers in science may, however, have a cultivated taste for and take a genuine delight in aesthetics, can be affirmed with thousands of examples to support the assertion, and very many of the scientific readers of Miss Cobbe's article will indignantly resent the imputation that scientific habits of thought are in any way inimical to or destructive of the religious sentiment. It might even be contended, to the contrary, that an intelligent appreciation of the order of nature—in the minutest things, as in the greatest—must tend to foster a reverent and devotional spirit, and render a person religious in the true sense of the word.

It cannot be too much insisted on that, whatever apprehensions may be entertained as to the possibilities of harm to cherished beliefs from the prevalence of the scientific method, science is simply *the knowledge and application of facts* (in the moral, as well as in the physical universe), and that any system or belief which can be shown not to be based on facts is pernicious, and ought to be destroyed. Nor can aught but good result from the diffusion of scientific facts and principles, for there can be nothing better or more worthy of pursuit than truth, which is the subject-matter of science.

There is one point in connection with Miss Cobbe's *Contemporary Review* article where there will be more sympathy with the writer among the readers of medical journals; namely, her animadversion of a peculiarly modern custom pertaining to the publication by secular papers of details respecting the sickness and death of certain distinguished patients, though her apparent hatred for doctors leads her to statements that few of our readers will exactly endorse.

"The political press has adopted the practice of reporting the details of illness of every eminent man who falls into the hands of the doctors, and affords these gentlemen an opportunity of advertising themselves as his advisers. The last recollection which the present generation will retain of many an illustrious statesman, poet, or soldier will not be that he died like a hero or saint, bravely and piously, but that he was swallowed such and such a medicine, and, perhaps, was sick in his stomach. Death-beds are desecrated that doctors may be puffed and public inquisitiveness assuaged." If doctors do advertise themselves as

Miss Cobbe boldly asserts, there is something to be said on the other side. The doctor who dares refuse information about a distinguished patient, has before now been made the subject of criticisms, almost as unpleasant as those of Miss Cobbe herself.

THE BREEDING OF PAUPERS AND CRIMINALS.

At the recent Prison Congress, Mr. C. H. Reeve, of Plymouth, Ind., read a suggestive paper on "Dependent Children," which went deeper than the very obvious question of their support and rearing. In regard to the existing conditions, he said that the origin of a majority of the most undesirable of these children exists in an erroneous and perverted view, by both State and Church, of what constitutes a true marriage, producing a vicious civil and canonical legislation that encourages and sanctions their production, thereby constantly widening the planes of pauperism and crime.

"The mass of dependent children is largely made up of foundlings, illegitimates, children abandoned by worthless parents, orphans of the very poor, with a few better born who become waifs from various causes. In the cases of nearly all of them except the last there is more or less mental deficiency, or deformity in the brain substance, or the conformation or arrangement of brain ganglia.

"Statute law makes marriage a civil contract—a matter of dollars and cents. No matter who comes for a marriage permit—the strong or the weak-minded, the sound and healthy or the deformed and constitutionally diseased, the millionaire or the hereditary pauper, the moral and orderly or the vicious and confirmed criminal, the progenitor of statesmen or of idiots, the sane, or the hereditary insane if favored with a lucid interval, the temperate or the besotted—all are given a permit alike. The revenue is collected, the ceremony authorized, the record made, and this civil contract is fully completed by sanction of law! If a man wants to run a locomotive engine, or practice medicine (elsewhere than in the United States) or plead in the courts, or stand in the sacred desk and talk theology, or teach a school, or run a pilot boat, or even to secure a petty clerkship under Government, he must submit to a rigid examination as to his fitness for the position and its duties, and be able to pass one. But one comes forward to get a permit to enter into a contract that places him under obligations and demands of him duties that are the most important, the most responsible, the most sacred that can be assumed anywhere between the cradle and the grave, that vitally affect the bodies social and politic as well as corporal, now existing and hereafter to exist, directly and indirectly, not a word is said. All are licensed."

Not very long ago the public was admonished by a consul of the United States that a lawful marriage in the United States was not necessarily binding in France as between a Frenchman and an American. It

seemed shocking, but looking at our marriage system as here presented, there is certainly much to be said for the French views of the subject.

Mr. Reeve does not consider the church blameless in the matter. "It regards marriage as a holy, sacramental covenant. By permission of law its ministers ceremonially aid the parties in making this holy covenant, which, at the same time involves the statutory civil contract. It makes little or no inquiry as to the candidates. (One organization may as to belief in a creed). It looks only for a license and the fee in prospect. Even in the shadow of the prison wall and of the gallows its ministers, in sacerdotal robes, have united criminals. Thus is it *sanctioned by the church!* What a shocking view is before and around us when we see the public opinion, both legal and social, upholding these conditions! Government maintains a bureau and employs scientific experts, regardless of expense, to hunt out and kill diseased horses and cattle; invades anybody's premises for the purpose, and makes it a crime for the owner to resist. But when a viciously diseased man or woman applies for a legal permission to taint whole generations it asks no questions, extends no protection for individuals or the public, but grants the permit.

"What must follow and does follow this universal misuse and abuse of knowledge and liberty? Plainly, the constant and rapid peopling of the planes of pauperism, idiocy and crime, and the steady widening of those planes; physical and mental disease and deformity; the evolution of new forces that pervert the correct views of a true humanity, and tend to destroy moral perception."

Mr. Reeve made certain suggestions concerning the care of these little unfortunates, and then went on to say that "with the statutes providing for homes and training schools, there should be others looking to the prevention of pauperism and crime by preventing the production of paupers and criminals, and especially their production under the permission and sanction of the State laws and social usages.

"It is a greater evil to bring into life a child on the plane of hereditary pauperism, or in the line of successive criminals, than it would be to adopt the theory of Malthus, confining it to those planes. There is as much wrong in bringing into life a child with insane parentage as there would be in driving a sane child insane by cruel and brutal usage. There is more wrong in bringing into life a child without legitimate parentage than there is in child-stealing for the purpose of professional beggary.

"Let us hope that, slowly, but surely, the knowledge will obtain that marriage is not romance, but the very highest order of business, requiring more deliberation, more care and forethought, and entailing more responsibility than any other act known to humanity. That Government will recognize that it has no greater obligation resting upon it than to see that none have its license to enter into a contract of marriage who are unfit for its relations and duties, as

far as human foresight and legal provisions can prevent, and proper inquiry can prevent in most cases, if it be aided by sufficient penalties."

It is a hopeful view of the power of law to suppose it can so regulate the marriage relation as to put an end to the breeding of criminals, paupers, and insane. Careful regulation of marriage has not been so successful in countries where the regulations are most strict as to warrant any very great reliance on it; and surely it would be a curious condition of affairs to forbid the rearing of criminals at home while we import them so freely from the old world, but the condition described in the article we have so freely quoted is one that deserves recognition, and if laws can but imperfectly control the matter, such statements will certainly help to awaken public knowledge upon the subject. Newspaper reports tend to show that Dr. Richardson's chapter on the "Inter-marriage of Disease" has brought him a considerable amount of correspondence from those who desire to apply to their own cases what he has to say on the subject.

MEDICAL NOTES.

—A writer in the *Popular Science Monthly*, commenting on the various theories advanced for the prevalence of baldness, says, that while a resident of India he had an opportunity of extended observation of the Parsees, who are compelled by law and usage always to keep the head covered. Through the day they wear a high hat without a brim, which is always made very tight to keep it on, creasing the scalp and he thinks possibly the skull, by its constricted rim; when they remove this, they substitute a skull-cap. But he has never seen a case of baldness in them, nor have they themselves been able to report one to him among their own race. This fact seems to have a rather a damaging effect on the tight-hat-band and constant-hat-wearing theories of baldness.

NEW YORK.

—Among the passengers on board the steamship *Trave*, which arrived from Bremen on the 24th of August, were the eminent German surgeon, Prof. F. E. August von Esmarch and his wife, the Princess Henrietta of Schleswig-Holstein, a cousin of the present Empress of Germany. They were accompanied by their son, Dr. Erwin von Esmarch. The distinguished visitors were met by friends down the bay and escorted to the apartments of Dr. F. Langé, on Lexington Avenue. It is their intention to see as much as possible of America on this, their first visit to the country, and they will devote their time principally to travel and pleasure, though Professor von Esmarch will attend the Medical and Surgical Congress at Washington in September. He is now in his sixty-fifth year, while his wife is fifty-five years old. The Princess is the daughter of Prince Christian, the brother of the German Empress's father, Duke Ernst Gunther.

— Mrs. R. H. Townsend, who, last year, erected at her own expense at Bellevue Hospital a pavilion for operative procedures on female patients, has now given to the Hospital a brick building, two stories in height, for a library and chapel. It is located on First Avenue, immediately in front of the main hospital building, and, when completed, it will conform in general style to the surgical pavilion referred to, which stands on the Hospital grounds at the corner of First Avenue and 26th Street. Heretofore the patients' reading-room has been the office of the Medical Board, and the amphitheatre where the general clinics are held the only place in the institution that could be used as a chapel.

— The Quarantine Commissioners have adopted a resolution in which, in accordance with the power vested in them by an act passed by the last State Legislature, they make Cape Henlopen, instead of Cape Henry, the northern point for quarantine inspection.

Miscellany.

MACTE LISTER TRIUMPHATOR!†

A MOIST-MERRY, HUMID-HILARIOUS ANTISEPTIC VAD-MECUM OF INTERNAL SURGERY, FOR THE AMBITIOUS MODERN PHYSICIAN.

BY DR. RISORUS SANTORINI. Translated by "FAMULUS."
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(c) Pulmonary Resection.

What I have heretofore recorded
Of treatment in conditions morbid
Is prudence, care, conservatism;
Is surgical asceticism,—
Is like amebic protoplasm
Compared to perfect organism,—
Is modesty, fear, vacillation,
Timidity, procrastination,—
Like infant birth to resurrection,—
Has with true courage no connection,
When we consider lung-resection.

"Experimentally" it's stated
That normal lungs when amputated,
"Usually" hear this grave proceeding
With little shock and moderate bleeding; —
But even with this full explanation,
I would not risk the operation.

It must be that some detail hitches,
When, of eight strong and healthy bitches
Subjected to this mutilation,
But three survived the operation.

Herr Dr. Schmidt calls this "success":
I might esteem it something less.

But Dr. Block is my example,
Who after toils and trials ample
With all the various lung-insults,
Reported that he got "results,"
With dogs and oxen, cow and pig,
Hares, rabbits, creatures small and big;
A large and pitiful collection
All sacrificed to lung-resection.

A score recovered — stop! I pray!
I'll put a question, if I may
[Correct statistics is my pride],
How many of the creatures died?

Ah! would some fairy realistic,
Might sometimes alter facts statistic.

Herr Ruggi, spite of diagnosis,
Resected even tuberculosis.
The patient, through perversity,
Died the same day quite suddenly.

Therefore, observe this one direction
Whene'er you meditate resection;
Tuberculous lung, where'er it be,
Is not subject to surgery.

At the same time — Krœnlein has proved it —
(Costal sarcoma — he removed it —)
If to our skilful apprehension
There should be visceral extension;
If the disease should penetrate,
And in the lung proliferate;
If from contact there be a nodule
In peripheric lobe or lobule;
Indulge no further hesitation
Resection is the one salvation.

Therefore, take due care I pray,
Before lung-surgery you essay,
These points you strictly should observe:
Let not your operative "nerve"
Deprive each case of careful study
Before an operation bloody.

Determine, first, if there's adhesion
Between the pleura and the lesion.
For this, an acupressure stylet
(Though doctors often now revile it)
Affords the means of information.
If in the act of respiration
No rhythmic-movement is detected,
A fatal end must be expected.

This is pulmonic surgery.
If you employ it bold and free,
'T will advertise you far and wide;
You'll be extolled on every side.

But I entreat you earnestly
To hold yourself from humbug free;
Which Cayley did not hesitate
With his real worth to associate;
Who maintained in a "genial" thesis
The ground that profuse hæmoptysis
May be relieved, — yes, cured, perhaps
If we the bleeding lung collapse
By operative pneumothorax!!
This might be well in *Corvus corax*.
This method he, in fact applied; —
The patient very promptly died!

CHAPTER III. CARDIAC SURGERY.

(a) *Paracentesis Pericardiû.*

With weird and superstitious fears
The pericardium appears
For ages to have been neglected
Nor once *in vitam* well inspected.

† Continued from page 190.

Few had the courage even to try
 Paracentesis pericardii.
 Surgery shrank with terror back
 When near the pericardial sac.
 But nowadays we read and hear
 Of various cases every year.
 But in *one* man all arts combine.
 His name is Dr. Rosenstein.

In the fourth intercostal space
 (Exact percussion shows the place),
 A finger's breadth from sternal edge.
 He punctured, and with "Ego sum"
 Pumped from the pericardium,
 By means of Potain's instrument,
 The sero-purulent content.

But he received no recognition
 Till later he made free incision;
 An opening wide he then maintained,
 And thus the pericardium drained.

Alas! it's easier in our day,
 This to describe than to essay!
 Who therefore would upbraid a fellow,
 Or fancy that his skull were callow,
 If rarely he should find occasion
 For such a doubtful operation?
 Ah! could we gather information
 In each case of the exudation,
 We should feel much more certainty
 In pericardial surgery.

But as the symptoms may agree
 With those of heart-hypertrophy;
 As well as cardiac dilatation
 Due to defective compensation —
 Not to allude to aneurism —
 Alas! This is no solecism.
 If any case in judgment tax him,
 The doctor should apply this maxim;
 To advocate no operation
 Before sub-dermic exploration.

Given, that to a great degree
 And permanently there's dyspnoea,
 The law is: Promptly operate.
 The heart else may degenerate;
 And bacillary immigration
 Occur within the exudation.

(b) *Cardicentesis.*

Behold to what sublime degree
 Now towers internal surgery!
 And possibly your lips proclaim
 Of German intellect the fame.
 But in America you'll find
 We leave the Germans far behind.
 Have you not heard of Westbrook's name?
 Do you not know of Westbrook's fame?
 Who, when heart-failure with aphonia
 Appeared in course of a pneumonia,
 The right auricle aspirated,
 And ninety grammes of blood vacated.
 The next day, punctually at three,
 Was held the patient's autopsy.
 The cavum pericardii
 Was filled with blood and flocculi;

But Roberts hopes "with certainty"
 That in a few years we shall see
 Good doctors all with acclimation
 Adopting Westbrook's operation.

My friend, you should not feel surprise
 At anything a Yankee tries.
 From him we soon expect direction
 Not only for cardiac resection,
 But for aortic ligature.

(To be continued.)

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

WASHINGTON, D. C., August 27th, 1888.

In view of the fact that frequent inquiries are made of the Committee of Arrangements by medical men and others in regard to the character of the organization now known as The Congress of American Physicians and Surgeons, which will hold its first triennial session in Washington, September 18, 19 and 20, it may be proper to state that several years ago the American Surgical Association, passed a series of resolutions declaring it expedient that the special medical societies in this country should adopt some plan of organization by which they should be brought together at certain stated periods, and invited the other societies, to co-operate with it in perfecting such a scheme. This invitation was accepted by the several societies, and in October, 1887, a committee of conference, composed of delegates from each of the societies, assembled in this city and agreed upon a plan of association, which was subsequently considered and accepted by the societies constituting the Congress as now organized. This plan consists simply of the agreement that the medical societies named shall hold their usual annual meetings at the same time in this city every third year, and that an executive committee, composed of one member of each society accepting the agreement, shall arrange for one or more general meetings for the consideration of such medical subjects, by such physicians and surgeons, and which may be followed by such general discussion as time may permit. The present Executive Committee is also charged with the duty of devising and submitting a plan of permanent organization, which will be considered at a preliminary meeting on Tuesday morning, September 18. There is no membership in the Congress proper. Membership belongs exclusively to the several societies constituting the Congress. Each society prescribes its rules for admission of candidates, and transacts its business according to its own method. The Congress, as such, does not in any manner interfere with the autonomy of the several constituent societies.

The guests are men of distinction in some special department of Medical Science, who have been invited by some one of the constituent societies to attend its meetings, and perhaps to present a paper on some chosen subject. They are guests of a society, not of individual members. The Committee of Arrangements has not claimed or exercised the privilege of naming guests, nor has it conceded the privilege to individual members. At its suggestion the Executive Committee has invited the heads of the government bureaux of medicine, the president of the last International Congress, and several other citizens to whom it was indebted for courtesies. In the event there should be present from abroad any medical man, who may not have been specially invited, the Committee will hold itself bound by ordinary courtesy to include him in the list of guests.

The meetings of the Congress and of the Societies will be open to the profession. Any medical man who may choose to attend has the privilege of doing so; but the privilege of taking part in the discussions will be limited to the members, guests, and those who may be invited to do so by the societies respectively. The invitation to attend the meetings and engage in discussion will not, however, entitle one to the privileges of a guest.

Members and visitors must avail themselves of the ordinary excursion rates of railroad fare.

The Postmaster of this city has arranged facilities for the distribution of the mail at the office of registration, in Willard's Hotel. Letters must be addressed to "The Congress of American Physicians and Surgeons."

It may be added that the Committee of Arrangements declines to make any provision for, or to have anything to do with, any exhibits of pharmaceutical preparations and medical and surgical appliances.

I assume the responsibility of making the foregoing statement for the information of those concerned, and to avoid confusion and misunderstanding. And it gives me great pleasure to announce that the meeting in every aspect promises to be a conspicuous success. Yours truly,

SAMUEL C. EUSEY, M.D.,
 Chairman Committee of Arrangements.

REPORTED MORTALITY FOR THE WEEK ENDING AUGUST 18, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrheal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	802	430	34.80	10.80	22.92	.96	5.76
Philadelphia	1,016,758	—	—	—	—	—	—	—
Brooklyn	761,432	445	247	44.54	9.90	25.30	1.54	2.64
Chicago	760,000	339	189	35.56	7.25	25.81	2.61	2.90
St. Louis	449,100	165	80	27.27	4.24	10.30	4.24	5.45
Baltimore	437,455	224	134	39.60	10.35	33.75	.45	.80
Boston	407,024	228	111	40.04	12.32	27.28	.88	1.76
Cincinnati	325,000	152	—	16.50	9.24	13.80	1.32	.66
New Orleans	248,000	109	38	28.96	17.12	9.17	—	12.88
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	110	60	38.18	6.36	25.45	3.63	—
Pittsburgh	210,000	96	54	40.56	8.32	24.96	6.24	4.14
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	38	14	44.72	15.78	34.19	5.26	—
Nashville	65,153	24	8	37.44	12.38	20.80	8.32	—
Charleston	60,145	50	24	18.00	8.00	10.00	2.00	—
Portland	40,000	12	3	—	—	—	—	—
Worcester	76,328	37	26	45.90	5.40	35.10	5.40	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	26	17	53.90	7.70	34.65	3.85	7.70
Fall River	61,203	35	27	90.52	5.72	90.52	—	—
Lynn	51,467	23	—	8.70	8.70	—	4.35	—
Lawrence	40,475	—	—	—	—	—	—	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36,298	25	15	48.00	—	48.00	—	—
Somerville	33,307	13	7	61.52	15.38	53.83	—	7.69
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	—	—	—	—	—	—	—
Chelsea	27,552	12	7	16.66	16.66	16.66	—	—
Haverhill	24,979	11	5	18.18	9.09	18.18	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	21,784	—	—	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	10	7	40.00	20.06	40.00	—	—
Malden	18,932	12	10	—	—	—	—	—
Fitchburg	17,534	14	10	35.70	7.14	35.70	—	—
Waltham	16,651	6	3	16.06	16.06	33.33	—	—
Newburyport	13,859	8	—	37.50	—	37.50	—	—
Northampton	13,419	3	1	33.33	—	33.33	—	—

Deaths reported 3,079; under five years of age 1,527; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 1,065, consumption 255, acute lung diseases 130, diarrheal diseases 751, diphtheria and croup 112, whooping-cough 61, typhoid fever 55, malarial fever 32, measles 25, scarlet fever 16, erysipelas eight, cerebro-spinal meningitis seven. From whooping-cough, New York 24, Baltimore and Washington five each, Brooklyn eight, Chicago and St. Louis four each, Boston and Pittsburgh three each, New Orleans and Cambridge two each, Charleston one. From malarial fevers Brooklyn eight, St. Louis six, Baltimore five, New York and Washington four each, Charleston two, New Orleans, New Haven and Nashville one each. From measles New York 13, Chicago eight, Brooklyn two, Pittsburgh and New Haven one each. From scarlet fever New York eight, Brooklyn five, Boston, New Orleans and Pittsburgh one each. From erysipelas, Boston four, New York, Chicago, St. Louis and Worcester one each. From cerebro-spinal meningitis, New York three, Boston, Nashville, Worcester and Lynn one each.

In the 26 greater towns of England and Wales with an estimated population of 9,338, 273 for the week ending July 28th the death-rate was 15.8. Deaths reported:—Infants under one year—1; acute diseases of the respiratory organs (London) 160, diarrhoea 156, whooping-cough 65, measles 62, scarlet fever 40, diphtheria 35, small-pox (Preston) 3.

The death-rates ranged from 8.1 in Derby to 25.4 in Halifax: Birmingham 13.2; Bradford 12.7; Hull 14.4; Leeds 16.6; Leicester 12.4; Liverpool 17.1; London 15.9; Manchester 20.3; Nottingham 12.9; Sheffield 15.9; Sunderland 15.8; Wolverhampton 16.0.

In Edinburgh 13.7; Glasgow 17.0; Dublin 18.0. In the 28 greater towns of England and Wales with an estimated population of 9,338, 273, for the week ending August 4th the death-rate was 16.0. Deaths reported 2,881: Infants under one year 898; acute diseases of the respiratory organs (London) 167, diarrhoea 215, measles 64, whooping-cough 61, scarlet fever 33, diphtheria 27, fever 21, small-pox (Preston two, Sheffield, Hull and Oldham one each), 5.

The death-rates ranged from 21.9 in Manchester to 9.0 in Bristol: Birmingham 15.8; Bradford 13.6; Leeds 16.5; Leicester 18.1; Liverpool 18.6; London 15.9; Nottingham 12.7; Portsmouth 14.6; Sheffield 18.8; Sunderland 13.4. In Edinburgh 15.7; Glasgow 18.2; Dublin 21.1.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING AUGUST 25, 1888.

SIMONS, MAXLY H., surgeon. Detached from "Constellation" and to the Naval Academy.

RUSSELL, A. C. H., passed assistant surgeon. Detached from "Constellation" and to the Naval Academy.

DICKSON, S. H., passed assistant surgeon. Detached from Marine Barracks, Washington, D. C., and to the United States Steamship "Richmond."

CORDEIRO, F. J. B., passed assistant surgeon. Ordered to the United States Steamship "Mohican."

FARWELL, W. G., surgeon. Detached from the United States Steamship "Saratoga" and ordered home to wait orders.

DICKINSON, DWIGHT, surgeon. Detached from the United States Steamship "Portsmouth" ordered home to wait orders.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. A., FOR THE WEEK ENDING AUGUST 21, 1888.

MAISON, CHARLES F., assistant surgeon U. S. A. Ordered to Fort Washakie, Wyo. Tt., for duty. Paragraph 5, S. O. 190, A. G. O., August 17, 1888.

VOLLUM, EDWARD P., lieutenant colonel and surgeon U. S. A. Leave of absence extended two months. Paragraph 17, S. O. 192, A. G. O., August 20, 1888.

APPEL, DANIEL M., captain and assistant surgeon. Ordered to Fort Bliss, for temporary duty. S. O. 77, Department of Texas, July 25, 1888.

COWDERY, STEVENS G., captain and assistant surgeon. Granted leave of absence for one month. S. O. 77, Department of Texas, July 25, 1888.

WOODHULL, A. A., major and surgeon U. S. A. Relieved from duty with Army Retiring Board, Fort Leavenworth, Kan. Paragraph 10, S. O. 190, A. G. O., August 17, 1888.

AINSWORTH, FRED C., captain and assistant surgeon U. S. A. To proceed to Atlanta, Ga., and inspect the new Army Hospital at that place. Paragraph 18, S. O. 192, A. G. O., August 20, 1888.

The meteorological record for the week ending August 18, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barom-eter.	Thermometer.				Relative Humidity.		Direction of Wind.		Velocity of Wind.		State of Weather. ¹		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum	7.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration, Hrs. & Mins.	Amount in Inches.
Saturday, Aug. 18, 1888.															
Sunday, . . . 12	30.20	64.0	70.0	60.0	75.0	84.0	78.0	S.	E.	3	12	O.	O.	2.00	.04
Monday, . . . 13	29.88	62.0	73.0	58.0	100.0	92.0	96.0	E.	N.	24	6	R.	O.	7.00	1.44
Tuesday, . . . 14	30.01	65.0	76.0	56.0	61.0	60.0	62.0	W.	W.	24	8	F.	C.		
Wednes., . . . 15	30.05	72.0	82.0	73.0	60.0	82.0	71.0	W.	S.	9	14	O.	C.		
Thursday, . . . 16	29.97	78.0	87.0	68.0	78.0	72.0	75.0	S.W.	S.W.	9	10	F.	C.	2.00	.03
Friday, . . . 17	29.89	78.0	86.0	72.0	69.0	91.0	80.0	W.	S.W.	12	17	F.	F.	8.00	.23
Saturday, . . . 18	29.96	74.0	84.0	68.0	76.0	64.0	67.0	W.	W.	12	3	F.	O.	3.00	.07
Mean, the Week.															

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OWEN, W. O., JR., captain and assistant surgeon U. S. A., Fort Leavenworth, to report for temporary duty to the commanding officer, Fort Gibson, I. T. Paragraph 1, S. O. 104, Department of the Missouri, August 20, 1888.

HEGER, ANTHONY, surgeon U. S. A. In addition to his other duties to attend to the duties of the medical director, Division of the Atlantic during absence of Col. Charles Sutherland, Paragraph 4, S. O. 170, Division of the Atlantic, August 18, 1888.

WOOD, LEONARD, assistant surgeon U. S. A. To proceed from Fort McDowell to San Carlos, A. T., and carry out the instructions of the Department Commander. Upon completion of that duty to return to proper station. S. O. 89, Department of Arizona, August 1, 1888.

JANEWAY, JNO. H., major and surgeon U. S. A. Granted leave of absence for one month on surgeon's certificate of disability. Paragraph 2, S. O. 41, Division of the Pacific, August 8, 1888.

MANS, LOUIS M., captain and assistant surgeon U. S. A. Having completed rifle practice at Camp S. B. Luce, Fisher's Island, N. Y., to return to his proper station (Fort Schuyler, N. Y. H.) Paragraph 1, S. O. 171, Division of the Atlantic, August 20, 1888.

WRIGHT, JOSEPH P., major and surgeon U. S. A. Detailed as member of Army Retiring Board, Fort Leavenworth, Kan., vice A. A. Woodhull, major and surgeon U. S. A., relieved. Paragraph 10, S. O. 130, A. G. O., August 17, 1888.

SUTHERLAND, CHARLES, colonel and medical director. Directed to inspect the Medical Department at Forts Brady, Mackinac and Wayne, Mich., Forts Porter, Niagara, and Ontario, New York, Madison Barracks and Plattsburg Barracks, New York, Fort Preble, Me., Fort Warren, Mass., Fort Adams, R. I., Fort Trumbull, Conn. Paragraph 7, S. O. 168, Division of the Atlantic, August 16, 1888.

GORGAS, WM. C., captain and assistant surgeon U. S. A. Leave of absence granted in S. O. 177, A. G. O., August 1, 1888, revoked and ordered to proceed to Camp Monte Seno, Huntsville, Ala., and report in person to the commanding officer thereof for duty, relieving Major Harvey E. Brown, surgeon. Paragraph 8, S. O. 187, A. G. O., August 14, 1888.

TORNEY, GEORGE H., captain and assistant surgeon U. S. A. To proceed to St. Augustine, Fla., via Palatka, accompanying the U. S. Troops thereto at Huntsville, Ala., as medical officer, and thereafter to return to his proper station (Fort Monroe, Va.) Paragraph 4, S. O. 165, Division of the Atlantic, August 13, 1888.

SMITH, JOS. R., surgeon and medical director, Department of Dakota. To inspect Forts Pembina, Tipton, Buford, Abraham Lincoln and Yates, D. T. Paragraph 4, S. O. 77, Department of Dakota, August 13, 1888.

OBITUARY. HENRY F. QUACKENBOS, M.D.

Dr. Henry F. Quackenbos, a well-known New York practitioner, died at his residence August 28th, after a lingering illness. He had for a considerable time been suffering from chronic Bright's disease, but the immediate cause of death was pneumonia. He was born September 20, 1819, in New York, of which city his father, Dr. Nicholas I. Quackenbos, was also a native. Both father and son were graduates of Columbia College. In 1840 Dr. H. F. Quackenbos was graduated from the College of Physicians and Surgeons, New York, and he afterwards went abroad and pursued his medical studies in London, Edinburgh and Paris. While residing at the latter capital he

was appointed surgeon of a brigade commanded by General Pellisser, afterward Duke of Malakof, and with it he served in the French Campaign in Northern Africa against the Algerians. He then returned to New York, and during the cholera epidemic in 1849, he was in charge of Bellevue Hospital, where his devoted and energetic services won him marked distinction. Dr. Quackenbos had a very extensive private practice, particularly among members of the theatrical profession, and from the date of its organization he was honorary physician of the New York Dramatic Fund Association. The last prescription he ever wrote was for Mr. Davidge, the genial comedian who recently died while on his way across the continent to California. For many years he attended the late Edwin Forrest, who, it is said, if taken ill while travelling, would always send for him, however distant from New York he might be. Dr. Quackenbos leaves a widow and one son.

HENRY O. STONE, M.D.

Dr. Henry Osgood Stone, who died August 23d, at the age of sixty-seven, at Salem, in the very house where he was born, was one of a large family of brothers, two of whom, the lamented Dr. John O. Stone, of New York, and the subject of this notice, became distinguished in the medical profession. Dr. Stone graduated at Harvard in 1841, and as M. D., at the University of Pennsylvania in 1844. After two years spent in Europe, he established himself in Boston, where his accurate knowledge, excellent judgment and self-sacrificing devotion soon made him conspicuous; although these qualities were united with a modesty which shrank from praise. Amply qualified in all departments of the profession, he had a special aptitude for surgery. But his health was never robust; and, after the death of his father, at the desire of his wife, he returned to his native city, and became a welcome addition to the list of Essex County practitioners. Frequent intense attacks of migraine, to which he was subject, and which were especially induced by railway travel, compelled him to decline consultations out-of-town, and finally led him to withdraw from active practice; though he always retained a keen interest in whatever pertained to his profession; and he found congenial resources in books and in the exercise of a large benevolence. Highly cultured, refined in word and deed, cheerful, dignified and independent, but of great spiritfulness and wit in conversation, he filled a place not to be supplied in his family, in the large circle of his friends, and in the community in which he lived. Many of us can say, "I would that Heaven had made me such a man."

Dr. Stone's decease was sudden: A strange sensation in the head on Wednesday was followed by a partial paralysis on Thursday; but he continued conscious, able to talk, and fully aware of his condition; and at three in the afternoon of that day he quietly passed away.

THOMAS T. SABINE, M.D.

Dr. Thomas T. Sabine, the distinguished surgeon, son of Dr. Gustavus A. Sabine, who survives him, died August 23d, having been ill for some time with a complication of diseases. He was graduated from the College of Physicians and Surgeons, New York, in 1864, and in 1879 was appointed Professor of Anatomy in the College. For a number of years he was attending surgeon to Bellevue Hospital, St. Luke's Hospital, the New York Orthopaedic Dispensary and Hospital, and other institutions, and he was highly esteemed for his many genial qualities no less than for his marked professional ability and rare skill as an operator.

Original Articles.

THE BACTERIA OF THE ALIMENTARY CANAL
ESPECIALLY IN THE DIARRHOEAS OF INFANCY.

BY JOHN A. JEFFRIES, M.D.

THAT the interest lately developed in the study of the relation of bacteria to the diarrhoeal diseases of infancy is justified will probably be acknowledged by all. On the other hand, owing to the recent development of bacteriology and the obscure way in which some of the most important articles have been published, those not actively studying the subject have but slight ideas of the advance made, advance already giving results in practice.

Both treatment and prophylaxis have improved. An infant can now cross the ocean provided with a supply of milk, cream mixture, or the like, sure to keep fresh, and identical with the food of the nursery. We are now justified in looking forward to another stride in the difficult subjects of artificial feeding of infants and the intestinal troubles of the same. The last great step was made by the chemical study of foods and the general realization of the fact that cows' milk is not mothers' milk, and a growing belief that were young animals fitted to feed on vegetable food nature would not have taxed the parents so heavily to provide an animal food. All the higher forms of life conform to this law, the helpless young are fed on animal food. We see this not only in the milk of mammals, but in the insect food of the helpless young of birds.

Bacteriology has now shown that, provided we start with a food chemically right, care must be taken or our worst foes, bacteria, will quickly invade the field, and, as if by the wave of a wicked fairy's wand, change the whole into poisons. Not only do bacteria work harm from without and within the body, but certain forms appear positively beneficial, inasmuch as by pre-emption of the alimentary canal they exclude more noxious forms.

The cavity of the mouth and throat offer little of importance to the subject. Many forms of bacteria are known to occur and to play a causative part in certain local diseases, as decaying teeth, thrush, and the like. Again, forms pathogenic to animals commonly occur, and forms known to be so to man are by no means rare. Yet on the whole the flora of the mouth is fairly constant, as shown by Vignal,¹ and Miller,² and chiefly of interest not for the harm it does, but for the converse. How is it that so many noxious forms existing in the mouth and being swallowed with the food and saliva disease is not vastly more rife? This is an interesting question. Unfortunately, as yet replies can only be made in general terms, that the epithelium of the mouth, true skin, is thick and the parts beneath very vascular, thus offering decided mechanical difficulties to the entrance of bacteria, and a prompt, powerful response from the system to any threatened invasion.

Once arrived in the stomach it has, until recently, been generally held that the bacteria would be killed by the hydrochloric acid, perhaps digested by the pepsin. Like other mistaken beliefs it is difficult to

trace this to its source, or to collect and arrange the arguments in its favor.

Bienstock³ seems to have been the first to put this idea forward, supported by experiments. This author held that only four or five kinds of bacteria occurred in the intestines, and on experimenting with those in a spore-free condition found them to be killed by a 2% hydrochloric acid solution.

Koch first showed that the vegetative form of the anthrax bacillus was unable to resist the action of the hydrochloric acid during the normal course of digestion of vegetable eaters, but that the spores could pass through.

Koch, however, also pointed out in relation to the cholera bacillus that the empty stomach is not acid, that all the food does not stay there for hours, and that time is required to bring the hydrochloric acid up to the normal, 2%.

We now know, thanks to the studies of Miller, De Barry and Escherich, that living bacteria are to be found in the stomachs of man and the animals, while the literature on sarcina ventriculi, a special form, beginning with the note by Goodsir⁴ in 1842, has grown to large proportions in the work of Falkenheim⁵ and others.

Miller² has isolated several forms from the digestive tract, and studied the effect of artificial digestion on pure cultures, but disregarded the question of spores. This was unfortunate, as it has always been granted that spores could pass through the stomach, yet it is improbable that spores existed in all his cultures, such not usually being formed under the conditions with which they were grown. He showed that the full period of digestion with a 16% hydrochloric acid solution was required to affect the forms studied. Also, Miller found that, contrary to the statements of Bienstock, eight forms found in the mouth occur in the stomach, and twelve in the stools. His final conclusions are that all the forms studied could pass through the stomach during the first part of digestion. Here it is of importance to remember that the food begins to pass through the pylorus in from fifteen to twenty minutes after eating.

In a later article Miller returned to the subject and showed that four kinds of gas-producing forms isolated by himself from the stomach of a man, were able to pass through the stomach of a dog. Miller mixed pure cultures with the food and fed four dogs, later killing them two and a-half, six, eight and nine hours after feeding. In the first two the stomach and intestines were found acid, in the third the lower part was alkaline, and in the fourth the entire digestive tract. All four kinds were again isolated from the stomachs, small intestines and rectums of the first three dogs. No living bacteria were found in the stomach of the fourth dog. The dogs suffered from diarrhoea. Lastly Miller took a milk culture of his first species and suffered sufficiently to forego all further experiments on himself.

This last set of experiments shows clearly that bacteria can pass through the stomach into the intestines and live for a considerable time, but is open to the same objection as his first set, the failure to exclude spores.

³ Bienstock. Fortschr. d. Medicin, 1883, p. 609; Zeitschr. f. Klin. Med., 1884, p. 1.

⁴ Goodsir. Edinburgh Medical and Surgical Journal, 1842.

⁵ Falkenheim. Archiv. f. Experim. Pathol. u. Pharmacol., 1885, Vol. XIX, p. 339.

¹ Vignal. Archiv. de Physiologie, 1886, p. 325.

² Miller. Deutsch. Med. Wochenschr., 1884, p. 781, 1885, p. 843; 1886, p. 117.

De Barry⁶ studied the vomitus ejected by a man, and found seven species besides the mycelium of a mould. His work, however, was not done in strict accord with modern methods.

The most recent and conclusive work has been done by Macfadyen,⁷ to whose very able article all students of the subject are much indebted. He experimented with pure cultures of harmless and pathogenic forms exposed to the action of pepsin, hydrochloric acid, and the two together in various strengths. As results he found that pepsin had no effect, while it required the action of a .05% to a .3% solution of hydrochloric acid for four hours at 37° centigrade to kill the various species used. The comma, Finkler-Prior and bacillus prodigious were killed by the .05% solution, while .3%, fifty per cent. more than the normal human standard, was required to kill the ordinary micrococcus of pus or the bacillus of typhoid fever. The absence of spores was insured in every case.

Next Macfadyen followed up his test experiments with some on the dog. Dogs fasting for twenty-four hours were fed with foods containing pure cultures of the pus micrococcus, and killed after five hours. All showed large numbers of the aureus throughout the digestive tract, and especially numerous in the lower parts. Dogs not fasting gave the same results.

Lastly, Macfadyen tried to pass the more perishable forms through the stomach, and found that by giving a thirsty dog water, containing the culture, to drink, any form could be introduced into the intestines, even the cholera bacillus. Under such conditions, common ones among men during hot weather, and notoriously unhealthy, the water scarcely stops in the stomach, but passes through the pylorus almost as soon as swallowed.

It is thus clear that the stomach offers but an insecure protection, many forms outlasting the test of full digestion in the dog, and any form being able, under natural conditions, to pass the stomach. The dog's stomach is a fair test, since the acid is the active principle, and more abundant than in man.

That the bacillus of tuberculosis can pass the stomach, as shown by feeding experiments, is well known to all.

Of the morphology and biology of the forms found in the stomach little is known. The field is a new one, and the species have not been sufficiently described to enable others to recognize them with certainty. Miller has found five kinds which give off carbonic dioxide and hydrogen gas, lactic, acetic and butyric acids being formed. In some cases an inflammable gas is known to have been formed in the stomach, probably marsh gas.

Of the flora of the intestines much more is known than of that of the stomach, thanks to the work of Bienstock, Miller, Brieger, Vignal and Escherich, not to mention the facts brought out in the study of typhoid fever and cholera.

Bienstock⁸ was the first to attack the subject by means of cultures. Unfortunately his methods were inexact, and he shut his eyes to facts long revealed by the microscope. This led him to claim the existence

of only four or five kinds of bacilli in the faeces, hence in the intestines, and to deny the existence of micrococci. To one of the forms he attached special fermentative and digestive powers, which he held were of decided assistance to the process of digestion; thus from experimental grounds advancing Pasteur's idea that, were it not for the action of the bacteria in the intestines our digestion would fail, and human life become impossible,—a very pretty theory which has by its sensational nature recommended itself to many, but has failed to find support in facts, as yet discovered. In his last article Bienstock entirely dropped this subject, and it is only mentioned here as it has found its way into not a few books.

The last form described by Bienstock is his drumstick, a very powerful decomposer of albumens, and not to be found in the faeces of sucklings. In regard to this form Bienstock again seems to be in error. No one else has found it, but it has been shown to be a very dangerous source of contamination of the various nutritive media employed, being very hard to kill. Escherich at one time described the form as occurring, but later found it to be a contamination.

The researches of Brieger,⁹ Vignal,¹⁰ Stahl¹¹ and Escherich,¹² have now proven that a large number of species may occur in the faeces. Brieger isolated two new kinds, one a micrococcus, which turns grape or cane sugar into ethylalcohol, with a trace of acetic acid; the other, the well known Brieger's bacillus. This species occurs in vast numbers in the faeces, ferments sugars and decomposes albumens.

Vignal isolated ten species from the faeces, six of these being also found in the mouth. Of these some produced acid fermentations and gas. Unfortunately they were not studied sufficiently to show their effects on digestion.

Miller has already been referred to in treating of the stomach; the inaugural dissertation of Kuisl,¹³ has not been seen.

This brings us to the work done by Escherich, and the conclusions to be drawn from the same. This author studied the faeces of infants, the intestinal contents at autopsies, and found a large number of kinds. Among them, a small bacillus capable of converting milk sugar into lactic acid, carbonic dioxide and hydrogen gas being evolved, either in the presence or absence of air—in scientific parlance, a facultative anaerobic species, his bacillus lactis aerogenes. Escherich also studied and described at length the action of Brieger's bacillus under the name of bacillus coli commune.

Both of these forms are fatal to guinea-pigs and rabbits when introduced into the venous system. Post-mortem examination, showing the spleen and kidneys normal, marked injection of the upper part of the intestine, mucous membrane swollen, chyme thin, alkaline, mixed with much mucus, Peyer's patches appearing as swollen, resistant, bluish-red spots through the serous coat: in places, superficial epithelial loss. With Brieger's bacillus, diarrhoea also occurred at times.

⁶ De Barry. *Archiv. f. Experiment. Pathol. u. Pharmacol.*, 1886, Vol. XX, pp. 24 and 270.

⁷ Macfadyen. *Journal of Anat. and Physiol.*, 1887, Vol. XXI, pp. 227 and 415.

⁸ Bienstock. *Fortschr. d. Medicin*, 1883, p. 609; *Zeitschr. f. Klin. Med.*, 1884, p. 1.

⁹ Brieger. *Zeitschr. f. Physiol. Chem.*, 1884, p. 366.

¹⁰ Vignal. *Archiv. de Physiologie*, 1884, p. 492.

¹¹ Stahl. *Verhandl. des III. Congress. f. innere Medicin*, 1884.

¹² Escherich. *Die Darmbakterien des Säuuglings und ihre Beziehung zur Physiologie der Verdauung*, 1886. Also for shorter notes see *Deutsch. Med. Wochenschrift*, June 14, 1886, *Therap. Monatshefte*, Vol. I, 1887, p. 389; *Centrabl. f. Bacteriologie*, Vol. II, 1888, p. 64; *Fortschr. d. Med.*, 1886, pp. 515 and 547.

¹³ Kuisl. *Darmbakterien*. Inaug. Dissert. München, 1885.

In addition to the two pathogenic forms just mentioned, Escherich found *proteus vulgaris* in meconium *streptococcus coli gracilis*, *bacillus subtilis*, and several other forms of less interest.

The great point is that by the examination of a large series of cases Escherich has been able to establish the fact that the kinds occurring in the faeces vary with the food; that is, the intestinal contents.

Starting at birth with the sterile meconium, consisting of mucous, epithelium and the like, infection by the mouth and rectum quickly occurs, and in a short time most any form may be found, but chiefly putrefying forms, as *proteus vulgaris*. With the suckling of the child and the substitution of the refuse of the milk and secretion of the digestive tract for the meconium, a sharp transition occurs. Instead of the generally distributed forms causing decomposition, only two kinds are regularly found: *B. lactis aerogenes* and Brieger's bacillus; the first chiefly in the upper parts of the intestine, the second in the lower parts. Passing on to the period of mixed diet, quite a number of forms appear, among them the *streptococcus coli gracilis*, the putrefying green fluorescing, a tetrad coccus, and several kinds of yeasts. This brings us to the pith of the subject: why are the flora so limited in the milk-eating infants and so diverse in others? What drives the forms found in the meconium out? That they can live there is clear, as shown by their presence the day before. Again, what prevents forms so common with meat diet from gaining a footing? It is not the milk alone, for milk is an almost universal food for bacteria, and all the kinds found in the intestines thrive in it.

Escherich answers as follows: the bacillus *lactis aerogenes* and the milk diet keep out the other forms.

Formerly, even before the nature of ferments and putrefactive processes were clearly understood, the significance of this question was seen. The chyme is a mass admirably adapted for putrefaction or fermentation, yet, ordinarily, but little of either occurs. It is an alkaline, or, as in the milk-fed, acid mixture rich in albumens, fats, and the starch group, amply provided with water and warmth. Such a mixture outside the body at an equal temperature would quickly decompose. It was generally held that some preservative action was exerted by the digestive juices; Bidder's and Schmidt's dogs with biliary fistulae were held to explain the whole. These dogs, deprived of their bile, became emaciated, and suffered from diarrhoea and decomposition of the intestinal contents. Thus it seemed clear that in the absence of the bile decomposition occurred; that is, that the bile was a powerful geruicide or germ-inhibitor. During the last few years, however, different results have been obtained in cases of biliary fistula. Röhmann's¹⁴ dogs did not suffer from diarrhoea or putrefaction in the intestines; hence it is clear that the bile is not the cause of prevention. The diarrhoea, if present, is due to the large amount of fat passed on to the lower intestines.

Maly¹⁵ and Enich¹⁶ ascribed value to the bile acids, especially the taurocholic, basing their results on crude methods; and Lindenberg,¹⁷ really leaving the subject, attributed the action to the organic acids in combination with the bile.

All this argument and belief in the decided germicidal action of the bile occurred in the face of the well-known fact that bile itself will decompose.

From a bacteriological standpoint, Miller has shown that a ten per cent. solution of bile, if anything, favors growth. Macfadyen has studied bile, bile salts, and bile acids in varying strengths. The only positive results were got with the acids, these arresting development of bacteria if sufficiently strong, especially taurocholic acid. Neither acid had much effect, and least of all on the forms causing putrefaction. *Proteus vulgaris* was only arrested by a strength of from one to two per cent. The pathogenic forms were arrested by a much smaller quantity, from one to one-half per mille.

It is thus clear that other causes must be sought for. One of these is to be found in the lack of oxygen in the intestines, as pointed out by Escherich and strangely forgotten by others. There is certainly very little free oxygen in the chyme, if any; not only is it scarce in the food at the start, but is taken up by the chemical changes during digestion, and also by the intestines. This clearly must be a potent factor, for the majority of bacteria require a fair supply. Accordingly, many bacteria are found in the faeces which will not grow in the air, as shortly stated by Macfadyen, and the mass of those isolated in the air are able to grow without it.

This apparent contradiction, the absence of oxygen in the intestines, and the presence of both aerobic and anaerobic bacteria is probably explained by the ability of the aerobic kinds to draw oxygen from oxyhæmaglobin. They thus breathe through the intestines, as it were, when in close contact with the walls, while the anaerobic kinds live in the mass of the chyme, and do not, so far as we know, reduce oxyhæmaglobin.

Escherich, though he points out the absence of oxygen, does not seem to give it full value, or rather forgets the subject in treating of the action of his lactic acid bacillus. As before stated, this form is regularly found in great numbers in the upper part of the intestines of milk-fed children. Here it converts a considerable part of the milk-sugar into lactic acid (Baginsky¹⁸ says acetic acid, but has given no proof), and thus prevents the other forms from growing, most forms being very susceptible to an acid reaction, and especially to the organic acids. The action of salicylic acid is known to all, and recent experiments, of which Macfadyen's (the last are the best) show acetic, butyric, and lactic acid to be efficient germ-inhibitors in strengths of from one to one-half per mille, according to the species.

In milk-fed infants another point is the comparative inability of bacteria to attack casein, so that the bacteria are literally starved.

To sum up, we may conclude that the bile acids, lack of oxygen, lack of suitable albumens, and the presence of organic acids are the causes of immunity from the putrefying and fermenting kinds of bacteria to which we are exposed. Certain forms are probably limited by the lack of water, that is, fluid state, doing poorly if unable to swim freely about. It must not, however, be supposed that bacteria are scarce in the intestines, on the contrary they form a large part of the dry substance of the faeces.

Brieger's bacillus has been passed by us as of no im-

¹⁴ Röhmann. Beobachtungen an Hunden mit Gallentistel. Breslau, 1882.

¹⁵ Maly. Hermann's Physiologie, 7^{te} p. 181.

¹⁶ Enich Sitzberich. d. Akad. d. Wissensch. Weim., 1882.

¹⁷ Lindenberg. Upsala Forhandlingar, 1884.

¹⁸ Baginsky. Deutsch. Med. Wochenschr., 1888, Nos. 20 and 21.

portance in reference to the above. It thrives in the lower part of the intestine, feeding on the refuse passed on from above, and secretions and excretions of the tract. The species has a fermentative action, producing alcohol and a trace of acetic acid (Brieger), a powerful action on proteids and breaks up fats (Escherich).

Passing from the normal condition of the intestines to those of indigestion and diarrhoea, more especially of infancy, while there is little worked out to a conclusion there is much of value to be applied in treatment. It is known that in the cases of indigestion accompanied by the eruption of gas and not a few cases of vomiting bacteria are playing an important role, often are the causes. Such cases of indigestion are usually characterized by the eructation of gas after meals and a sense of oppression due to the disturbed digestion and dilatation of the stomach. A certain small amount of lactic acid occurs in our food, the same is true of acetic acid, but butyric acid should be practically absent. In normal digestion a small amount of the first two is of no harm, and one of them seems to play an important part in the upper part of the intestines. Butyric acid is an offensive compound and acts as an irritant in the stomach. Any of these acids produced in quantity in the stomach are injurious, tend to cause and keep up catarrh. The gas given off during the production of the acids not only oppresses by unduly dilating the stomach, but must interfere with the mechanical action of that organ. We now know that the stomach does not lie across the body but more up and down, the pylorus being below. In this position the food tends to fall to the pylorus and is constantly worked up towards the cardiac end by muscular action, the more fluid parts running back and down into the duodenum. Gases, easily compressible as they are, must interfere with this pumping or driving motion and render the mechanical work of the stomach less effective, impeding an intimate mixture of the food and gastric juices and thus hindering proper digestion.

As pointed out by Taube,¹⁹ since the stomach dilates chiefly on the side of the greater curvature, hyper-extension brings the curvature below the pylorus. In this case all fluids will gravitate to the pocket thus formed instead of to and through the pylorus.

Recently Klemperer,²⁰ in studying the hydrochloric acid in the stomach has developed the fact that much of the disagreement as to the hydrochloric reaction in cases of cancer of the stomach, and dilatation depends upon the bacteria contained in the juices. The bacteria act in two distinct ways. First, according to the well known law that a mixture of acids combine with a base in quantities according with the strength of the acids, the various organic acids produced by fermentation drive out a small part of the hydrochloric acid. Second, other products of the bacterial growth as the ptomaines, form compounds with the hydrochloric acid sufficiently strong to prevent the bluing of methyl violet, but not sufficiently strong to resist the other tests commonly used. The acid thus combined is taken away from the digestive process, which is proportionately weakened. In normal digestion the amount of hydrochloric acid thus taken up varies from .6 to 1 %, while in a case of cancer it rose to 2.5 %.

Klemperer worked not only with the ptomaines pro-

duced by the growth of Brieger's bacillus in milk, but also with those isolated from the gastric juice in a case of cancer of the pylorus.

The diarrhoeal troubles of adults have not been sufficiently studied bacteriologically, and little is known of them. In a few cases examined by myself the proportion of Brieger's bacillus to the other aerobic forms has been reduced, and two or three putrefying forms decidedly increased, among these the putrefying green fluorescing. Pure cultures of this plant give off an offensive odor closely resembling those of the stools from which they were taken.

In this connection it is interesting to note that the period of raw small fruit, salads and the like, is the period of intestinal troubles. In other words, the consumption of raw—that is, not sterilized—foods, which by their nature and surroundings are exposed to all sorts of bacteria, goes hand in hand with the prevalence of functional intestinal trouble. The small fruits are eaten whole, together with a board of bacteria, large fruits eaten later are peeled, that is, prepared, much like a potato for a pure culture.

On the whole, bacterial overgrowth in the stomach tends to the so-called ferments in the intestines to putrefaction.

Of the summer diarrhoeas of infancy we really as yet know nothing specifically. Bacteria are very abundant, the putrefying group coming forward. Lately Escherich, in an article of which I have only been able to procure a notice, reports that the spiral forms are unusually abundant in cases of diarrhoea, but regards them as a result rather than cause of the trouble.

The only claim worthy of consideration to the discovery of a specific organism has been put forward by Lesage.²¹ This author describes a form as constantly occurring in great numbers in the stools of a certain class of diarrhoeas, the clinical aspect of which corresponds with an ordinary case with an elevated temperature. This plant produces a green coloring matter, is easily grown, and, according to the author, has a very bizarre method of development. Not only does the plant show a tendency to grow into threads, later splitting up into bacilli, but it produces endogenous spores, which in turn give off a number of daughter spores by budding, these growing into bacilli and threads. So far as known to me this is an utterly new method of growth among bacteria, indeed, removes the plant entirely from the class. Another peculiarity is that the spores are more rapidly and deeper stained than the vegetative cells. This plant, Lesage states, produces green diarrhoea if introduced into the intestines or stomach, and one syringe full introduced into the ear vein of a rabbit produced a slight green diarrhoea. The plant was recovered in the intestines. Pure cultures were found to be quite sensitive to lactic acid, so Lesage adopted a lactic acid treatment for these cases, giving large doses, and reports extremely favorable results, in fact, a specific action.

As yet no confirmation of Lesage's observations have come to hand. My own search for the plant in the few suitable cases to be found so early in the year have failed. The nearest thing to it found was the putrefying green fluorescing bacillus. This has a green color, but lacks all the other characteristics of Lesage's plant. Baginsky has discredited Lesage's results, and considers the plant to be the green fluorescing bacillus, which it certainly is not, for the plant

¹⁹ Taube. *Schmidt's Jahrbücher*, 1887.

²⁰ Klemperer. *Zeitschr. f. klin. Med.*, 1888, p. 147.

²¹ *Archiv de Physiol.*, 1888. Feb. 15th, p. 212.

has no such mode of growth. The entire thing is very strange, and needs abundant confirmation before being accepted. At the present time there seems to be no reason to expect a specific, but rather that the whole trouble begins as a reaction to noxious products of various species and runs on in the course of time from a condition of pathological physiology to one of pathological anatomy, loss of substance occurring in the epithelium.

With the growth of our knowledge of the active part played by bacteria in the various troubles of the alimentary canal a decided change has occurred in the treatment of the same. These changes have for the most part been instituted without any clear idea of their action, survived in virtue of their efficacy, to be later modified, perfected and guided by the light thrown upon them by bacteriology.

The recent changes in the treatment of gastric catarrh so ably presented in this journal by Knapp, at once reveal the fact that an efficient anti-germ treatment is now followed; not only is the stomach washed out, that is, the field weeded, but the soil mucus and refuse of food is removed, and a weak poison left in its place at times. The well-known use of creosote, sublimate and calomel probably owe their utility to their impairing the bacterial growth. Various efforts have been made to kill the unwelcome guests in the intestines by means of drugs. In the diarrhoeas of infancy this subject has been attacked from three sides, by the use of drugs, by the care of the food, and by change of diet. All three methods are rational and worthy of use, often together. Other things being equal, modern physicians would eschew drugs, and the laity rush for them. They would rather take medicine than trouble. From a therapeutic side efforts have been made to find something to kill the plants and not the child. These drugs may be classed as mild antiseptics, as organic acids and antiseptics, soluble and insoluble. Barring Lesage, there does not seem to be any strong enthusiast in favor of the acids; though the curative effect of sugar has been pointed out by some. Sugar acts by being changed to acids in the intestine. With the germicides there is still quite a rage, due in large part to the assumed destruction of the germs. As a fact the germs are only slightly reduced in numbers by the most successful drugs. A drug to be antiseptic must be soluble, if soluble it is at once taken up by the intestines, thus being removed from where it is wanted and put where it is not wanted in the child's system. If insoluble, or rather slowly converted into a soluble active form, the action is weak, and absorption still occurs, only in small quantities throughout the gut instead of all at once in the upper part. Reasoning gives hope of but slight success with germicides, while the great number of things recommended strongly suggests insufficiency of all. Were any drug markedly successful the others by selection would quickly be excluded.

Again, if, as appears, Escherich's ideas of the value of his lactic acid bacillus are correct, we would by the use of germicides only open the field to any form that might chance to gain access.

Possibly there is hope of better results to be obtained by the use of drugs directed, not to the destruction of the germs, but to the alteration of their poisonous products. No effort seems to have been made to attain this result, except by the administration of acids

and alkalis. I have suggested that iodoform²² may have this effect. It certainly removes odor from putrid fluids quickly, though it does not kill the bacteria. This may be a simple case of concealment, but as the effect is a half-hour in development it is doubtful. We know that the administration of iodoform removes the aromatic compounds from the urine. Unfortunately, iodoform is decidedly poisonous, causing fatty degeneration, and its products secreted in the saliva combine with the metals of our eating utensils to form most revolting compounds in the mouth.

Naturally it has long been the custom when the infant suffered on one kind of food to change to another. Thus peptone solutions, albumens, and various starch and dextrine solutions are still much used; to say nothing of the various patent foods consisting when given, of cow's milk, starch and its derivatives. Wine whey, a very old preparation, seems to have dropped out of use in this vicinity, but still holds its own in England and Ireland.

All these efforts to find a more satisfactory food have been the natural result of failure, and directed purely on empirical grounds; often change after change being made until a successful food was hit upon or the child died. Escherich's work now opens the field to more intelligent work. The secret of the value of change of food according to him lies in the effect upon the bacteria. Some of these attack the starches, others sugars, or both sugars and starches, while at the opposite end of the series albuminates are attacked and putrefaction results.

Either group, ferments or putrifiers, is undesirable. The ferments act by the production of various acids, chiefly from the milk sugar. In small amounts, as in the case of *bacillus lactis aerogenes*, the acid seems to be of benefit, certainly does no harm as it regularly occurs in healthy breast-fed infants. In larger amounts, however, it must tend to over-acidify the contents of the intestines and upset the action of the digestive fluids.

Bokai²³ has recently shown that the various organic acids have a very decided effect on the motion and blood-supply of the intestines. The intestines of rabbits were exposed in a warm normal salt solution bath. All the acids were found to increase peristalsis, lactic, succinic and acetic acid with constriction of the bloodvessels; valerianic, butyric, formic, propionic, capric and caprylic acids with dilatation of the same. One or two grammes exhibited by the mouth produced diarrhoea, smaller doses a catarrhal state, and larger a positive inflammatory state.

These observations pave the way to Baginsky's theory, practically an acceptance of Escherich's ideas, that the lactic acid bacillus growing in superabundance irritates the digestive tract, causing diarrhoea, and if continued, brings about its own death by the superabundance of acid produced. In this case the acid is quickly passed on and the gut is left open to the putrefying alkali frequenting forms.

The value of Escherich's work here comes in; he suggests that the change of food should be governed so as to starve out the rampant ferment. If the ferment is an acid one, to give a food free from sugars and starches, if an alkaline one, free from albumens and

²² Jeffries. *Am. Jour. Med. Sciences*, 1888, January. Behring has just shown this to be true of cadaverin. *Deutsh. Med. Woch.*, Aug. 9, 1889.

²³ Bokai. *Archiv. f. Experim. Path. u. Pharm.*, 1887. Vol. xxiv, p. 153.

calculated to encourage the lactic acid bacillus to a normal growth. In the first case Escherich suggests peptone solutions, in the second, dextrose solutions.

Baginsky accepts Escherich's principles, but claims that he has forgotten the child and that empirics have their place. He points out that peptones are known to be poisonous if introduced into the system, and often cause diarrhoea. Unfortunately, Baginsky is not clear as to what should be given. Dextrose is also objected to on account of the impurities contained and milk sugar suggested as a substitute.

Lastly, Escherich has refuted Baginsky's objections and referred to the favorable results obtained by Ehrling. That cane sugar, glycerine, dextrose and starch stop putrefactive processes in the intestines is proved by Hirschler's experiments. This author showed that the products of decomposition were absent in urine and faeces of animals treated with these foods.

Baginsky attaches great value to calomel in the early stages, on purely empirical grounds, since Morax has shown that the drug does not affect the aromatic group.

It is probable that kephir will prove to be a valuable food in the cases of acid diarrhoea. This is milk fermented by the kephir grains composed of two or more kinds of bacteria. By the growth of the plants the milk sugar is broken up; alcohol, lactic acid, carbonic dioxide and hydrogen being formed. The injurious constituent of the milk, the sugar, is removed, and the casein is curdled in fine flakes and so cannot form a mass in the stomach.

Is the reaction of the stool a sufficient index to the ferment in the intestine? Escherich thinks it is. Baginsky and Vaughn²⁴ doubt it. Here the study of the urine by Morax,²⁵ Baumann,²⁶ and Hirschler²⁷ come into play. These authors have shown that the sulphuric ethers and aromatic compounds of the urines vary with the amount of putrefaction in the intestines. Thus by a quantitative analysis an exact knowledge of the ferment is to be obtained.

Though not treating of bacteria in the intestines, Vaughn's work on tyrotoxicon cannot be passed by, and leads the way to the last and most radical part of the subject, prophylaxis. Vaughn has isolated from milk, ice-cream, and the like an active poisonous compound, which produces symptoms much like those of cholera infantum. This compound, diazobenzol, is produced in milk excluded from the air, and at a temperature of at least 60°. The bacterium producing the trouble has not yet been found. It is very likely an anaerobic species.

Vaughn's article suggests that the tyrotoxicon plant may be the cause of cholera infantum, but does not frame the idea.

Very recently, Behring²⁸ has announced that cadavarin, pentamethylindiamin, produces death in guinea-pigs, with symptoms and post-mortem resembling Koch's artificial cholera in the same. Cadavarin is freely formed by the cholera bacillus in alkaline solutions, commonly occurs in decaying bodies, as indicated by its name, and may be, therefore, an element in the diarrhoeas of infants and adults.

Taking up the subject of prophylaxis, it is clear that the general laws of health must be attended to,

that mother's milk is better than cow's milk, and, as shown by Rotch,²⁹ that quantity and quality of all foods must be attended to. Over and above this, the feeling that the summer diarrhoeas are due to changes in the food, that is, to bacteria in the same, has been steadily gaining ground for some time.

With this consideration in view, great care has been given to the food-supply, ice employed, and the like; also cooked food given.

In 1886, Soxhlet³⁰ published an article recommending the sterilization of milk by immersion in boiling water for forty-five minutes, the flasks containing the milk to be closed after being heated. Soxhlet made no bacteriological study of the subject, and simply took the curdling of the milk as a sign of infection. Measured by this standard, the milk kept about three weeks. Unfortunately, milk becomes full of bacteria and seriously altered before curdling occurs, and certain species do not curdle milk. Soxhlet kept the deadly, long sucking-tube, and advocated a very complex apparatus of bottles, cages, and water-baths.

In the summer of 1884, my attention was first directed to steaming the milk for infants, being guided by the custom of housewives. Receipts are to be found in the cook-books for preserving milk and cream for a long time, the principles of which are the addition of a moderate amount of sugar, then bottle, and all to be heated in boiling water for some time, the cork, also scalded, to be driven home while the whole was hot. In short, the whole of Soxhlet's method packed in a nutshell.

In 1887, on returning from Europe, my attention was again called to the subject, and every child under my care put, as far as possible, on steamed milk. Being pleased with the results, and learning that Dr. Ernst had used a similar method for three years, I determined to work the subject out from a bacteriological point of view, and obtain some reliable, simple method capable of general cheap application. The results were published in a paper,³¹ from which I quote:³²

"Stopper the flasks (that is, those from which the child is to be fed) with cotton-wool, and heat them in the oven for thirty minutes at a mild baking heat, or until the cotton becomes brown. Pour the requisite quantity of food into the flask, and then place in the heated steamer for fifteen minutes."

If this method is followed, the milk will keep for a long time practically free from bacteria and their injurious products. The first rule is a refinement, and, in view of the work of Wolfhügel and Beidel,³³ desirable. These authors have shown that pathogenic germs in washing water could cling to the vessels and infect milk put in them.

The steaming must be thorough, but any simple steamer will do, provided it is filled with live steam. The milk should be steamed *at once* on receipt from the milk-man; otherwise the child will get a sterile food already charged with the poisons of decomposition.

No expensive and complex apparatus is needed, and on a pinch an ordinary medicine-bottle placed in the

²⁹ Rotch. *Archiv. für Pediatrics*, August, 1887.

³⁰ Soxhlet. *Monch. Med. Wochenschrift*, 1886, p. 258.

³¹ *Jeffries. Am. Jour. Med. Sciences*, May, 1888.

³² Soxhlet's article was not referred to in my paper, as I did not then know of it, nor, indeed, have I been able to find any person present at the time it was read who had seen Soxhlet's article.

³³ Wolfhügel u. Beidel. *Arbeit. a. d. kaiserl. Gesundheitsamt*, 1, 1886.

²⁴ Vaughn. *Medical News*, 1888. *Practitioner*, 1886, p. 232.

²⁵ Morax. *Zeitschr. f. physiol. Chemie*, 1886, p. 318.

²⁶ Baumann. *Zeitschr. f. physiol. Chemie*, 1886, p. 123.

²⁷ Hirschler. *Zeitschr. f. physiol. Chemie*, 1886, p. 306.

²⁸ Behring. *Deutsch. Med. Wochenschrift*, June 14, 1888.

tea-kettle will nearly fill the requisites. Cotton-wool is the proper stopper; it cannot be blown out, hence can be put in before steaming, and is germ-tight. Any stopper put in after steaming is not itself disinfected. When the child is to be fed, take out the cotton plug and put on a short rubber nipple. It is absurd to struggle with a sterile mouth-piece so long as the infant's mouth is swarming with bacteria: the value of the method lies in the integrity of the milk.

We thus see that a good start has been made, much knowledge gained, and much to be looked for. The very gaps in our knowledge show that the subject is a far-reaching one. Bacteria form a part, perhaps large part, in the balance of forces in the intestines, which results in normal digestion. Any disturbance, be it from the food, bacteria, or the intestines, throws the balance out and results in disease.

OBSERVATIONS ON THE SURGICAL TREATMENT OF MALIGNANT GROWTHS.¹

BY MAURICE H. RICHARDSON, M.D., OF BOSTON.

Tumors of the Testicle.—Next in death-rate come tumors of the testicle. Seven out of nine are now dead. Of the living, one was probably tuberculosis, and the other a large-celled sarcoma. One died from the operation, one in two months, one in four, one in five, one each in nine, eleven and fifteen months. This is a very unfavorable showing, yet excision seems to be the duty of the surgeon, with the usual care in the consideration of the contraindications. The cord should be ligated as high up as possible, and any glands in the groin removed. The presence of glands affected beyond Poupart's ligament of course contraindicates the attempt.

Epithelioma of Face and Scalp.—Cases heard from, 67; not heard from, 47; total, 114. Living, 34; without recurrence, 22; with recurrence, 12.

1874. Cases, 8. Living, 1. Dead, 7—1 at 24 m., 1 at 84 m., 1 at 84 m., 1 at 10 m., 1 at 96 m., 1 at 72 m., 1 at 12 m.

1879. Cases, 5. Living, 3. Dead, 2—1 at 48 m., 1 at 84 m. (no recurrence).

1880. Cases, 14. Living, 4. Dead, 10—1 at 72 m. (suicide), 1 at 16 m., 1 at 12 m., 1 at 36 m., 1 at 41 m., 1 at 84 m. (suffocated by gas), 1 at 7 m., 1 at 7 m., 1 at 30 m., 1 at 48 m.

1881. Cases, 4. Living, 2. Dead, 2—1 at 13 m., 1 at 60 m.

1882. Cases, 10. Living, 4. Dead 6—1 at 29 m., 1 at 5 m., 1 at 12 m., 1 at 31 m., 1 at 72 m. (old age), 1 at 15 m.

1883. Cases, 11. Living, 7. Dead, 4—1 at 11 m., 1 at 18 m., 1 at 22 m., 1 at 9 m.

1884. Cases, 2. Living, 2. Dead, 0.

1885. Cases, 6. Living, 5. Dead, 1. 1 in hospital.

1886. Cases, 7. Living, 6. Dead, 1—1 at 22 m.

Cases, 67. Living, 34. Dead, 33. Av. 37 m.

I consider that this is one of the most important classes of cases. The number of operations on these as on many of the other classes has been much greater than the records show, because the milder cases have been treated as out-patients. The high death-rate in my list is due to this fact in part. I have no doubt that the percentage of cures among the out-patients has been very high indeed, because this form of cancer is one of the least malignant at the outset, and most easily cured by proper treatment.

Of one hundred and fourteen cases I have heard from sixty-seven, of which thirty-four are living and thirty-three dead. One has lived ten years; three,

nine years; four, eight years; two, seven years; four six years; seven, five years; two, four years; five, three years; six, two years.

Of the thirty-three dead, there was no recurrence in four; two of whom died of old age, one was suffocated by gas, and one suicided. The average duration of life was thirty-seven months. One lived ninety-six months, four lived eighty-four, three seventy-two, one sixty months, etc., etc. One died from operation.

The replies which I have received in these cases have shown, in a most graphic way, the terrible ending of life in this form of malignant disease. No other class of cases emphasizes more strongly the importance of early excision, even to mutilation, in the early stages. Certainly no other form of cancer offers greater hope of cure than this, unless it be epithelioma of the lip when radically excised. I would advocate most strongly the earliest possible excision in all cases where the disease shows a tendency to penetrate to the deeper parts, or to invade such structures as the eye. In the superficial varieties where there is nothing but a scab on the skin, where the disease is hardly more than a keratosis, the curette or the cautery may be used, and in many of these cases such treatment has been followed by cure. But in the deeper kinds, where, for example, there is a deep ulceration of the inner canthus, I would advise and perform excision so deep and thorough as to ensure a healthy margin, regardless of any other parts whatever, even to enucleation of the eyeball. Here again we have to meet the natural objections of the patient, but our duty is not done till this has been impressed upon his mind. I have no doubt that some of the fatal cases in this list were useless operations. One at least was my own, which I should not for a moment think of undertaking now, where the cheek was extensively infiltrated, but no glands were involved as far as I could make out. Unless a wide margin is sure the disease should be let alone as far as any operation for cure is concerned.

In this connection I would like to say a word in regard to the use of the curette and the actual cautery. In the superficial cases nothing could be more satisfactory than the curette, or perhaps the cautery. Where the deeper layers of the skin have become involved or the subcutaneous tissues, I believe that these methods are worse than useless,—that is, as a means of cure. Both methods must fail of complete removal because it is impossible to see and recognize the healthy tissues when they are reached.

Cancer of the Lip.—Probably no class of cases offers a better outlook than this, if taken early, and if thoroughly treated. Of seventy-five cases, most of them severe, I have heard from fifty-one, with twenty-six living and twenty-five dead.

1878. Cases, 4. Living, 0. Dead, 4—1 at 12 m., 1 at 12 m., 1 at 12 m., 1 at 108 m.

1879. Cases, 6. Living, 2. Dead, 4—1 at 56 m., 1 at 12 m., 1 at 24 m., 1 at 11 m.

1880. Cases, 3. Living, 1. Dead, 2—1 at 29 m., 1 at —.

1881. Cases, 7. Living, 4. Dead, 3—1 in hospital, 1 in 60 m., 1 in 29 m.

1882. Cases, 5. Living, 2. Dead, 3—1 in 13 m., 1 in 10 m., 1 in 18 m.

1883. Cases, 6. Living, 3. Dead, 3—1 in 5 m., 1 in 23 m., 1 in 15 m.

1884. Cases, 5. Living, 3. Dead, 2—1 in 9 m., 1 in 29 m.

1885. Cases, 4. Living, 3. Dead, 1—1 in 25 m.

1886. Cases, 11. Living, 8. Dead, 3—1 in 24 m., 1 in 12 m., 1 in 15 m.

Cases, 61. Living, 36; dead, 25. Av. 26 $\frac{2}{3}$ m. Died without return, 4. Died of original disease, 21.

¹ Concluded from page 196.

1878—no cases lived 10 years. 1879—2 lived 9 years. 1880—1 lived 8 years. 1881—1 lived 7 years. 1882—2 lived 6 years. 1883—3 lived 5 years. 1884—3 lived 4 years. 1885—3 lived 3 years. 1886—8 lived 2 years. Total, 28 cases living. With recurrence, 2; no return, 24.

As in the previous class, but one died from the operation.

The recurrence is very much more likely when the submaxillary lymphatics have been involved. I would not say that such infection is a contraindication, unless there is a large and adherent mass in the neck. The invasion of the jaw, also, makes the outlook very serious. Where, however, the cheek is infiltrated to any extent, and the lymphatics below the jaw are invaded, as well as the jaw, it seems to me that the case offers so little hope of permanent cure as hardly to justify an operation.

In early cases, it is important to bear in mind that the wider the margin, the better the chances of cure, and also that the lip is a very elastic thing. One thinks he is leaving a very wide margin when the lip is stretched, but examination of the shrunken part when it has been excised often shows a very narrow one. I would leave at least half an inch of healthy lip on each side of the V. It is a good rule in this operation, as in all others for malignant growths, where it is practicable, to excise the tumor with a wide margin in every direction, and then, and then only, consider the question of closing the hole.

Cancer of the Penis.—Cases, twenty. Replies, ten. Living, six; dead, four. Two are living at eight years, one each at seven, six, five, and three years. One dead in twenty months, and one each in seven, seven, and eight months. One of the dead had circumcision, one curette, and two were amputated. In one of the amputations the inguinal glands were dissected out. In one of the living, amputation followed circumcision. In another, circumcision was done seven years ago. In the remaining four, amputation was done at first.

I believe that all cases of cancer of the penis should be treated by amputation well down to the pubes, except in the most trivial and circumscribed ones. The adoption of so radical a rule in all cases as early as possible would, in the absence of glandular infection, bring the percentage of cures very high indeed.

As a method of cure, I think the curette or cautery a waste of time.

Malignant Disease of the Extremities.—Cases, eighty-nine. Answers, fifty-six. Living, thirty-seven; dead, nineteen.

1 lived 24 m.	1 recurrence at 3 m.
1 " 36 m.	1 " 4 m.
1 " 24 m.	1 " 2 m.
1 " 84 m.	1 " 23 m.
1 " 4 m.	1 " 9 m.
1 " 4 m.	1 " 20 m.
1 " 12 m.	1 " 4 m.
1 " 37 m.	1 " 1 m.
1 " 6 m.	1 " 4 m.
	1 " 13 m.
	1 " 36 m.
	1 " 18 m.

Average duration of life, 253 m. in 9 fatal cases.

Average recurrence, 113 m.

Total dead, 19. In hospital, 10.

Died subsequently, 9. Died subsequently, without recurrence,

1. Died from original disease, 8 = 14.2%

Living, with recurrence, 1 = 1.7%

" without " 35 = 62.5%

" with 3 " 1 = 1.7%

Total living . . 37

contraindications. What I would urge is the more frequent resort to amputation in those cases which do not admit of satisfactory removal of the part itself. In infiltrating epitheliomata of the hand, sarcoma adherent to the bone, invasion of the lymph glands of the elbow or the popliteal space, without infection of the groin or the axilla, all forms of malignant disease of the bones—in all these amputation well above the diseased parts should be advised and performed, if the patient can be made to realize the necessities of the case. An analysis of these fifty-six cases will show most gratifying results of amputations, as compared with excisions of the tumors themselves. I have not had time to do this, but reserve it for a future paper.

Cancer of the Breast.—The number of tumors of the breast removed from November, 1877, to January, 1886, has been two hundred and seventy-four. I have received replies from one hundred and sixty-three. Of these, ninety-five are dead and sixty-eight living. Of the sixty-eight living, seventeen were not malignant. This leaves fifty-one living out of one hundred and sixty-three, 36 %. Of the living, I have found that eighteen were determined to be malignant by microscopic examination. In nineteen there was recurrence, twelve of which had not been examined by microscope, or, at least, the examination I have not as yet found. This would make the diagnosis of malignancy in the original tumor certain in thirty cases, recurrence being even more certain than microscopic examination.

There were twenty-three cases of death from the operation out of the whole number of two hundred and seventy-four, or 8.3 %. In the cases of cancer of the breast from the foundation of the Hospital to 1871, the mortality from the operation was twenty-three in two hundred and ninety cases, or 7.9 %. This, at first glance, is surprising, for the cases I have collected have all been done since the introduction of antiseptics. But the increased mortality is due to the greater thoroughness and severity of the operation.

The date of recurrence in sixty-two cases is 14.2 months. The longest immunity has been sixty-three months, and the shortest one month.

Cancer of the breast I have considered first in importance from the greater number of cases. From the tables it will be seen that the number of operations has not diminished during the past ten years. During 1887 and 1888, the number has been larger than ever before, and I venture to assert that the results will be more favorable. It does not seem to me justifiable to say, even in the face of these imperfect statistics taken from the Massachusetts General Hospital, many of them in Dr. Hodges's own service, that the operation is not successful enough to warrant renewed efforts, or that the operation is or is likely to be a thing of the past.

The percentage of deaths from operation is not large. Even with antiseptics, it seems to me that some must necessarily occur. The deaths from preventable causes have been surely diminishing. The operation, as it ought to be done, is a formidable one, but with a mortality of only eight per cent. it is not sufficiently great to weigh against the large percentage of permanent cures which is, I believe, sure to result from increased thoroughness of removal.

At my first operations on cancer of the breast in 1880, I determined to attempt to perform this operation in the most thorough and radical manner, espe-

It is in this class of cases that we may achieve brilliant results by early and radical operation, and in no other may the failure be more dismal and complete by the use of half-way measures. The same rules of treatment apply here as to other parts, and the same

These investigations alone show the necessity of dissecting out the axilla in all cases. There is no doubt that this method adds to the danger, as well as to the discomfort and impairment of the arm. Dr. Mixer has advocated a little different incision; namely, to carry the axillary cut well up on the *pectoralis major*, so as to close the axilla by untouched skin, which he fastens deeply to one of the serrations of the *serratus magnus* by means of a deep stitch. I have had little experience with this method, but it is claimed for it that there is little or no impairment of the movements of the arm afterward.

There is no doubt that this method, which ought to be followed in all malignant tumors of the breast, makes the operation a most formidable one. It is not an easy task to remove all the fat from the axilla without wounding any of the important structures it contains. Wounding the axillary vein is the greatest danger as regards immediate results, and is generally fatal in a short time. There is not so much danger of injury to either artery or nerve. There is, nevertheless, little excuse to be offered for cutting so large and prominent a vessel as the axillary vein, if the operator has ordinary skill and experience with the knife.

I do not agree with those writers who say that dissection of the axilla does not add to the dangers of the operation. It seems to me as absurd as to say that amputation of the thigh is no more dangerous than that of the leg. I have no doubt that it increases the mortality fully fifty per cent.

Another point in the operation of the greatest importance is the removal of plenty of skin over the tumor. I agree with Gross (*Am. Jour. Med. Sciences*) that the skin over the whole breast should be removed. It is here that the recurrences have taken place in all my cases, where any has appeared at all. I feel the importance of this method so much that I am almost inclined to say that in cases where the whole breast is involved, and where enough skin has been left to make a first intention possible, the operation has not been radical enough. I have several cases in mind where there has been long immunity, in which the wound healed by granulations entirely. One of the last cases I saw was found to have cancer infiltration in the skin outside the cut before the patient left the table, shown by fresh section and microscopic examination.

I would not operate in a case where there was infiltration of the skin to any extent, or where glandular infiltration could be detected above the clavicle, or where the axilla was filled with a large adherent mass of glands. Where internal organs are shown to be diseased, or the general condition of the patient is bad, I would not, of course, interfere.

I do not agree with Butlin ("The Operative Treatment of Malignant Disease") as to the partial removal of the breast. Where the microscope has shown the existence of cancer, I would take away the whole of the gland and the skin over it, as well as everything below it down to the pectoral, and, moreover, I would take with the gland the tissues about it, especially on the side next to the tumor.

I feel certain that if we follow this method of selecting the cases, especially, as I said in the introduction, if we incise every lump in the breast as soon as it is discovered, and subject it to the microscope; and when it is malignant, if we follow the method I have been advocating during the past eight years, we shall

be able to effect a permanent cure in a much larger percentage than hitherto.

In conclusion, I would say that I believe we are going to operate by improved methods upon cases much earlier discovered and recognized, and more carefully studied, with very much better results. The average operation is going to be more radical, it will be more thorough and more formidable, and more truly conservative, because it will only be performed when its most radical performance promises the greatest good; namely, at the beginning of the disease, and not when the near approach of dissolution has made it, as too often in the past, the most forlorn of forlorn hopes.

REPORT ON PROGRESS IN THORACIC DISEASE.

BY FREDERICK C. SHATTUCK, M.D.

THE TREATMENT OF CHRONIC DISEASE OF THE MUSCULAR TISSUE OF THE HEART.

At the recent Congress for Internal Medicine a session was given to this subject.¹

Oertel,² the referee, strongly advocated his method of treatment of these conditions by limitation of the ingesta, particularly fluids, and systematic exercise. Further experience has simply confirmed his first published opinions. The results claimed by him are summarized as follows:

(1) Invariable success in the later stages of fat-heart, uncomplicated by sclerosis of the coronary arteries, occurring mostly in persons advanced in years with serous plethora, venous stasis, and often oedema.

(2) Restoration of ruptured compensation and compensatory hypertrophy in cases of valvular disease, and impaired pulmonary circulation due to vertebral disease.

(3) Disappearance of marked dilatation of the heart-muscle — so far as it was not compensatory — dependent on weakness of the muscle, and increase of the intracardial pressure in valvular disease.

(4) As far as may be, the restoration of equilibrium between the arterial and venous systems, with relief to cyanosis, serous plethora, and an unduly watery or even oedematous condition of the tissues.

(5) Relief, partial or complete from respiratory symptoms. Further experience is needed to determine the permanency of the gains which result from this treatment. The first case reported by the referee — said, by the way to be his own — proves that the duration may be considerable. It is now thirteen years since treatment was begun, the loss of compensation with serious circulatory disturbances and oedema having existed for a year at that time, and the gain is perfectly maintained to-day. The prognostic value of this case is undeniable.

Lichtheim, the co-referee, thinks that Oertel's claims are excessive. His paper is summarised as follows:

(1) I consider Oertel's method eminently suited to those forms of chronic heart disease arising from immoderate eating and drinking and insufficient bodily exercise.

(2) In those affections, on the other hand, which are traceable to the distending influence of excessive physical exertion, or other cause, Oertel's method is of no avail.

¹ Beilage Zum Centralblatt für Klin. Med., 1888, No. 25.

² Vide Report on Progress Journal, 1887, I, p. 203.

In these exertion is only to be allowed when the compensation is tolerable, and it should then be graded. Patients of this sort must be treated much more cautiously than those with valvular disease.

(3) The administration of digitalis, strophanthus and caffeine is and remains the proper treatment for impaired compensation; where it fails the dietetico-mechanical does not succeed. Oertel's method may aid the drugs in removing the dropsy, but can never take their place.

(4) As long as the compensation is intact there is no reason to give drugs, except as now and then a symptom calls for interference. This is a period when diet and exercise are in place, and the principles laid down by Oertel, applied with judgment, may do good service. It should be added that Lichtheim is at variance with Oertel also as regards a more theoretical point. The latter believes that the blood is in a watery, dilute condition, in cases of failure of the heart-wall; but the former holds it as demonstrated that in uncompensated heart disease the concentration of the blood is not diminished, nay, that when dropsy is present the concentration may be increased.

Kisch endorsed this observation of the previous speaker, and added that experiments of his own showed that the blood of highly obese persons contains an increased rather than a diminished amount of red corpuscles, and also of hæmoglobin. Oertel's idea that there is in these two classes of cases a serous plethora is, therefore, erroneous. He also agreed with Lichtheim that the chief danger in disease of the muscular structure of the heart lies in stretching the muscle. Microscopic study of the hearts of fat people and of overfed geese have convinced him that fatty degeneration of the heart muscle is long delayed in these cases, and results from the pressure exerted on the bundles of muscular fibres by the growth of fat between them. But, before any degeneration occurs, the efficiency of the cardiac contractions is impaired by the load of fat on and in the wall.

In short, Oertel's treatment is applicable to only a very limited number of cases.

Fränzel also expressed himself as in agreement with Lichtheim.

Schott (Nauheim) has convinced himself that Oertel's theory of the existence of hydramic plethora in cardiac cases as the result of increased ingestion of fluid is mistaken. Hill-climbing is a form of exercise much better adapted to the end than the beginning of treatment; for the reason that it is difficult of control and accurate dosage, so to speak.

Kiegel finds it incomprehensible that the sweeping statement should be made — and it has been made repeatedly — that the dietetico-mechanical treatment is indicated in valvular disease in general. The different valvular lesions do not call for precisely the same treatment; more discrimination must be exercised than is common.

FATTY DEGENERATION OF THE HEART FROM INTRA-ABDOMINAL PRESSURE.

Bedford Fenwick³ gives a more detailed analysis of the twenty-two cases coming under his observation. The average duration of the abdominal distension was 22.7 months, the average age of the patients forty-four years. Sixteen of the cases were ovarian, three

fibro-cystic of the uterus, two renal, one omental cyst.

The diagnosis of the cardiac degeneration rests on:

- (1) A feeble and diffuse impulse, the sounds being dull at the apex, especially over the right ventricle.
- (2) A small, feeble and compressible pulse, fast or slow, but unduly accelerated by the slightest exertion, perhaps as much as thirty or forty beats a minute.
- (3) A tendency to local anæmia and local congestions, pallor of the skin, a tendency to faintness, even going on to syncope, and a constant inclination to yawn or sigh, or even a marked condition of dyspnoea, the age of the patient and the duration of the swelling are also to be taken into account.

The prognosis in advanced cases bad. The earlier the affection is recognized, and the sooner the determining cause can be removed, the better the patient's chances. An important practical lesson is not to delay operation too long. If the tumor cannot be removed, the pressure dangers should be prevented by early, and if necessary, by repeated tapping.

MOVEABLE HEART.

Rumpf⁴ reports five cases in which the heart, as was shown by the seat of the impulse and the area of dulness, changed its position in the thorax to an unusual degree in accordance with the position of the patient. In the most extreme case, the impulse in the erect posture was 61 to 62 cm. from the left sternal border; in the right lateral position it was just to the left of the sternum; in the left lateral in mid-axilla; the distance between these two extremes was 13 to 14 cm. The symptoms were inability to lie on either side without pain, oppression, and increased rapidity of the heart's action, with weakness, vertigo and partial disableness as regards work. Four of the five patients had either just undergone treatment for corpulence or lost much flesh, a fact which strikes the author as very significant. He propounds the theory that the undue motility is dependent on the loss of fatty tissue from about the organ.

(This explanation seems very fanciful, and one is more inclined to believe that the cardiac symptoms which were present, were due to debility resulting from rapid or excessive loss of weight, than to the shifting position of the heart. But it is well to know that the heart can move within such wide limits.—*REF.*)

TREATMENT OF CONSUMPTION BY RESIDENCE AT HIGH ALTITUDES.

Dr. C. Theodore Williams⁵ offers a contribution from his own practice, of one hundred and forty-one cases of phthisis treated in sanatoria in altitudes from 5,000 to 9,000 feet, in the Alps, the Rocky Mountains and the South African Highlands, during the last nine years, in order to deduce certain practical rules therefrom. The one hundred and forty-one cases have been tabulated for statistical purposes under the following headings: Sex; age; length of illness before the commencement of mountain residence; hæmoptysis; history and nature of cases; state of the lungs; medicine and diet; length of residence at high altitudes. The Alpine climate is then compared with that of Colorado and the South African Highlands. The results of this treatment have been tabulated under the heads of *General*; referring to the general health, vigor, and weight; and *Local*;

³ *Lancet*, 1888, i, p. 1067. Vide Report on Progress, Journal, i, p. 246.

⁴ *Beilage zum Centralblatt für Klin. Med.* 1888, No. 25.

⁵ *Lancet*, 1888, i, p. 924.

including the conclusions arrived at from the examination of the lungs. The general results are divided into (1) cured, 41.13 per cent., where the restoration to health was complete; (2) greatly improved, 29.78 per cent.; (3) improved, 11.34 per cent.; deteriorated, 17.02 per cent.; thus giving a total of 82.25 per cent. improved, and 11.34 per cent. deteriorated, including 13.47 per cent. of deaths. The local results of the one hundred and forty-one cases yield improvement, greater or less, in 74.82 per cent., (including arrest in nearly forty-four per cent.), deterioration in nearly 12½ per cent., and a stationary condition in 3.59 per cent. Among the first stage cases there was improvement in 91 per cent., and arrest of disease in 63 per cent., with deterioration in nearly 7½ per cent. Cases of unilateral first stage give 92 per cent. improved, and 70½ per cent. of arrests, and cases of bilateral affection yield 87.09 per cent. of improved, and 48.58 of arrests, and in the second and third stage cases there was improvement to a greater or less extent in 46 per cent., arrest in 10 per cent., and deterioration in 46 per cent. Single cavity cases gave better results than cavity cases with the opposite lung involved, and left lung cavities showed a less tendency to change, either for better or worse, than the right lung ones. The following conclusions are arrived at:

(1) That prolonged residence at high altitudes produces great improvement in the majority of consumptive patients, and complete arrest of the disease in a considerable proportion, such arrests being in a more or less degree permanent. (2) That in order to secure these advantages, patients must be free from pyrexia and all acute symptoms, and must possess sufficient lung surface adequately to carry on the process of respiration in the rarified atmosphere. (3) That the influence of the climate seems to promote a change in the lungs, either of a curative or destructive character, and to oppose quiescence. (4) That residence at high altitudes causes enlargement of the thorax, hypertrophy of the healthy lung tissue, and the development of emphysema around the tubercular lesions, and that this expansion of the chest is accompanied by diminution of the pulse and respiration rate. (5) That it is probable that the arrest of consumptive disease is partly owing to the pressure exercised on the tubercular masses by the increasing bulk of the surrounding tissue. (6) That the above local changes are accompanied by general improvement, shown in the cessation of all symptoms, and the gain of weight, color, and of muscular, respiratory, and circulatory power. (7) That consumptives of both sexes benefit equally by mountain residence, but that the age of the patient exercises considerable influence on the result. (8) That the high-altitude treatment seems to be specially adapted in cases where heredity and family predisposition are present. (9) That the climate is useful in cases of hæmorrhagic phthisis, and that hæmoptysis is of rare occurrence at the mountain stations. (10) That mountain climates are most effective in arresting phthisis when the disease is of recent date, but that they are also beneficial in cases of longer standing. (11) That the special effect of high-altitude residence on the healthy and sick are common to all mountain ranges of elevations of 5,000 feet and upwards. (12) That to ensure the full advantages of high-altitude residence, a period of at least six months is necessary in the majority of consumptives. In cases of long standing and extensive lesions, one or two years are

often requisite to produce arrest of the disease. (13) That in addition to the above examples, mountain climates are beneficial in (1) cases of imperfect thoracic and pulmonary development; (2) chronic pneumonia without bronchiectasis; (3) chronic pleurisy where the lung does not expand after removal of the fluid; (4) spasmodic asthma, without much emphysema; and (5) anæmia. (14) That they are contraindicated in the following conditions: (1) phthisis with double cavities, with or without pyrexia; (2) cases of phthisis where the pulmonary area at low levels hardly suffices for respiratory purposes; (3) catarrhal phthisis; (4) erethitic phthisis, or phthisis where there is great irritability of the nervous system; (5) emphysema; (6) chronic bronchitis and bronchiectasis; (7) diseases of the heart and greater vessels; (8) affections of the brain and spinal cord, and conditions of hypersensibility of the nervous system; and (9) where the patients are of advanced age, and where they are too feeble to take exercise.

Dr. Hermann Weber gave a few of the results of his own statistics of 106 cases treated at high altitudes. Of these 38 were cured, 28 improved, 16 stationary, and 10 deteriorated. Of 70 in the first stage, 36 were cured, 28 improved, 11 stationary, and 6 grew worse. Of 32 in the second stage, 2 were cured, 13 improved, 11 stationary, and 6 deteriorated. Of 4 in the third stage, 1 was improved, 1 remained stationary, and 2 deteriorated. Whilst granting that high altitudes did thus effect great good, Dr. Weber pointed out that equally good results might be obtained at lower levels if systematic medical and dietetic treatment were carried out at Falkenstein, near Frankfurt. From this place, which is only about two thousand feet above the sea level, Dettweiler's statistics (which are perfectly reliable) prove this contention. In Dr. Weber's cases the gain in weight was observed in 58 cases; weight remained stationary in 40, and 8 lost flesh. It was remarked, however, that patients could be well nourished before being sent to high altitudes, so that a gain in weight might thus be anticipated by previous treatment.

Drs. Pollock and Quain criticised Dr. Williams's paper, and maintained that equally good results could be, and, in fact, were obtained by medical and hygienic treatment in London. It is precisely those cases that are benefited at high altitudes that do well at home.

Drs. Tucker, Wise, Ewart, and Huggard spoke in favor of high altitudes.

Drs. De Haviland, Hall, and Williams agreed that cases of laryngeal phthisis do badly in the mountains, and the latter argued that at home, or on sea-voyages, or in warm places, good results could be obtained, yet that high altitudes yield far better results. This was shown in the actual arrest of the disease, which did not happen, or very rarely, when cases were treated elsewhere. By arrest he meant total disappearance of all physical signs of lung mischief, as well as restoration of the constitutional state.

PNEUMO-HYDRO-THORAX TREATED BY INJECTION OF STERILIZED AIR INTO THE CHEST.

Potain⁶ reports three cases of pleural effusion consecutive to pneumothorax of tubercular origin successfully treated by injection of sterilized air into the pleural cavity by the following method: A needle

⁶ Bull. de l'Acad. de Med., 1888, No. 17.

similar to that of a hypodermic syringe, attached by a fine rubber tube to a reservoir of air which has been sterilized by being passed through a strong carbolic solution and then through cotton, is introduced into the sixth intercostal space while the trocar of an aspirator is plunged into the seventh. The air is then allowed to flow in as rapidly as the fluid escapes, its flow being regulated by means of a clip on the tubing so as to maintain about a normal intrapleural pressure of 6 to 7 millimeters of mercury, as shown by the small metallic manometer attached to the aspirating apparatus. At each operation all the fluid was withdrawn, and it was repeated as often as the chest refilled, in one case four, in another five times. It was attended by no discomfort apart from the introduction of the needles, and was followed by great relief from all urgent symptoms. The final results were eminently successful; in all three cases the pneumothorax was cured without retraction of the chest, and in two the phthisical process was arrested. In the third case both lungs were affected, and the disease, which seemed checked for a time, went on to a fatal termination. The method is only applicable when the effusion is serous or sero-purulent, and not fetid, and should be deferred till the fluid has become either inconvenient from its weight or dangerous from its volume. It is contraindicated when there is a large communication with a bronchus, or the effusion is fetid. The advantages of the operation are that the dangers from a large quantity of fluid in the pleural cavity are avoided, as well as those arising from rapid evacuation of a large effusion; that the serious inconveniences of frequently repeated punctures are avoided, escaped, and the lung is allowed the possibility of slow and progressive expansion. Finally, cicatrization and cure of tubercular lesions seem to be favored by keeping the affected lung for a long time at rest.

EMPHYEMA AFTER FIBRINOUS PNEUMONIA.

Penzoldt⁷ is led to believe that this accident is commoner than is usually supposed, as he has recently seen seven cases. The course of the pneumonia in all the cases was severe, and the temperature failed to return to normal at the time the local symptoms indicated the crisis. This sign, however, often fails, and no other symptom indicates the presence of pus. He, therefore, urges the importance of exploratory puncture in all cases where dulness and bronchial respiration persist, with fever and diminution of strength. He has, by neglect of this in the past few years, failed to discover the existence of emphyema after pneumonia, or has found it too late in a few cases. It seems probable to him that in these cases the active infectious germs producing pneumonia and those causing pus are associated, the latter finding their way into the pulmonary pleura.

Hood,⁸ in order to emphasize the difficulty of distinguishing between pleuritic effusion and solidified lung by physical signs, reports four cases of emphyema following pneumonia, together with a fifth case, cause not stated, where the differential diagnosis was made by puncture. In two of the cases, granting the presence of fluid, there was no evidence of its purulent character. Hectic, sweats, and fluctuating temperature were wanting. In one case the temperature was 99°, in another normal at the time of aspiration.

Hospital Practice and Clinical Memoranda.

BOSTON CITY HOSPITAL.

DISLOCATION OF HIP OF ELEVEN MONTHS' STANDING; REDUCTION BY MANIPULATION.

SERVICE OF DR. W. H. THORNDIKE.

REPORTED BY D. E. BAKER, M.D., Former House Surgeon.

THE following case has been deemed worthy of publication on account of the circumstances attending the accident, the different views entertained as to its nature and the length of time that elapsed before relief was obtained.

Mrs. M., a widow, nineteen years of age, entered the hospital September 14, 1883. In October of the previous year she had been confined, and eight days afterward left his bed and moved about the room. Three weeks after labor she began to have pain in the left knee, which later shifted to other parts of the body. In the course of another fortnight the pain had settled in the left thigh and increased in intensity. No constitutional symptoms had thus far appeared.

While lying on the sofa on the 25th of October, 1882, she felt severe pain in left hip and down the back of the thigh, which was far more acute than had been previously experienced. On attempting to get up and walk the left leg gave way under her, and she fell to the floor, but was unable to tell how she struck. She was lifted into a chair, and from the chair carried to the bed, where she first noticed a tendency in the left knee to fall in and overlap its fellow. There was great pain behind and above the hip joint of that side when she attempted to rest on the left natis. The only relief obtained was by keeping the leg flexed and supported on a box under the knee, and the simultaneous use of morphia every four hours. Chills, high temperatures and profuse perspirations ensued. For eleven weeks she was kept under the influence of morphia much of the time. This was abandoned on account of its unpleasant effects. At the end of thirteen weeks she began to sit up, and a month later to go on crutches, with the limb flexed and the toe far from touching the floor. When she was beginning to get about there was an examination made under ether, and the opinion was expressed that the hip was out of joint, but no decided efforts were made to restore the bone to its place. For three weeks imperfect methods of extension were employed, such as suspending a weight from the foot over the end of the mattress when she was in bed, and allowing a weight to dangle from the left foot while she supported herself between two chairs in the erect position. One of her medical attendants had treated her for sciatica, and another for possible hip disease. The foot gradually came down so that at length the great toe rested on the ground, and the limb was used in walking. Two months before entering the hospital she dispensed with one crutch. The appetite had been poor, and the strength was easily exhausted, until the last three weeks before admission, when she made some gain in these respects, and could walk three-fourths of a mile with but one crutch. The patient stated that she realized the severity of the operation to reduce the dislocation, but could not feel satisfied until the attempt had been made.

⁷ Münch. Med. Wochenschrift, 1888, p. 227. Am. Journal of the Med. Sciences, 1888, 1, p. 621.

⁸ British Medical Journal, 1888, 1, p. 1051.

In the examination that followed her entrance into the hospital, it was found that in the erect posture the toes and ball of the left foot touched the floor. When lying on her back the left knee overlapped the right, and the left foot was inverted, the great toe overriding the opposite instep. The thigh could be slightly flexed without moving the pelvis, but flexion beyond a certain point tilted the pelvis and caused pain. The distance from the anterior superior iliac spine to the patella was one inch shorter on the left than on the right side. A straight line from left anterior superior iliac spine to left internal malleolus passed outside the patella. The left internal malleolus was apparently two and one-half inches above the right. The tip of great trochanter on this side was one inch above Nelaton's line, and the same point was an inch farther from the anterior superior spina ili on the left than on the right side. The head of the femur could be plainly felt on the dorsum ili far back of the acetabulum. Under ether, with the leg fully extended, the line from the left anterior superior spine of the ilium to left internal malleolus passed over the patella, and was one inch shorter than the corresponding distance on the right. The muscles were smaller on the left side than on the right. Grating was felt during the flexion of the thigh under ether.

In consultation, the surgical staff confirmed the diagnosis and advised the attempt at reduction. Accordingly, on September 21st, one week after admission, the patient was etherized for this purpose. While the pelvis was steadied by the hands of the assistants, Dr. W. H. Thorndike performed the manipulation. The thigh was flexed, adducted, circumducted outward, and rotated, and the manœuvre repeated twice, when a marked thug was perceived, after which the leg was lowered to the table. On raising the leg the head of the bone appeared to be somewhat below the joint, whereupon the operator placed his arm under the knee, with the thigh slightly abducted, and forcibly jerked the latter upward, when a second thug was detected, and the normal movements of the limb could then be performed without any resistance.

A mass of indurated tissue was found behind and above the acetabulum, where the head had rested, but the marked prominence of the latter had disappeared. With the limbs extended, the patellæ were opposite, but semiflexion of the thighs made the left femur appear about one inch shorter than its companion. This might be accounted for by the smaller glutei of the left side, an original difference in length of the femora, or by absorption of the left cervix femoris. In flexing the thigh on the pelvis, the head grated somewhat in its new, but old position. Measuring from the ilium to the patella, one-fourth inch shortening was obtained, but between the ilium and malleolus no disparity was demonstrated.

The knees of the patient were bound together and morphia given subcutaneously during a paroxysm of pain, which occurred during the first night after the operation. She slept between two and three hours. In twenty-four there was marked ecchymosis, swelling, and tenderness of the thigh and intermittent pain. For the next few days laudanum fomentations were applied about the hip and thigh, and the ankles and knees were bound together.

The temperature fluctuated between 99° F. to 102° F. for three days, and the pulse from 100 to 120, then gradually both declined. Patient slept fairly well, but

suffered from paroxysmal pain, and evinced considerable nervousness, with twitching of eyelids and mouth. A week after the reduction the legs could be flexed to an angle of 45° without much pain to the patient. The ankles and knees were then unbound and a lateral decubitus allowed. In a fortnight there was but little tenderness, swelling and discoloration had disappeared, and the thickening behind the acetabulum was not so apparent. Rotation of the thighs gave a sense of difference in the length of the two femoral necks. The patient sat up October 5th, and brought a part of her weight on the left foot, the heel resting on the floor. For another fortnight more or less pain occurred, which was relieved by fomentations and a blister, two inches square, in front of the joint. Walking about on crutches, she gathered strength daily, and the gait was even, but slightly limping. She took four minims of Fowler's solution and three grains of quinia thrice daily. At the expiration of a month she could walk without crutches by taking the hand of her nurse, but this gave her considerable pain. She left the Hospital November 9th, able to hobble about without crutches, or to walk evenly with them, and in good general health. The subsequent improvement was rapid and recovery complete.

Three years after the operation she writes that her health was never better, and that the hip is all right. The limb is a trifle short, but there is no limping to speak of, and the only pain is a slight rheumatism if she gets cold.

Reports of Societies.

ESSEX NORTH DISTRICT MEDICAL SOCIETY.

The Annual Meeting was held at Haverhill, May 2d, the president, Dr. E. P. HURN, in the chair.

The following officers were elected for the ensuing year:

President, Dr. C. G. Carleton, Lawrence. *Vice President*, Dr. G. W. Snow, Newburyport. *Secretary and Treasurer*, Dr. Maurice D. Clarke, Haverhill. *Corresponding Secretary*, Dr. Aug. Stabler, Lawrence. *Censors*, Drs. J. F. Young, Newburyport; R. C. Huse, Georgetown; F. W. Kennedy, Lawrence; J. F. Croston, Haverhill; H. F. Adams, Newburyport. *Councillors*, Drs. John Crowell, Haverhill; George Montgomery, Newburyport; F. A. Howe, Newburyport; L. J. Young, Haverhill; C. N. Chamberlain, Lawrence; R. B. Root, Georgetown; J. A. Doughlass, Amesbury; O. Warren, West Newbury; C. P. Morrill, North Andover. *Commissioner of Trials*, Dr. F. A. Howe, Newburyport. *Nominating Councillor*, Dr. John Crowell, Haverhill.

Dr. SUSAN E. CROCKER, of Lawrence, read a paper on

FOOD POISONING.

After introductory remarks on the methods of development of poisonous alkaloids from food in daily use, the following case was cited to show how a most potent poison was developed under quite ordinary circumstances:

On the 25th of last July I was called to see a family consisting of father, mother and one child. On my arrival I found that Mr. H., who had just reached home, was sitting on the sofa, wrapped in blankets and shivering with cold, a striking picture of collapse.

His face was pale, cyanotic, eyes and cheeks sunken, pulse scarcely perceptible. The wife was throwing herself about in paroxysms of pain and agony. Retching, vomiting and profuse diarrhoea were marked symptoms. The daughter, five years old, presented the same symptoms in a less aggravated form. I found that all were attacked about two hours after the noon meal, of which all had partaken together. Mr. H. was taken with severe gastric and abdominal pains soon after leaving Lawrence for Boston, quickly followed by vomiting, purging and great prostration. He was so weak before reaching the city that he had to be assisted from the car to the waiting room, where he remained in great agony until the next train for Lawrence.

Mrs. H. and the child developed similar symptoms about the same time, but in a less alarming degree, domestic remedies giving temporary alleviation, only to be followed by a renewal of the symptoms of poisoning.

Mrs. H. and the little girl were soon made comfortable, but Mr. H.'s symptoms continued to be alarming for several days. Chills, vomiting, and copious intestinal discharges continued until the next morning, when they became less frequent. These discharges were thin, and contained blood, mucous and membranous shreds. During the day Mr. H. rallied somewhat, and was able to take a small quantity of champagne. The pulse, which had been feeble and intermittent, grew stronger, and from that time improvement took place.

The treatment presented nothing of note, being directed mainly to a treatment of symptoms, and, in the case of Mr. H., to a prevention of fatal collapse, which seemed imminent.

In all these cases blood was seen in the discharges, being least in that of the child, and very large quantity in Mr. H.'s case. The pain and vomiting were greater in Mrs. H.'s case than in that of her husband, but the prostration was not so marked, and the rallies much sooner.

As soon as possible after making the family comfortable, I proceeded to investigate the cause of trouble. I inquired particularly about every article eaten at dinner. This meal consisted of bread, potatoes, salt fish and cream pie. All had partaken of these articles. In addition the little girl had eaten a few berries. I was able, very soon, to eliminate the bread, potatoes and salt fish. For obvious reasons these could not have been the source of the trouble. Neither could the berries have been at fault, as only one had eaten of them. The cream pie alone remained, and of this all had eaten. Inquiring more particularly about this pie, I found that it was cooked the day before, and formed a part of the dinner of that day, and all had eaten more abundantly of it than the second day, as less than a fourth remained over from the first dinner. This showed conclusively that if there was poison in the cream pie it had been developed in the twenty-four hours between the two dinners. None of the pie remained for examination.

I found, moreover, that the father had eaten the largest portion, the mother the next larger, while the child had barely tasted of it, hence the lightness of the attack in her case.

Cream pie is a compound of eggs, milk, corn-starch and sugar. To these ingredients is usually added some flavoring. Vanilla is the favorite extract used,

and this was the flavoring used on this occasion. In some similar cases of poisoning vanilla has been charged with being the toxic agent, but in this case the vanilla had been in the house for some time, and had been proved perfectly harmless.

The next question was where and how was the pie kept? The family had been out of town, and were intending soon to go out of town again, and had not thought it necessary to take ice for the short time that they remained at home. They had, therefore, placed several perishable articles in the cellarway to keep cool, the cream pie with the rest. In this cellarway I found the three conditions most favorable to cryptogamic growth, warmth, moisture and darkness. The air in the cellar, it is true, was cooler than the external air, but as there had been a long period of continued high temperature the cellar air was of a much higher temperature than usual.

It is evident that some chemical change took place in the pie, whereby an irritant poison was developed, and in view of the part which microbes are known to play in inducing such chemical action, we may conclude that the germs living in the close air of the cellar were the primary cause of this action. The stagnant air of the cellar, the heat developed by many days of continuous high temperature, the moisture at just the right point to favor the development of germs, formed, indeed, a most favorable state of things for producing the result described.

The case of cream pie poisoning cited is not unique. At least one other case occurred in Lawrence last summer, in which a husband and wife were the victims, and in which cream pie, kept over from the previous day's dinner, was the toxic agent. In the latter case the pie was shut up in a closet, without ice, under somewhat similar conditions.

After speaking of some varieties of microbes, and their agency in producing ptomaines, the speaker referred to the many cases of ice cream poisoning published in the periodicals of the day, showing that the cause was undoubtedly the same as in that of the cream pie cases mentioned. The studies and experiments of Professor Vaughn, and his discovery of tyrotoxin throw much light on the *modus operandi* of the cases cited, and some of his experiments were detailed at some length. His latest report was especially interesting, describing as it does the history of four cases of poisoning in one family, three of which proved fatal. The poison was, by careful tests, traced to some milk kept in a pantry under conditions favorable to germ growth, and the ptomaine was found to be tyrotoxin.

In view of the many cases of poisoning occurring every summer, the many cases of cholera morbus, which might, if carefully traced, be found to be caused by some food in which tyrotoxin or other ptomaine exists; in view of the fact that cholera infantum is probably caused in many cases by the presence of poisonous ptomaines in the milk given to the child, it is urged upon physicians to carefully investigate such cases occurring in their practice, to the end that the conditions under which such ptomaines are produced may be better known.

DR. CARLETON related the case of a family poisoned by cream pie, similar to Dr. Crocker's case.

Dr. A. Howe, of Newburyport, had seen a family with similar symptoms that had eaten of stale cream pie.

DR. J. J. HEALY, of Newburyport, had seen a family with like symptoms, and had traced the poisoning to oatmeal porridge that had been kept over twenty-four hours.

DR. C. E. DURANT, of Haverhill, read a paper on

ABORTION.

He advocated active interference to evacuate the uterus of any portion of the placenta or membranes be retained.

Remarks were made upon the paper by Drs. Flanders, R. C. Huse and Stabler.

DR. STABLER advocated the use of opium in full doses in threatened abortion wherever there is reason to hope that a child may be saved. It quiets the contractions of the uterus, and for this purpose he thinks opium a better drug than morphia.

DR. HUSE agreed with Dr. Stabler with regard to the value of opium. He has seen cases where morphia produced more vomiting than opium, and thinks it may be due to the presence of apomorphia as an impurity.

DR. JOHN CROWELL, as chairman of a committee to draw up a memorial of Dr. Nichols, read the following:

IN MEMORIAM JAMES R. NICHOLS, M.D.

James Robinson Nichols, a member of this Society since 1857, was born in West Amesbury (now Merrimac) July 18, 1819. In early life he came to Haverhill as a clerk in a drug store, and, being of an inquisitive turn of mind, he became interested in mechanical invention, and his spare hours were spent in the construction of many ingenious appliances. He commenced the study of medicine under the preceptorship of Dr. Kendall Flint, and, with scanty pecuniary means but with a persistent purpose, he attended a course of medical lectures at Dartmouth College in 1842, but, changing his purpose in the choice of a profession, he did not graduate, although he subsequently received the degree of M.D., and, later, that of A.M., from that institute.

In 1843 he established a drug store in Haverhill, where he did a thriving business, devoting his leisure hours to the study of theoretical and practical chemistry, and to numerous mechanical inventions, many of which are still widely in use. In 1856 he had the advantage of an extended European tour, and in 1857 he established in Boston the house of J. R. Nichols & Co. for the manufacture of chemical and medicinal preparations. This establishment has had a large pecuniary success and an honorable reputation.

Dr. Nichols was a voluminous writer upon subjects related to his favorite work; and through the medium of the *Journal of Chemistry* (now the *Popular Science News*) established by him, his articles upon popular scientific topics and psychological speculation and investigation have attained a wide circulation. Several of his literary works have found more substantial form in the volumes published by him upon the processes of cultivation of the soil and the operation of the forces of nature in the common ways of life. The book entitled "Whence, What, Where?" written in 1882, is the best known of his literary publications. This work, written in an attractive style, furnished perhaps the best illustration of the modes of thought of the writer in the realm of material and psychical investigation, speculation and reverie.

In social life Dr. Nichols had the elements of delightful companionship. His fertile mind, his wide observation and extensive reading made him a rare conversationalist, and no one could long be in his company without receiving valuable information and suggestion. His abundant wealth enabled him to dispense a generous hospitality, and the members of this Society have often enjoyed a social hour amid the delightful haunts of Kenosha and Winniken.

Although not a practicing physician, Dr. Nichols was deeply interested in our profession, and during the early years of his membership he gave many valuable lectures to this Society upon experimental chemistry and other subjects connected with medical science.

For many years he was an invalid, suffering much from indigestion and consequent nervous depression and insomnia; and finally, on January 2, 1888, his physical forces succumbed to the power of disease, and he passed peacefully into rest.

"And when the stream
Which overflowed the soul was passed away,
A consciousness remained, which it had left
Deposited upon the silent shore
Of memory, images and precious thoughts,
That shall not die and cannot be destroyed."

JOHN CROWELL,
OLIVER S. LOVEJOY, } Committee.
MAURICE D. CLARKE,

The Censors reported Dr. Kate Campbell Hurd, of Newburyport, admitted a fellow of the Society.

Recent Literature.

On the Operative Surgery of Malignant Disease. By HENRY T. BUTLIN, F.R.C.S., Assistant Surgeon and Demonstrator of Surgery, St. Bartholomew's Hospital; Late Erasmus Wilson Professor of Pathology to the Royal College of Surgeons. Philadelphia: P. Blakiston, Son & Co., 1012 Walnut Street. 1887.

Mr. Butlin has in this work really conferred a favor on the practical surgeon of to-day in that he has concisely formulated the knowledge on this subject in an admirable manner. He has written the work hoping to attain one or all of the following ends: "Indicate the class of cases and the parts of the body which may be treated by operative means with the best prospects of success. Encourage the performance of operations in suitable cases at the earliest possible period. Discourage the repetition of useless and dangerous operations. Raise the question of the propriety of the removal of entire organs for the cure of cancer of limited extent." All of the foregoing headings are carefully considered. The book is an admirable one for reference, for its composition is largely statistical. The work is written in an attractive style, the author presenting the information in a judicial manner, carefully weighing the evidence for and against a given operation, and giving the reader the result of his conclusions in a particularly unbiassed manner. Particular attention is called to the practice, so much in vogue, of removing the whole of an organ, as for instance the breast, regardless of the extent of the malignant disease; this procedure is condemned by the author who advises a very free removal of only the diseased structures. It is an excellent work and fills the intended niche.

—The name of the *Canada Medical and Surgical Journal* has been changed to the *Montreal Medical Journal*. It has been enlarged in size from sixty-four to eighty pages, at the same time reducing the subscription to two dollars per annum, and making other improvements that, it is hoped, will place it in the front rank of medical publications.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, SEPTEMBER 6, 1888.

*A Journal of Medicine, Surgery, and Allied Sciences, published at Boston, weekly, by the undersigned.**SUBSCRIPTION TERMS: \$5.00 per year, in advance, postage paid, for the United States and Canada; \$6.00 per year for all foreign countries belonging to the Postal Union.**All communications for the Editor, and all books for review, should be addressed to the Editor of the Boston Medical and Surgical Journal, 94 Boylston Street.**All letters containing business communications, or referring to the publication, subscription or advertising department of this journal, should be addressed to the "Manager of the Business Department," Medical and Surgical Journal, 94 Boylston Street.**Remittances should be made by money-order, draft, or registered letter, payable to*CUPPLES AND HURD,
94 BOYLSTON STREET, BOSTON, MASS.**DENSITY OF POPULATION AS A SOCIAL AND SANITARY QUESTION.**

THE laborious work of the statistician often lies hurried for years, until some intelligent thinker brings it to light and makes a practical application of the data thus collected. John Bright once said in a public assembly, "I find it stated that in Glasgow alone 41 families out of every 100 live in houses (tenements) having only one room." He was immediately interrupted by his audience with shouts of incredulous laughter, whereupon he replied, "That is the official statement of the census." This was said with reference to the census of 1871, and was a good illustration of the proverb that one-half of the world does not know how the other half lives.

In the United States, with the exception of a few large cities, we know but little of the conditions which prevail in European cities with reference to the amount of space occupied by the population.

In the 45th Registration Report of Massachusetts, (1886) a table was presented in which was given the density of the population of the State as a whole, and that of the manufacturing counties, as compared with that of the agricultural or rural counties. With the exception of Rhode Island, Massachusetts is the most densely populated State in the Union, and has by its last census a population of 233 to the square mile. In the six manufacturing or urban counties containing nineteen of the twenty-three cities of the State, the density amounted to 442 persons to the square mile, while in the eight agricultural counties the average density was scarcely 100 per square mile. The death-rate of the former was 19.7 per 1000, of the living population, and of the latter it was but 17.7 per 1000.

This slight difference in percentage appears at first sight insignificant, but when applied to the two million inhabitants of the State, a difference of two deaths only per 1000 means an excess of almost 4000 deaths, for the higher death-rate.

If different periods are contrasted, as for example, the five years ending with 1854, with the five years

ending with 1886, in which time the population had nearly doubled, and the density increased from 120 to 233 to the square mile, the death-rate had also increased from 18.4 in the former to 19.5 per 1000 in the latter period, a difference of 1.1 per 1000. These differences are chiefly manifested in the cities, since it is only in comparatively crowded populations that this principle finds application.

Another illustration of the same principle having a sanitary bearing is found in the adulteration of certain common articles of food. The reports of the State Board of Health showed that in the four western counties of Massachusetts, having a population with an average density of 95 per square mile (census of 1885) milk adulteration is practically unknown, while in the four counties of Suffolk, Middlesex, Essex and Norfolk with a density of 582 per square mile, the greatest vigilance is constantly required for its prevention.

In two recent essays entitled "The House in its relation to Public Health" ¹ and "Life in One Room," ² Dr. J. B. Russell has given some instructive statements as to the crowded condition of tenement-house life in Glasgow, from which he deduces certain propositions which are of special value to sanitarians, in consequence of the clearness and forcible manner in which they are stated.

By the census of 1881 Glasgow had a population of 511,520; of this number nearly 25 per cent, or 126,000 lived in tenements of one room and 228,000 or 45 per cent, in two-roomed houses. In commenting upon this fact, Dr. Russell says to his audience, "Percentages though accurate, are but a feeble mode of expression of facts regarding men and women like ourselves. I might throw down that statement before you, and ask you to imagine yourselves with all your appetites and passions, your bodily necessities and functions, your feelings of modesty, your sense of propriety, your births, your sicknesses, your deaths, your children, in short your *lives* in the whole round of their relationship with the seen and the unseen, suddenly shrivelled and shrunk into such conditions of space. Where can I find language in which to clothe the facts of these poor people's lives and yet be tolerable?"

"It is these small houses which produce the high death-rate of Glasgow. It is these small houses which give to that death-rate the striking characteristics of an enormous proportion of deaths in childhood, and of deaths from diseases of the lungs at all ages. Their exhausted air and poor and perverse feeding fill our streets with bandy-legged children. There you will find year after year a death-rate of 38 per 1,000, while in the districts with larger houses it is only 16 or 17. Of all the children who die in Glasgow before they complete their fifth year thirty-two per cent, die in houses of one apartment, and not two per cent, in houses of five apartments and upward. There they die, and their little bodies are laid on a table or on the

¹ Glasgow, 1887. From transactions of the Insurance and Actuarial Society.
² Glasgow, 1888. Lecture before Park Parish Institute.

dresser, so as to be somewhat out of the way of their brothers and sisters, who play and sleep and eat in their ghastly company. From beginning to rapid ending the lives of these children are short parts in a continuous tragedy. A large proportion enter life by the wide door of illegitimacy. One in every five of all who are born there never see the end of their first year. Of those who so prematurely die, a third have never been seen in their sickness by any doctor."

It is this factor of space, "in which we live and move and have our being," and the proportion of the numbers in which we live in it, that determine the proportion in which we share the prime physical conditions of health: air, sunlight, earth-space sufficient to give free play to those operations of nature which will keep our environment healthy, if they are not overtaxed by the aggregation of men.

From the data furnished by the vital statistics of England, Dr. Farr constructed a physical basis, and proved that the apparently confused local phenomena of mortality were subjected to certain laws capable of exact numerical expression, and of reduction to mathematical formulæ. A theoretical standard of health was established, toward which the practice of sanitary science could work on precise lines.

The terminology of the new science was expressed in the terms *density*, *areality* and *proximity*. *Density* refers to the number of persons per unit of area on which they live. *Areality* is the unit of area per person living on that area, and is, therefore, the reciprocal of the density. *Proximity* is a function of the areality, and it varies as the square root of the areality. And all these are based on the hypothesis of an equal distribution of the population.

In seven districts in England in 1871 the mortality-rates were respectively 17, 19, 22, 25, 28, 32 and 39 per 1,000. In the same districts the number of persons to a square mile were also 166, 186, 379, 1,718, 4,499, 12,357 and 65,823.

This series of facts may be stated differently. The nearer people live to each other the shorter their lives are. In districts where the proximity averaged 147 yards the mean duration of life was fifty-one years. In districts where the proximity was 97 yards the mean duration of life was forty years; where it was 28 yards the mean duration was thirty-two years; and in Liverpool, having the greatest density and the least proximity, namely 7 yards, the mean duration of life was but twenty-six years.

This law, however, must be applied with a clear understanding of the conditions in which the population lives. The basement of the law is this, that animal life contaminates its environments. In the process of living man defiles air, earth and water. This defilement only becomes dangerous when his environment cannot cleanse itself.

The disadvantage of close proximity finds a typical illustration in infectious diseases. Infection, which means the passage of a material something from person to person, takes place in proportion to the average

proximity of the population. If, in one city, the average proximity is eight yards, and in another ten yards, then the chances favorable to infection in the former must be greater than those in the latter, unless by greater care in the treatment of cases of infectious disease such chances are diminished.

It follows (1) that proximity does not begin to tell against health and life until it has passed a certain point; (2) that the same degree of proximity under different circumstances will have different degrees of injurious influence.

From his observations, Dr. Russell deduces the following conclusions:

(1) *The unit room in large houses has a higher cubic value than the unit room in small houses.*

(2) *The smaller the house, as measured by rooms, the greater the number of inmates per room, and, vice versa, the larger the house as measured by rooms, the fewer the number of inmates per room.*

(3) *The smaller the house, the less the cubic space per inmate, and, vice versa, the larger the house, the greater the cubic space per inmate.*

(4) *Space is a commodity which is used only as a necessity of life by the wage-earning classes, but is used as a luxury by the wealthy.*

Some of the conditions requisite to secure the wholesome occupation of tenements are the following: They must be carefully planned and built. They must start with the best practicable structural arrangements and sanitary provisions. Their contained air must be put in the best attainable circumstances, both as to renewal, and as to reducing contamination to a minimum by efficient drainage, water-supply, and the removal of refuse. When originally well ordered, the tenement-house must, when occupied, be carefully maintained. It works like an engine driven to the full extent of its horse-power. It is always bursting with life, from roof-tree to foundation. Every part of its movable working apparatus, and even its solid structure, is under strain.

Supposing the structure and maintenance to be perfect, the mode of occupation must be regulated. The condition of wholesomeness lies essentially in the due proportioning of inmates to cubic space. The houses are in the market, but health is at stake in the choice made by the buyers. Every tenant, in making his selection, has on the one side of a line drawn by the laws of the universe, health, and on the other, disease. Experience proves that the occupants of small houses cannot be left to their freedom of action in this matter. There is a moral responsibility on the landlord in the first place, and, failing him, upon the authorities somehow to direct and determine their choice. Supposing this difficulty overcome, the tenement thus properly built, maintained, and occupied, cannot then be left without supervision as to its occupancy. Physical and moral chaos will gradually invade the original order, if an eye, either that of the landlord or of the sanitary inspector, is not kept upon the householders to prevent overcrowding.

The practical application of these pungent words from Dr. Russell to our urban population is plain. The laws relating to tenement-houses are yearly being made more and more stringent and definite in their provisions as to the important questions of ventilation, air-space, drainage, and fire-protection. It remains for local authorities to provide efficient means for the enforcement of the statutes for the protection of the lives and health of the inhabiting population.

YELLOW FEVER IN FLORIDA.

PREVIOUS to the present year, the last general epidemic of yellow fever in the South to reach serious proportions was in 1878 and 1879. New Orleans, the key to the whole Mississippi Valley, was in former years exposed to a standing menace through her trade, especially in coffee, with Rio de Janeiro and other South American ports. Quarantine against the invader served to harass her commerce, but not to exclude the disease. Of late, maritime sanitation has been substituted for quarantine as the effective agency for warding off the fever, and with the most satisfactory results. Memphis, whose growth and material prospects were so nearly ruined by the epidemic of 1878, losing by death, as she did in that year, nearly one-third of her whole population, took to heart the terrible lesson, and despite the demoralization, both sanitary and financial, in which she was left by the scourge, so energetically applied herself to sanitary reform that, when the disease reappeared the next year, it was much less fatal, and there has been no considerable outbreak since.

During the summer of 1887 yellow fever prevailed quite extensively in the Gulf ports of Florida, having been brought into Tampa May 20th, and soon after appearing at Plant City and Manatee. The epidemic, during all these months, seems to have been treated almost entirely by denying its existence. With the approach of cold weather, the disease dropped out of public attention, and the stream of Northern travel was larger than ever. But the disease was continued throughout the winter by a chain of sporadic cases along the line of the South Florida Railway, and Plant City, Tampa, and even Sanford contained undoubted cases of yellow fever during the height of the influx of Northern visitors into the State. The hotel and transportation interest was strong enough to conceal these cases for awhile, even from the United States Marine Hospital Service, though the bulletins finally published by that Bureau in April last bore date, some of them, at least two months earlier than that time. Since the hot season opened, these dormant foci of disease have broken out into active epidemics, and points which are most frequented by winter tourists have also severely suffered.

The city of Havana, which is probably never free from yellow fever, is in close connection with Key

West and Tampa, a line of steamers to those points forming by far the shortest and most direct route from Cuba to the United States. There is no ground for present hope that the sanitary condition of that city is likely to be made right. President Grant's scheme for the acquisition of some of the West India Islands may or may not have been good statesmanship, but there is little doubt that United States control of Cuba would enable sanitary measures to be carried out which would be a great protection to the ports commercially in close relation to it. But, in the absence of such control of the infecting focus, the only safe reliance is upon the policy which has been so effective in Louisiana and Tennessee.

That policy, unfortunately, has been too long delayed. Months of concealment, prompted by greed of gain, have allowed the disease to gain a terrible impetus, and, even after it had fastened upon Jacksonville with a violence that swept away all attempts at further denial, instead of employing cleanliness and disinfectants, means of tested efficiency, time was lost in resorting to such things as cannon-firing, in the hope of killing the fever germs by aerial concussion! Jacksonville looks, so far as concerns its streets, at least to the casual eye of the winter traveller, reasonably clean and well kept. It could not have been nearly the undertaking to put it in good sanitary order that it was in the case of New Orleans and Memphis. Corrosive sublimate, and not gunpowder, was needed. The latter savors of voodooism and the beating of the tom-tom.

Up to the middle of last week, the daily list of new cases in Jacksonville does not exceed twelve or fifteen, but the disease took a fresh start at that time, and the daily average since then has more than doubled. The type thus far has been comparatively mild, there being only thirty-seven deaths out of a total (on the fourth inst.) three hundred and thirty-eight cases. This latter figure probably does not represent the actual prevalence of the disease, as some physicians even now are not reporting their cases, professing to fear the disastrous moral effect upon their patients of seeing the yellow flag displayed. We regret to notice that some of the local physicians have fallen victims to the disease. They, as well as the clergymen of the city, have, for the most part, stood manfully in their places. The board of health will, it is expected, call for further medical aid, and many excellent physicians from outside the State are said to be in readiness to respond. Trained nurses are, however, greatly needed, and seem to be difficult to obtain.

Jacksonville though not necessarily the gate-way into Florida, is practically so, and the occurrence of the fever this autumn will doubtless keep away many of the travellers who are wont to turn southward as the days grow shorter. A great deal of money is invested in hotel property and villas in Florida, and some of this property, we fear, will not yield its usual returns this year. It is the old story that "honesty is the best policy." If the disease had been acknowledged, faced

and fought last year, the coming season might have been as fruitful as any, to railroad and real-estate interests.

Refugees from Florida towns have been mostly quarantined from places on the railroad line north. Murphy, N. C., is the only place which has formally opened its doors to the fugitives. Two hundred cheap barrack-huts have been authorized to be built at Jacksonville for the negroes who are liable to propagate the fever, and who will be removed thither. The refugee camp, located on high pine land on the south bend of the St. Mary's River, on a site selected by Dr. Guiteras, is in one of the healthiest parts of Florida, and it has been abundantly supplied with tents and supplies by government. A number of tents have been set apart, about a quarter of a mile from the rest, for "suspects." Temporary quarantine stations have been established by the Marine Hospital Service near Way Cross, Ga., and Live Oak, Fla., where all north-bound travellers are inspected, and unless they can show that they come from a point known to be free from the disease, they are returned at their option either to their original point of embarkation or to "Camp Perry," where they are kept for ten days before being allowed to go to their destination. The residents of Jacksonville express great indignation that they are not allowed to go through to the North, but they are kept to the refugee camp, except such as go to Murphy or other definite points on parole not to go to the seaboard or to any quarantined points within ten days after leaving Jacksonville. Very few cases of disease have passed beyond the State line. One case of yellow fever is reported to have been treated in one of the Philadelphia hospitals. We learn that since 1871 there have been but four deaths from the disease in Boston, all occurring at quarantine, and none during the present epidemic.

MEDICAL NOTES.

— A number of cases have been reported during the last few years of diseases having been communicated in consequence of that part of the rite of circumcision as practised by the Jews which has for its object the arrest of the hæmorrhage. So serious have those untoward accidents been judged that, as we learn from the *Medical Press and Circular*, the matter was recently brought before the Israelite Consistory at Paris. A committee of investigation was appointed, consisting exclusively of medical men, and after an inquiry extending over several months, they have reported in favor of a modification. As hitherto practiced, the religious rite of circumcision comprised three distinct operations, first the *Milah*, then the *Priah*, and lastly the act of suction, *Mezzizah*, for the purpose of preventing hæmorrhage. Notwithstanding energetic protests from the more conservative members of the Consistory, the abolition of the *Mezzizah* was decreed, and

Dr. Duplay was requested to draw up, without delay, a new manual of directions for the guidance of heads of families in so far as this part of the rite is concerned. The change of custom is one which would seem to be a great gain, both to the operator and to the child, from the point of view of possible infection, to say nothing of the revolting character of the former custom.

— Dr. F. T. Pasternatski, according to the *Lancet*, in a lecture delivered before the professors of the Military Medico-Chirurgical Academy of St. Petersburg, for the purpose of showing his fitness for the position of *privat docent*, or extra-mural lecturer, in clinical medicine, brought together a number of statistics calculated to show the effect of different methods of treating typhoid fever upon the frequency of relapses. According to his figures, relapses occurred more frequently under cold-water treatment than when indifferent or inactive drugs only were employed. Still more frequently did relapses seem to occur when large doses of quinine — thirty grains per diem — were combined with the cold-water treatment. When large doses of antipyrin, thallin, and acetanilide were substituted for those of quinine, the results, as far as relapses are concerned, were even worse. There is, however, this to be said, that in Dr. Pasternatski's experience, none of the relapses proved fatal, or indeed left any permanent ill effects.

NEW YORK.

— The new wing of the Seaside Hospital of St. John's Guild at Cedar Grove, Staten Island, was recently opened with appropriate ceremonies. It measures 100 by 25 feet, and contains 64 beds; thus increasing the capacity of the Hospital one-half, so that it now accommodates 205 mothers and children.

Miscellany.

MACTE LISTER TRIUMPHATOR! ¹

A MOST-NERBY, HUMID-HILARIOUS ANTISEPTIC VADE-MECUM OF INTERNAL SURGERY, FOR THE AMBITIOUS MODERN PHYSICIAN.

BY DR. RIBORIUS SANTORINI. Translated by "FAMULUS."

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CHAPTER IV.

GASTRIC SURGERY.

Of all our organs there is none
So tolerant as the stomach, one
Which patiently accommodates
Much which our frame abominates.
We daily tax the best digestion
By most injurious refection.
But that the suffering stomach e'er
Resection should be called to bear,
And sutures multiple receive,
Surely nobody could believe!

¹ Concluded from page 214.

Loud praises let my song awaken!
 Billroth this task has undertaken!
 He first this operation planned
 And took Hein's triumph from his hand.

No herb has ever been secured
 By which a cancer can be cured!
 The therapist, helpless, waited —
 He sometimes pain alleviated
 By sedatives — but, after all,
 The prognosis remained "lethal."

But numerous facts this truth reveal,
 "What drugs can't cure, is cured by steel."
 And this metallic necromancer
 Soon gave a better fate to cancer.

It has been proved by Gussenbauer
 That animals possess the power
 To undergo normal resection
 At the pyloric intersection.

Peau the same idea had cherished,
 But all his patients quickly perished.
 'T was in Vienna — city royal —
 That, after years of effort loyal
 In way of careful preparation,
 A case was cured by operation.

But Kracer's classical review
 States that, of cases seventy-two,
 Details of which have been secured,
 But seventeen are ranked as "cured."

Better results we hope to see
 From gastro-enterotomy.
 This was by Woelfler first invented,
 And to our anxious view presented.
 He sought the upper jejunum coil,
 And sewed it to the gastric wall.
 One thing seems like a serious poenam —
 We must remove the duodenum
 And the pylorus from their station,
 Before we make the new relation.

In twenty-four reported cases,
 Ten cures the careful list embraces.

We cannot promise full relief.
 For oft there is a recidiv.
 But in one case, six years, perhaps,
 Have passed away without relapse.

With this in view, I see no reason
 For failure, if it's done in season;
 But, first of all, the wise clinician
 Must occupy the strong position
 The case to diagnosticate,
 And its attachments indicate.

But when we have the diagnosis,
 And also learn by grave stenosis
 The cancer sits at the pylorus,
 Resection promptly comes before us;
 But with cachexia evident
 Naught can the fatal end prevent.

Even when there's cicatricial stricture
 A cure is not beyond conjecture;
 But surgery, as all may see,
 Now forms our only therapy.

But here we have much more to answer
 Than when the malady is cancer;
 For when the ulcer's perforated,
 Instant resection's indicated.

'T is said that oft the inclination
 Is to await the perforation
 As *casus belli* in the case,
 And then to operate apace.
 Here, "indicatio vitalis"
 Means also "exitus lethalis."

CHAPTER V.

ABDOMINAL SURGERY.

As in the chronicles recorded,
 The ages past have oft afforded
 Surgeons, alas, much underrated,
 Who abdominal section cultivated,
 With art and technical address,
 And — *nota bene* — with success.

In Knidos, if the truth is stated,
 The kidney first was extirpated.
 In India we still earlier see
 Records of laparatomy.

But in our present century
 Our colleagues groped most helplessly.
 Therapy reached its minimal
 In lesions intra-abdominal,
 From poultices in combination
 With leeches and with sharp purgation.
 You win but little comfort real
 In lesions intra-peritoneal;
 But illius (or appendicitis)
 Is deemed "lethal" in every treatise.

Surgical Treatment of Peritonitis.

Active abdominal inflammation.
 If it's acute with suppuration
 And cocco-bacterial infection,
 You'll treat, by Kroenlein's wise direction,
 Hence as a surgical affection.

In any case the patient's fated,
 By doubt death's but accelerated,
 Excepting when the morbid action
 Is checked by proper disinfection
 And by intra-abdominal irrigation.

Yes — thus is cured — or environs —
 Peritonitis perforans!!

I view with constant admiration
 That case of iliac ulceration
 Which (typhoid origin) perforated,
 And peritonitis instigated,
 As through the newly-formed hiatus
 Parts of potato and tomatoes
 Fell into the peritoneal space,—
 And yet recovery took place.
 Mikulicz's name is known afar
 For surgical presbyopia.
 He made abdominal division.
 And did an ileum-excision:
 With Lembert's sutures closed the bowel.—
 Again the patient wields the trowel.

With antiseptic regulation
Cures often follow operation.

Another case—this is not bad :
Herr Kroenlein saw a country lad
With foul and purulent effusion
Who had indulged with great profusion,
In cherries, which, like Tommie Jones,
He swallowed, skin and pulp and stones.
These had produced a perforation ;
But after nine long days' duration,
Kroenlein did laparotomy :—
The boy recovered perfectly.

Conclusio : In cases all
When in the abdomen we find gall,
Gangrene or putrid suppuration,
Urine, fecal extravasation,
We trust to laparotomy ;—
To puncture is bad surgery.

In empyæma of the belly
You must resort eventually
To surgery ; but only then
You would incise the belly when
The place of bursting you can see.
Then boldly make an opening free.

(b) *Laparotomy in Ileus.*

Of all acute diseased conditions—
None know so well as our clinicians,—
There's none for man or medicus
So painful as is ileus.

With clysters and narcotica
We do not aid the sufferer.
Quicksilver, and the other lumber
Of useless drugs, which sometimes cumber
The doctor's brain, are still employed ;
But no relief is thus secured.

Herr Kussmaul therefore advocates
Washing the stomach out, and states
That it succeeds ; but I assure you
That this idea will but allure you
To disappointment. Dear colleague,
I would not try this on a pig.

Herr Roser proved statistically,
From death-reports in Germany,
Four thousand persons, more or less,
Die annually of ileus !!

He adds a fact quite pertinent
That a respectable per cent.,
Might be reserved to other fate
If boldly, and when not too late,
The doctor with incision free
Inspect the abdominal cavity.

This is Internal Surgery :
If you employ it steadily,
'T will spread abroad your gory fame,
And all will tremble at your name!
Behold our Science! I've outlined it,
If there's a moral you must find it.

FINIS.

IODOFORM IN HÆMOPTYSIS.

THE difficulty of finding any successful method of checking hæmoptysis in tuberculous cases has led to the trial of many remedies. MM. Chauvin and Jorisseune, of Liège, publish a short account of the results of the administration of iodoform, at first along with tannin, afterwards by itself. In the first six cases pills were given containing iodoform, $\frac{3}{4}$ gr., and tannin, $1\frac{1}{2}$ gr. Sometimes the hæmoptysis stopped after two of these had been taken; in one severe case of advanced phthisis, as many as five were given *per diem* for three days before the bleeding ceased. In another patient, who had been in the habit of having eight or ten attacks of hæmoptysis in the year, which had been treated by large amounts of ergotine and morphine, three of the iodoform and tannin pills stopped the hæmoptysis four months ago, and there has been no recurrence since. In the three cases recorded in detail, in which the iodoform alone was used, the results were very similar. The authors came to the conclusion that gr. ij. of iodoform *per diem* in three pills was an appropriate dose for moderately severe cases, and that more than eight or nine pills was not required in any case they had to deal with. This action they consider quicker than that of ergotine, and, therefore, more useful. In all the cases during the past year in which they had given it there has been no relapse, and, during the treatment, no disturbance of digestion. — *Progrès Méd.*, May 19, and *Practitioner*, July, 1888.

Correspondence.

ANTIPIRYNE IN SEA-SICKNESS.

DENVER, August 27, 1888.

MR. EDITOR,—The following communication from so well-known a man as the sculptor-writer may be of interest to your readers as a contribution to the effects of antipyrine in averting sea-sickness :—

AT SEA, STR. TRAVE, 6 Aug., 1888.

DEAR DOCTOR,—I wish to send you a few lines to say that the antipyrine works wonders. I have never been to sea before without being more or less uncomfortable, the first day or two at least, even in as smooth a sea as we have had since we sailed from New York. This time, far from not enjoying every meal, I cannot get enough to eat. You can safely recommend it, for though it may not be the cause of my happiness, something is, and I am willing to give it the benefit of a doubt in the other direction. I only took it two days,—the day before sailing and the next. The ladies with me would none of them take antipyrine, and have all been more or less sick,—the youngest dreadfully so, and is no better.

Hoping you are well, and with kindest regards,

Yours truly,
PRESTON POWERS.

The above letter was written when six days out; and the dose of the drug was ten grains taken three times a day.
SAMUEL A. FISK, M. D.

"FREEDOM CURE FOR INSANITY."

BROOKLINE, September 3, 1888.

MR. EDITOR,—The *Boston Evening Transcript* of August 31st has an editorial headed "The Freedom Cure for Insanity," to which I wish to call attention, as it is intentionally misleading.

As the text of the editorial was furnished by an article in the *Boston Morning Herald*, of the same date, on the "Boarding out of the Insane," which is a system of care for the chronic and practically incurable class, it will

readily be seen what a misnomer the title of the *Transcript* article is.

The object of this excellent experiment, which can hardly be called a substantial success until it has had a ten years' trial, is to help relieve hospitals of their surplus of old cases, which have passed the period of ordinary recovery. For this class, if carefully managed, it may to a certain extent be of use in connection with a general system of hospital provision for the insane.

However intelligent and worthy the wives of the lower class of farmers and mechanics may be, I doubt whether the *Transcript* writer would be willing to place an insane friend under their treatment, in spite of his high opinion of the "freedom cure" as he calls the boarding-out system. He would select rather the skilled medical treatment and thorough equipment of the insane hospital.

The words "freedom" and "liberty" are often wrongly applied when speaking of institution care of the insane.

There are right and wrong uses of freedom, and the patient is often cured by taking away the opportunity for the wrong uses. Freedom in itself may be the worst thing possible for the patient.

Furthermore, patients in our best-managed lunatic hospitals have great freedom of action, if well enough to bear it, and often this freedom is greater than it would be at home.

No one believes more strongly in individual treatment of the insane than myself, and their treatment includes as much responsibility as the patient is equal to, but I often have reason to regret the hasty and superficial judgments expressed on this subject by persons who have had little practical experience in this direction. Writing as they do in the newspapers, they help to keep alive a spirit of distrust in lunatic hospital management, and retard the cause of hospital development.

WALTER CHANNING, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING AUGUST 25, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhæal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	754	375	28.64	10.14	18.85	1.30	2.47
Philadelphia	1,016,768	439	196	23.10	10.78	11.88	7.04	4.44
Brooklyn	751,432	374	217	35.28	7.84	24.36	.56	4.76
Chicago	760,000	322	187	35.96	7.13	18.91	4.03	7.44
St. Louis	449,160	157	73	29.44	6.37	8.96	3.20	6.37
Baltimore	437,155	164	89	32.33	12.81	21.96	7.93	1.83
Boston	407,024	202	101	31.26	13.23	12.74	2.45	3.43
Cincinnati	325,000	119	—	27.52	8.55	18.06	4.00	1.72
New Orleans	248,000	100	33	44.00	4.08	24.00	7.30	3.00
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	105	53	41.48	12.35	19.95	3.80	.95
Pittsburgh	210,000	95	55	46.20	4.20	46.20	7.35	3.15
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	25	14	28.00	4.00	20.00	4.00	—
Nashville	65,153	20	5	40.00	10.00	30.00	5.00	5.00
Charlotte	60,145	44	24	36.32	—	22.74	6.81	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	76,328	28	16	32.13	3.57	17.85	—	3.57
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	35	22	54.34	8.58	40.04	2.86	2.86
Fall River	61,203	36	19	72.28	13.90	61.16	2.78	2.78
Lynn	51,467	17	—	—	23.52	—	—	—
Lawrence	40,175	24	10	29.12	12.48	20.80	8.32	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36,298	14	8	57.12	—	57.12	—	—
Somerville	33,307	10	5	30.00	20.00	20.00	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,751	15	8	33.33	—	20.00	—	—
Chelsea	27,552	12	—	33.33	—	33.33	—	—
Haverhill	24,979	16	5	12.50	20.00	12.50	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	10	—	10.00	20.00	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	6	5	16.66	—	16.66	—	—
Malden	18,902	—	—	—	—	—	—	—
Fitchburg	17,534	11	7	—	9.09	—	—	—
Waltham	16,651	10	6	50.00	—	40.00	10.00	—
Newburyport	13,839	7	3	42.84	42.84	42.84	—	—
Norhampton	13,419	8	5	25.00	25.00	12.50	—	12.50

Deaths reported 3,180: under five years of age 1,541; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhæal diseases, whooping-cough, erysipelas and fever) 1,002; consumption 511, acute lung diseases 141, diarrhæal diseases 624, typhoid fever 107, diphtheria and croup 104, whooping-cough 56, malarial fever 36, scarlet fever 31, cerebro-spinal meningitis 17, measles 13, puerperal fever nine, erysipelas three, small-pox two. From whooping-cough, New York 17, Brooklyn eight, Philadelphia six, Chicago one each. From puerperal fever five, St. Louis three, New Orleans two, Boston, Cincinnati, New Haven, Somerville, and Brockton one each. From malarial fevers, St. Louis 13, Brooklyn seven, New York and Philadelphia four each, Charleston three, New Orleans two, Baltimore, Boston, and Cincinnati one each. From scarlet fever, New York 13, Brooklyn four, Philadelphia three, Cincinnati and Fall River two each, Chicago one. From cerebro-spinal meningitis, Chicago six, Worcester three, New York and Boston

two each, Philadelphia, St. Louis, Cincinnati, and Washington one each. From measles, New York nine, Philadelphia, Brooklyn, Chicago, and Pittsburgh one each. From diphtheria, Chicago four, New York and Washington two each, Philadelphia one. From erysipelas, New York, Chicago, and Pittsburgh one each. From small-pox, Philadelphia two.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273 for the week ending August 18th, the death-rate was 15.4. Deaths reported 2954: infants under one year 931; acute diseases of the respiratory organs (London) 167, diarrhæa 301, whooping-cough 56, measles 53, scarlet fever 31, diphtheria 23, fever 21, small-pox (Oldham) one.

The death-rates ranged from 12.9 in Bolton to 22.8 in Manchester; Birmingham 13.0; Bradford 14.5; Huddersfield 13.7; Hull 14.2; Leicester 10.0; Liverpool 18.1; London 16.2; Nottingham 12.3; Sheffield 10.6; Sunderland 13.4. In Edinburgh 15.3; Glasgow 20.1; Dublin 18.2.

The meteorological record for the week ending August 25, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, Aug. 25, 1888.	Barom-eter.		Thermometer.		Relative Humidity.		Direction of Wind.		Velocity of Wind.		State of Weather. ¹		Rainfall.		
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	7.00 A. M.	3.00 P. M.	7.00 A. M.	3.00 P. M.	Duration Hrs. & Min.	Amount in Inches.
Sunday, ... 19	29.93	72.0	81.0	65.0	59.0	45.0	52.0	W.	W.	9	12	F.	C.		.02
Monday, ... 20	30.00	67.0	76.0	62.0	71.0	73.0	72.0	W.	S.	12	8	F.	O.		
Tuesday, ... 21	29.82	66.0	73.0	61.0	63.0	84.0	74.0	S.	E.	7	18	F.	R.		.36
Wednes., ... 22	29.74	64.0	78.0	61.0	75.0	60.0	68.0	S.W.	N.	20	18	C.	O.		
Thursday, ... 23	30.00	60.0	71.0	52.0	61.0	53.0	57.0	W.	W.	12	17	C.	C.		
Friday, ... 24	29.90	70.0	84.0	59.0	55.0	64.0	60.0	W.	W.	18	19	C.	C.		
Saturday, ... 25	29.94	74.0	84.0	62.0	57.0	64.0	60.0	W.	S.W.	10	12	F.	C.		
Mean, the Week.	29.91	67.0	78.0	60.0											

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. A., FROM AUGUST 25, 1888, TO AUGUST 31, 1888.

ALEXANDER, RICHARD H., lieutenant-colonel and surgeon. Detailed a member of Board to meet at San Carlos, A. T., August 28th, to select a site for a new post at that place. Paragraph 1, S. O. 14, Division of the Pacific, August 15, 1888.

ALDEN, CHARLES H., major and surgeon. Detailed as a member of the Board of Medical Officers convened at United States Military Academy, West Point, N. Y., vice Major Chas. R. Greenleaf, surgeon, relieved. Paragraph 2, S. O. 190, A. G. O., August 28, 1888.

CALDWELL, DANIEL G., major and surgeon. To report to the Recorder of the Retiring Board in session at Fort Leavenworth, Kansas, as a witness in the case of Capt. Thomas Sharp, 17th Infantry. Paragraph 2, S. O. 74, Department of the Platte, August 18, 1888.

CALDWELL, DANIEL G., major and surgeon. Having completed his duty as witness before Retiring Board, Fort Leavenworth, Kansas, to return to his station, Fort D. A. Russell, Wyo. Paragraph 4, S. O. 106, Department of the Missouri, August 24, 1888.

LORING, LEONARD Y., assistant surgeon. Granted leave of absence for one month. Paragraph 1, S. O. 97, Department of Arizona, August 23, 1888.

TAYLOR, MARCUS E., captain and assistant surgeon. Granted leave of absence for four months, to take effect about October 15, 1888. Paragraph 5, S. O. 196, A. G. O., August 24, 1888.

BIRMINGHAM, HENRY T., captain and assistant surgeon. Relieved from duty at Fort Myer, Va., and ordered to Fort Klamath, Oregon, for duty. Paragraph 18, S. O. 196, A. G. O., August 24, 1888.

BALL, R. R., assistant surgeon U. S. A., Fort Riley, Kansas. Ordered to Fort Servis, Colorado, for temporary duty. Paragraph 5, S. O. 108, Department of the Missouri, August 27, 1888.

SWIFT, EUGENE L., assistant surgeon. Upon being relieved from temporary duty at Fort Klamath, Oregon, to return to his proper station, Fort Spokane, W. T. Paragraph 18, S. O. 196, A. G. O., August 24, 1888.

KAFFERTY, OGDEN, assistant surgeon. To proceed from Fort Clark to the camp at the Department Rifle Range near San Antonio, Tex., and report for temporary duty. Paragraph 3, S. O. 85, Department of Texas, August 15, 1888.

KAFFERTY, OGDEN, assistant surgeon. Upon conclusion of Department Rifle competition, will report to the Inspector of Rifle Practice, Division of the Missouri, for assignment to duty in connection with the Division Rifle Competition as camp surgeon. Paragraph 4, S. O. 86, Department of Texas, August 17, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING SEPTEMBER 1, 1888.

CRANDALL, R. P., assistant surgeon. Detached from the "Saratoga" and wait orders.

DR. BUSE, W. R., passed assistant surgeon. Detached from the "Jamestown" and to the "Constellation."

ARNOLD, W. F., Nashville, Tenn. Commissioned assistant surgeon in the Navy, August 18th.

LUNG, GEORGE A., Canandaigua, N. Y. Commissioned assistant surgeon in the Navy, August 18th.

SOCIETY NOTICE.

GYNÆCOLOGICAL SOCIETY OF BOSTON. — The next meeting of the Society will be held at No. 19 Boylston Place, on Thursday, September 13th, at 4 o'clock, P. M. Paper: "Antiseptics in Gynæcological and Obstetric Operations," by Dr. F. L. Burt. Drs. E. W. Cushing and F. L. Burt will show interesting pathological specimens.

H. J. HARRIMAN, M.D., Secretary.

OBITUARY. GEORGE D. TOWNSHEND, M.D.

Dr. George D. Townshend, a prominent physician of Roxbury, died at Norfolk, Va., August 20th, in his forty-seventh year, after a protracted and painful illness which culminated somewhat suddenly. Dr. Townshend was born in Providence, R. I., and was a paternal great-grandson of General Glover, and a maternal grandson of General K. E. Lee. He graduated at the Medical and Surgical College in Philadelphia, where for six years he was lecturer and demonstrator of anatomy and surgery under Dr. Agnew. During the late war he was a surgeon in the Army of the Potomac. After the war he settled in Norfolk, Va., where he secured a large practice. The hostility of the South against Northerners engendered by the war, induced him to abandon this field, and in 1877 he removed to Massachusetts and settled in Roxbury, where his ability and industry gained him a good practice. He served for some years as Secretary of the Norfolk District Medical Society and later as its vice-president.

BOOKS AND PAMPHLETS RECEIVED.

Autipyrine. By Benjamin Marshall, M.D., San Francisco, Cal. Reprint. 1888.

The Physician's Leisure Library.—Abdominal Surgery. By Hal. C. Wyman, M.S., M.D., Professor of Surgery and Operative Surgery, Michigan College of Medicine and Surgery.

Sanitary Science in the Home. By Mrs. R. H. Richards. Philadelphia. 1888. Reprint.

Announcement for 1888-1889 of the Medical and Dental Departments of the National University, Washington, D. C.

Sixth National Convention of the Bureaus of Statistics of Labor in the United States, Indianapolis, Indiana, May 22 and 23, 1888.

The Electro-Magnet in Removal of Steel from the Interior of the Eye. By Alvin A. Hubbell, M.D., Buffalo, N. Y., Professor of Diseases of the Eye, Ear, and Throat in the Medical Department of Niagara University. 1888. Reprint.

Some of the Advantages of the Union of Medical School and University. An Address delivered at Yale University, June 26, 1888. By William H. Welch, M.D., Professor of Pathology in Johns Hopkins University. 1887. Reprint.

University of Denver, Col. Eighth Annual Announcement of the Faculty of Medicine, 1888-89.

The American Hip-Splint. By Dr. A. B. Judson, of New York. Reprint.

Third Annual Report of the State Board of Health of the State of Maine for the Fiscal Year ending December 31, 1887.

Original Articles.

TWO CASES OF APPENDICITIS, ONE FATAL.

BY C. ELLERY STEPMAN, M.D., DORCHESTER.

A. B., AGED forty-one, a wool merchant, married, having two children, spare, abstemious, sandy complexion, travelled a good deal in the West on business; called himself a healthy man. But I attended him in 1882 for a prolonged attack of acute rheumatism, which left him much weakened, and from which he convalesced at Richfield Springs. In the past eleven years he has had several attacks of dysentery, and he suffered from constipation last winter. The testicle on the right side had never descended, and he always wore a truss, for what reason I never learned, as there were no symptoms of hernia. His parents were consumptive, and a sister died of phthisis.

On the morning of the 29th of March, 1888, he began to feel uncomfortable, and vomited in the afternoon: this he attributed to a richer breakfast than usual. The vomiting was followed by abdominal pain in the afternoon of no great severity: he felt a little chilly, but had nothing like a rigor. I was called early in the morning of the 30th, and found the patient suffering from the usual symptoms of colic. He was inclined to ascribe his distress to the missing testis, which he believed would "kill him some day." The little finger, however, passed into the inguinal canal easily, and far enough to eliminate the possibility of strangulated hernia. The pulse was but little quickened, and no fever was noticed. Towards afternoon, the pain, which had been quieted by a quarter of a grain of morphia, became more severe, and occupied the loins and right lower part of the abdomen, and the vomiting of bilious matter continued: the belly, which was naturally full, though tender on pressure, was little, if any, swollen; there had been no defecation.

31st. The temperature rose to 102° , and the pulse to 100: pain occurred as soon as the effect of morphia abated. Late in the afternoon the pain was intolerable, in the groin especially, shooting down into the penis: vomiting was distressing, and the countenance began to grow pinched: there was no escape of flatus nor any defecation. These conditions, with swelling and tympanites, were maintained till the 3d of April, the sixth day of the disease, when the suspicions of appendicitis grew stronger, and Dr. Fitz (who has kindly allowed me the use of his notes) was asked to see him.

The vomiting continued frequent, without offensive odor, both it and the abdominal pains causing sweating. Last night, a second attack of intense pain occurred, like that of yesterday. An enema discharged some scybala for the first time. The countenance was anxious, the pupils contracted, the skin not very hot, though he complains of flushes of heat. The abdomen considerably swollen and tympanitic, more marked in the right iliac fossa, where the outline of the cæcum is perceptible: slight dulness in that situation, but no tumor was recognized: the tenderness does not extend into the right loin. The severest pain is over the right inguinal canal, where there is a circumscribed resistance, and along Poupart's ligament, near the iliac spine: the right testis has never descended, and cannot be felt: there is sensitiveness on palpation in

the left iliac region: the hypogastrium resonant, but not painful. On rectal examination, there is felt in the pelvis an elastic, rounded tumor, pressure on which causes pain locally and in the right iliac region. The urine passed freely during the day, the tumor persisting after micturition.

The gravity of the situation being explained to the family, Dr. Bolles was consulted with a view to immediate operation, and he saw the patient at once. But in the two hours which had passed there had been a remission in the symptoms: less pain, less swelling, a fall of temperature and pulse. The patient expressed himself so much relieved that the operation was not insisted on that night.

Next morning, the seventh of the disease, Drs. Fitz and Bolles saw him with me, and found him calling for something to eat. The vomiting had ceased at six o'clock that morning; the abdomen was less tense; there was no increased local tenderness; no tumor could be felt in the right iliac fossa. Pulse 104, temperature 99.4° . The operation postponed for more decided indications.

On the tenth day of the illness there was a slight chill at 3 o'clock, A. M., and the temperature shot up from 97° to 100° : loose dejections were passed; gruel, chicken-broth, tea, and toast allowed in sufficient amount.

12th. The temperature touched the normal figure in the evening: twenty-five drops of elixir of opium once or twice a day makes the pain bearable: abdominal distension less. Micturition frequent; urine normal in quantity.

16th. Induration detected in right iliac fossa; also a tumor discovered in the right inguinal canal, an inch below Poupart's ligament: it has the same size, shape, and density of the left testis, is not affected by coughing, is reddened, and is the source of much discomfort. The abdomen moderately distended; generally tympanitic; somewhat dull in right iliac fossa, especially so in right lumbar region; right rectus indurated, resisting deep palpation. Rectal examination shows the pelvic tumor still persistent, moderately tense, rounded. The temperature ranged, this week, from 99° and a fraction in the morning to a little more than 102° in the afternoon. He was taking one or two pints of champagne during the day; the pulse was 115 to 120, the face was pinched, and the patient evidently failing. The operation having become imperative, was done in the forenoon of the twenty-first day of the disease by Dr. John Homans.

After etherization, an incision was made just above Poupart's ligament, and carefully carried down to the peritoneum, which was torn off the iliacus muscle by the finger. The abscess was not readily reached, but by firm pressure on a point towards the left of the median line the finger was pushed through the peritoneum into a pus-cavity in the pelvis: out of this, on the withdrawal of the finger, spouted fully a pint of dirty, brown, highly offensive pus: following this, some yellow, flocculent faeces and gas.

The cavity was washed out with hot carbolized water, and a drainage-tube six inches long thrust down to the bottom of the wound. The rectal tumor disappeared with the evacuation of the matter. The temperature after the operation fell to 98.4° , and the pulse to 110.

In the afternoon, a chill sent the temperature to 102° and the pulse to 140, but he had a comfortable

night. The discharge of pus was very little, and milk nearly digested came through the tube, which was flushed every two or three hours with carbolized water. The range of temperature became irregular, dropping from 100.2° on the twenty-fifth day to 97°: the patient gradually failing, though he took milk and champagne in good amount. Thirty drops of tr. opii deodoratis would secure a good night.

Twenty-third day. At noon he complained of great pain in the left of the lower abdomen, which was repeated on following days.

Thirty-third day. The incised opening discharges freely feces and gas. The borders of the wound show small sloughs: the rectal tumor no longer apparent. The nourishment is chiefly milk, and a quart of champagne is consumed daily. To-day is the first dejection per anum since the operation, and less discharge by the drainage-tube. Feces appeared in the urine, with pain in micturition, and urine escaped by the wound, with little or none passing by the urethra.

Thirty-fourth day. The swelling in the scrotum broke to-day, discharging pus, and the tumor disappeared. After this he was tolerably comfortable, though weaker.

Thirty-fifth day. The opening into the scrotum was enlarged by incision by Dr. Homans. The next day he had a dejection per anum, and on the thirty-ninth day of his illness — the 6th of May — he died at 2.45 P. M.

The autopsy was made by Dr. Fitz. The abdomen only was examined. Coils of small intestine, the descending colon, sigmoid flexure, cæcum, and anterior abdominal wall united by fibrous adhesions easily torn. The pelvic portion of the peritoneal cavity was thus shut off, and held, perhaps, a half pint of yellowish-gray, viscid pus. The cavity communicated freely with the incised wound in the right iliac fossa. The stump of the vermiform appendix, about half an inch long, opened directly into the upper part of the cavity. Its mucous membrane was thickened, reddened, and the surface rough. On the posterior wall of the bladder, about an inch and a half from the posterior border of the prostate, was a sharply-defined wound opening, quarter of an inch in diameter, through which the bladder and abscess-cavity freely communicated. The mucous membrane of the bladder was injected. The kidneys were normal. The right testicle was attached to the right abdominal wall at the brim of the pelvis: it was small and soft. On isolating the coils of small intestine forming the loop of the abscess, the walls were easily torn in several places. The mucous membrane of the lower part of the ilium and of the cæcum were normal. The peritoneal coat of the ilium showed numerous fibrous shreds and patches.

The second case was that of J. H., a large, fair man, thirty years old, foreman of the paint-shop in a large smithy. A year ago last fall he sustained a severe injury in one hand. He said that he was subject to constipation, which was relieved by beer, and he was thus induced to take a full allowance. He had had several attacks of colic, one or two of which I saw, the cause of which seemed to me to be gall-stones, having the symptoms of sudden pain just to the right of the epigastrium, and vomiting, yielding to opiates, so that on the third day he could go to work again. On the 15th of April (when my other patient had been ill eighteen days), Mr. H., who had been complaining for several days with dyspepsia and con-

stipation, was taken in the night with acute abdominal pain, and sent to my house for an opiate.

On the 18th I was called to see him, and found that this time his pain was referred to the right and lower part of the abdomen: there had been no chill: he did not vomit till after he had several doses of opium. He preferred to lie with his knees drawn up: there was tenderness, not excessive, all over abdomen, but no tumor could be felt. Sleeplessness was his chief complaint, though he had had few opiates. The temperature was normal, and the pulse about 80. These conditions held for two days, and it was not till a fortnight afterwards that I learned that about the fifth day of his illness, being a little light-headed through opium, he dressed in ulster, trousers, and slippers, and crossed the street to his father's house, despite the efforts of his wife to restrain him. On the seventh day his temperature and pulse were increased, and, for the first time, a tumor, could be felt along and above the right groin, while, per rectum, the same could be detected and compressed by bimanual palpation. Dr. Fitz kindly saw him the next day in consultation, and procured his admission to the Massachusetts General Hospital.

Here, I understood, on the tenth day after his illness began, an operation was prepared for, but the preliminary examination showed a decided diminution in the size of the tumor, as compared with the day before; there was less pain and free defæcation, and the temperature gradually dropped to the normal standard. By the thirty-eighth day no tumor was to be felt in the iliac fossa on abdominal palpation, but a slight fullness could be detected on rectal examination. Discharged 24th of May.

The interest of these two cases to those chiefly concerned lay in the diagnosis and in the question of operation. Abundant information on these points in general is contained in the treatise of Dr. Fitz on this subject, published in 1886.

In a second paper (*N. Y. Medical Journal*, May 12, 1888), the same author sums up in these words: "It is the duty of every physician to be mindful that, for all practical purposes, typhlitis, perityphlitis, perityphlitic tumor, and perityphlitic abscess mean inflammation of the vermiform appendix; that the chief danger of this affection is perforation; that perforation, in the great majority of cases, produces a circumscribed, suppurative peritonitis, tending to become generalized; that, in the light of our present knowledge, the surgical treatment of this lesion offers the best chances for the life and the future health of the patient; and that the progress of the disease needs to be watched with knife in hand."

In the first case the situation was complicated by the undescended testis, and the diagnosis was settled on the fifth day, the determining symptom being the resistance and dullness felt about the right groin, following the renewal of intense pain, the tympanites, and the rise of temperature. An immediate operation was prepared for, and would have been done at once — in the night — had there not been an extraordinary remission of all the symptoms. The second case was not seen till the third day, as the patient supposed that the attack was one of biliary colic, like those he had been subject to. He afterwards recognized the difference in his sensations between this and former attacks of colic. It was not till the seventh day, two days after his excursion across the street, when I

thought him snug in bed, that fever came on, and I could feel the tumor above the groin and in the rectum, although I had, with the former case in my mind, been watchful of the symptoms. This patient also missed an early operation on account of a remission in the symptoms. Should his appendix ever see the light, it would be instructive to know whether it contained a gall-stone—for such a concretion has been infrequently discovered lurking in the appendix—and I consider that his earlier attacks were correctly diagnosed.

Hospital experience early drew my attention to this class of cases, and I have seen a few in private practice, all of whom did well, the tumor in each being small and the symptoms not alarming. But I do not always find it easy to diagnose them as early as I should like, and I have found the tumor developed later than in cases described by others. But if the physician bears in mind that each patient who cries out with colic may be threatened with this disease, and if palpation of the abdomen is carefully employed in obscure or doubtful cases, he is not likely to be found often astray.

It is easy to be wise after the event, and to wish that the first patient had been operated on when the first preparations were made. But it was by no means easy to reach the abscess, large as it was, when laparotomy was done, and at an earlier time it might have been missed altogether, for I have heard that this operation has been abandoned from inability to find the source of disease. The marked improvement was no greater in A. B. than in J. H., who escaped laparotomy altogether after it had been postponed, as it was in A. B.'s case.

GELSEMIUM SEMPERVIRENS.¹

BY G. M. GARLAND, M.D.,
Instructor in Clinical Medicine, Harvard Medical School.

THE virtues of gelsemium have long been known to the eclectics, and many a celebrated eclectic febrifuge has owed its efficiency to this potent remedy. The gelsemium plant is a trailing woodbine which is familiarly known as Carolina jasmine or yellow jasmine from the color of its blossom. Flowering during March and April, it is a beautiful feature of the southern landscape as it hangs from the branches in festoons of bright yellow blossoms which fill the air with a fragrant perfume. Confined in a close room, however, the odor of these flowers is depressing, and causes headache. The root of the vine is the part endowed with medicinal properties; and the ordinary pharmaceutical preparations are a powder, an extract, and a tincture. It is well to say at the outset that gelsemium is an extremely powerful drug; and as its preparations vary widely in strength, it is wise for one to begin cautiously with those which are unfamiliar to him.

Potter describes the physiological action of the drug as follows: "Gelsemium is a powerful motor depressant, causing paralysis of motility and depression of sensibility by central action on the spinal cord. It is also antispasmodic and diaphoretic. In moderate doses it produces languor, slowing of the cardiac rate, enfeebled muscular action, impaired sensibility, droop-

ed eyelids and dilated pupils, with some diaphoresis. In toxic doses, as a teaspoonful of the fluid extract, it produced vertigo, diplopia, drooped eyelids and dilated pupils, (paralysis of third nerve), labored respiration, slow and feeble heart, dropped jaw, staggering gait, extreme muscular weakness and almost complete anesthesia, profuse diaphoresis, loss of articulation, and death of asphyxia from paralysis of the muscles of respiration, consciousness being preserved until CO₂ narcosis sets in. Convulsions occur in animals with backward movements, but not in man. Motion is affected before sensibility in warm-blooded animals, sensibility before motion in frogs. Gelsemium is not an arterial depressant, although it lowers the heart-rate, and is not irritant to the gastro-intestinal tract, but it produces a decided lowering of the body temperature. The effects of a moderate dose pass off in about three hours."

Phillips says it affects the sixth nerve before the third, as the external rectus is the first muscle weakened. Tweedy states that it impairs the power of accommodation of the eye for near objects, and one lady in my own practice complained after taking a moderate dose of gelsemium, that the dishes on the table appeared a long way off to her.

At the time I began to use gelsemium, eight years ago, there was very little said about it in our journals, and I was obliged to feel my way along with it. I began with the fluid extract and soon learned that it was a very powerful remedy, and I also learned that it is advisable to forewarn a patient of its peculiar action upon the eyes or it may create a family panic. I have been summoned several times to allay such panics where I have neglected this precaution.

I propose to specify in this article some conditions in which I have found gelsemium useful for mitigating suffering and correcting perverted nervous functions. Foremost among such conditions come *hysteria*. In those crises of cerebral excitement, which were formerly combated by assafoetida and valerian, I know of no drug which can excel gelsemium. Inasmuch as it affects the motor regions of the nervous system before the sensory, it is usually necessary to push its administration until diplopia and heaviness of the lids appear, in order to reach satisfactory results. The following cases will illustrate its use:

A lady, subject to nervous attacks and severe neuralgia of one arm, was overcome by a visit of sympathy to some of the sufferers by the Bussey bridge disaster. She returned in a hysterical condition, talking excitedly about the suffering she had witnessed, weeping profusely, and holding on to her arm which pained her excessively. Her entire body was twitching and she could not control herself. Gelsemium, pushed to heaviness of the lids, enabled this woman to pass a comfortable night and resume her domestic duties on the next day.

A dressmaker called at my office at noon, complaining of great nervousness, sleeplessness of several days' standing, a feeling of a bunch in her throat and inability to eat or to attend longer to her business. I gave her a few drops of gelsemium, and ordered the dose repeated every hour until relief was obtained. She reported upon the following day that the second dose compelled her to close her eyes, and she slept several hours, awakening greatly refreshed and relieved of her distress.

Again, as a remedy for certain kinds of headache,

¹ Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, on the occasion of the annual meeting of the Massachusetts Medical Society, June 12, 1888.

gelsemium has no rival. Catarrhal headaches, and those which accompany dysmenorrhea and nervous debility from overwork, are amenable to gelsemium. This drug will also conquer neuralgias of the superior branch of the fifth pair when they are not referred from neighboring inflammatory or irritated conditions which should of course be sought out and treated if present. The headaches of Bright's disease may be mitigated by gelsemium, but I have had no success with it in ordinary bilious or sick-headaches.

CASE I. Catherine Driscoll entered Carney Hospital with the history of constant pain in the upper part of her head for five weeks. She had tried various remedies without relief, and finally she had resorted to morphine, which was required in large quantity to stop her pain. Upon the first day in the hospital she was given guarana and bromides, but without producing any impression. At the next morning visit she was ordered one pill of atropine containing one sixtieth of a grain and five drops of the fluid extract of gelsemium, repeated every twenty minutes until she had received twenty drops. The pain almost entirely left her before night. A similar dosage was repeated on the following day, and the cure was complete in four days. Her general condition began to improve immediately. I will add that the morphine was stopped entirely at the beginning of this treatment.

CASE II. Joseph O'Neil entered the hospital for severe frontal pain of several weeks' standing. As there were specific antecedents in his history, he was given Shaw's mixture for a few days, but without effect. Then he was ordered three drops of gelsemium every twenty minutes until twenty drops were taken. This treatment produced immediate relief from the severity of his pain, but was continued twenty-two days before the cure was complete.

CASE III. Patrick Foley, forty-two years of age, appeared at the Boston Dispensary with a headache of six days' standing. "Regular racking pain in the forehead." Begins at 9 A. M., and lasts all day. Does not ache at night. Sleeps well. Appetite is good. Bowels very regular. Has no idea what started his headache. Came on while he was at work as longshoreman. He has a slight headcold, but he has that often. Pulse 72. Forehead is covered with blisters from the strong ammonia which he has applied. He was ordered one pill only of atropia, one-hundredth of a grain, and three doses of the fluid extract of gelsemium every half hour until physiological effects are produced or relief obtained.

Upon the following day he reported great improvement. He took three drops every half-hour until he had taken forty-five drops, and then felt as if he were intoxicated. "Dizzy and flimsy like," but not sleepy. The light looked hazy about him. He felt slight headache on awaking in the morning, and took three drops more, which affected him immediately. He has a slight pain now, but yesterday morning it was so great that his hat seemed lifting off from his head.

This was evidently a headache associated with a slight head-cold. It is noticeable that one dose on the second day produced symptoms which required forty-five drops on the previous day. Pain seems to be an antidote to gelsemium as it is to morphine, and physiological effects appear more readily after the pain has abated. The next case also illustrates this point.

CASE IV. J. A. M., merchant. Appeared at my

office on a Friday. He had contracted a head-cold on the previous Monday, and this quickly developed a severe frontal neuralgia, which was constant during the day, although it did not prevent sleep at night. His nose was stopped up, his eyes were swollen and ached badly. I gave him a mixture containing two drachms of the fluid extract of gelsemium in four ounces of water, and told him to take a spoonful every two hours. His headache ceased that afternoon. Next day he took one dose upon rising and one more about ten o'clock, when he found that he could not see, and he staggered against people. A friend thought he was intoxicated. Four hours' sleep restored him to equilibrium and he had no more trouble from his headache or his cold.

In the early stage of acute bronchitis when the cough is disturbing, tubes are dry, and there is pain across the chest, gelsemium will relieve this distress, start up the bronchial secretions, thereby furnishing material for expectoration and diminution of the inflammatory tension. The bronchial glands are not the only ones influenced by gelsemium. The sweat glands are also subject to its action, and, given under proper conditions, this drug is an unfailing diaphoretic. Follicular tonsillitis is usually accompanied by soreness of the throat, high fever, neuralgic pains in the head, back and legs, all of which discomforts abate rapidly with the diaphoresis induced by gelsemium. In such cases I cover the patient with plenty of blankets, order him to keep his arms and hands under the clothing, and give him three to five drops of gelsemium every hour until he sweats or has taken fifteen to twenty drops.

The relief to the suffering is rapid, and the patient usually sleeps while he sweats. Acute muscular rheumatism is also amenable to this kind of sweat. Gelsemium will allay excitable reflexes, and diminish the nervousness of passive cerebral congestion, and some writers claim good results from its use in acute meningitis.

Dr. McKay, of St. Louis, recommends gelsemium to replace quinine for malarial chills. He gives one-quarter to one-half drop doses of the fluid extract every twenty minutes, beginning three hours before the expected chill, and he has had excellent results from this treatment. Dr. Charles G. Davis, of Chicago, gives small doses of gelsemium to soften a rigid unyielding os, and he says that fractional drop doses at frequent intervals will diminish after-pains. Dr. M. L. Chamberlain, of Boston, combines gelsemium with quinine to correct the ringing in the ears and headache, which the latter drug often cures. By means of this combination he has been able to give quinine to sensitive patients, who were otherwise unable to take it.

The dose of gelsemium depends upon the preparation used and the results which one desires to obtain. For the relief of neuralgias one should give three to five drops every half-hour or every hour, according to the intensity of the pain. To produce sweating, one drop every half-hour is sufficient, but the patient should, of course, be well covered up in bed, and protected from the cooling effects of surface evaporation. One drop of the fluid extract every hour will relieve the cough and discomfort of acute bronchitis, and fractional drops can be used as above cited. The tincture of gelsemium is slightly weaker than the fluid extract. The active principle in gelsemium is gelsemin, which can be given in one-quarter to one-half grain doses, but I pre-

fer the plain drug itself. For convenience the extract and tincture can be prepared in tablet form of one minim each, and then dissolved for fractional doses.

In regard to antidotes for gelsemium, Potter says: "Morphine is the most complete antagonist, so are also digitalis, ammonia, alcohol, and to some extent the tincture of *xanthoxylum fraxineum*. Emetics, heat, faradization of the respiratory muscles and artificial respiration are measures of prime importance. The cardiac alkalies and tannic acid are chemically incompatible."

The advantages which gelsemium can legitimately claim are:

1. It has an agreeable taste, and is not repulsive to adult or child.
2. It does not irritate the stomach or bowels.
3. It produces no depressing after-effects from ordinary doses. The sleep is natural and the patient awakens refreshed.
4. In ordinary doses it causes no depression of the heart, and it can be used in all forms of organic disease of the heart.
5. It does not create a habit. There is no depression of nerve centres following its use, and therefore no craving for more of it.
6. Its toxic symptoms are very characteristic and striking, and they appear early, so that plenty of warning is given.

DEMONSTRATION OF A MODEL OF FROZEN SECTIONS OF THE ARM, WITH REMARKS ON THIS METHOD OF TEACHING ANATOMY.¹

BY THOMAS DWIGHT, M.D.,
Parkman Professor of Anatomy at the Harvard Medical School.

I HAVE the honor of showing the Society to-night the plaster model of the arm of twice the natural size by linear measurement. It is cut into a series of slices, seventeen in number. This is a very accurate model of an arm made into frozen sections during the past winter at the Harvard Medical School. It lies in the stand with the outer side of the shoulder looking upward, and the forearm is moderate pronation. The surfaces of the slices are painted from the actual specimen. As I believe I may claim to have introduced the study of frozen sections into American schools, I would take this opportunity of saying a few words on their value as means of learning and teaching anatomy, and of the proper method of using them.

The first feeling in attempting to understand a frozen section is one of bewilderment. Hyrtl called them anatomical puzzles. It is not till one has acquired a certain familiarity with them that they become intelligible. This familiarity comes much more quickly if the sections admit of being put together so that the student may both see where the line of section falls and also imagine the position under the surface of the body of the various structures which he sees cut through. One of the great advantages of a model of this kind is that when a slice is taken out to be shown the others remain in place, and the student sees precisely where it comes from. It is evident, also, that for the lecture-room the actual sections, with the exception, perhaps, of those of the trunk, are too small, hence the advantage of enlarged models, or, failing these, enlarged diagrams.

¹ Presented before the Section for Clinical Medicine, Pathology and Hygiene of Suffolk District Society, on the occasion of the annual meeting of the Massachusetts Medical Society, June 12, 1888.

Allow me now to show this model in some slight detail. We recognize here on the surface the projection formed by the head of the humerus, and the faint outline of the acromion and clavicle. This section shows us the large head of the humerus, the deltoid covering it, the deeper muscles passing to the tuberosities, the long head of the biceps in the groove. Lower down we see the narrow neck, the circumflex nerve and vessels curling round it, so that we can see from which side the joint may be best opened for a resection without injury to this important nerve. The piece being replaced, we see the groove along the outer edge of the biceps, in which runs the cephalic vein. The inner groove, the guide to the artery, is hidden as the arm lies. We, therefore, on taking out a slice, find the artery at the lower side. By examining a series we follow the course of the musculo-spiral nerve twisting round the humerus. Lower down we see the olecranon and the outer condyle, and can easily imagine the point a little below and behind the latter where we should feel for the head of the radius. We verify all these points on the sections which are here very striking, owing to the great changes of form which rapidly succeed one another. We see the ulnar nerve in the hollow between the olecranon and inner condyle. The bifurcation of the brachial is somewhere in the thickness of one of the slices. In the same way we can study the changes of size, shape, and relative position in the bones of the forearm. The transformation of muscles into tendons, the arrangement of the latter at the wrist, the complication of the bones of the carpus, and the simplicity of the succeeding metacarpus are shown on the following slices.

Two criticisms were made some years ago by Professor Ranney, of New York, on the value of frozen sections. The first one was that you never find two alike. This, to my mind, is a very puerile objection. Indeed, it is rather to be regarded as a compliment, for it shows that the sections tell the truth. What two bodies are perfectly alike? And if the surface differs the section must necessarily differ also. Further, as is well known, both to anatomists and clinicians, the position of the internal organs is by no means always the same, and this is never shown so strikingly as by frozen sections. The second criticism, on the other hand, is a very weighty one. It is that frozen sections show structures as they are in the dead, and not as they are in the living body. Apart from the influence of cadaveric changes, the element of muscular tonicity is usually wanting, and this has its effect on the soft parts. Perhaps it has already occurred to some of my hearers that this model is very evidently one of a dead arm. Such it undoubtedly is. My reason for having it made thus was that I wished the sections to be drawn from the actual specimens, and I preferred copying a dead arm accurately to having the handsomer model of a living arm, and painting the sections by guesswork to make them correspond. I am far from considering that this drawback detracts seriously from the value of frozen sections, but the fact must be borne in mind.

In frozen sections through the pelvis the anus is almost invariably patulous. In the museum there is a median section of the pelvis made by Dr. L. J. Mixer, in which the walls are in apposition for about an inch where the sphincter and surrounds it. I presume the subject must have been at least slightly frozen soon after death, during the rigor mortis, before the sphinc-

ter became relaxed. I can see no reason to doubt that under these circumstances the relations are those of life.

I have used frozen sections for years in teaching anatomy, and expect to use them more year by year. The Warren Museum of the Harvard Medical School contains probably by far the finest collection in the country. I hope members of the Society will not fail to visit the museum, and will especially notice a section made by Dr. O. K. Newell from the crown of the head through the pelvis. There is now making a model of the leg on the same scale as this one of the arm.

Before closing, I would say a word on the use of the living model in conjunction with frozen sections. There is nothing original certainly in the use of the living model. I remember when I was a student Dr. Bigelow occasionally introduced one. Dr. Holmes showed the "living skeleton" to the class, and other gentlemen have occasionally used models.² I have found, however, that the model deserves a regular place among the methods of anatomical teaching, and have used him regularly for years, but I recently have adopted the plan of using the live model in conjunction with frozen sections, and I believe that much is to be gained by the combination, as one method assists the other.

REPORT ON PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

TREATMENT OF HERNIA CEREBRI.

MACLAREN¹ reports a case where a man on the third day after a fracture of the skull had the depressed fragments elevated and the loose fragments of skull removed. A hernia cerebri was first cut off on the ninth day. On the forty-second day the hernia cerebri was removed for the third time, and a silver plate was firmly secured inside the skull. The plate was a florin rolled out to about four times its original size. It was then cut down to fit the opening in the skull, and was made self-retaining by nicking its edges. It did not fit exactly, which MacLaren considered an advantage, as it allowed drainage. So long as the plate was in position no hernia cerebri occurred, and there was singularly little irritation. The plate was removed on the one hundred and fourth day, the edges of the scalp pared and brought together.

BONY ANKYLOSIS OF THE TEMPERO-MAXILLARY JOINT AND ITS TREATMENT.

G. Zipfel² has made a careful study of five cases treated by osteotomy and twenty-one cases treated by resection. Osteotomy he speaks of as performed in the following different ways: (1) It may be linear, through the condyles of the maxilla; (2) cuneiform involving the neck of the condyle; (3) linear, through the coronoid process; (4) linear, through the neck of the condyle and the coronoid process together. Zipfel considers that resection is preferable and proposes the following operation:

1. An incision is to be made four cm. long, starting from the supra-glenoid ridge of the zygomatic arch running downwards and slightly forwards, and not ex-

tending deeper than the subcutaneous cellular tissue for fear of wounding the temporo-facial nerve, which the author finds crosses over just an inch below the arch; if the coronoid process has to be dealt with, an extra incision of three cm. has to be made running in the direction of the zygoma, and, therefore, harmless.

2. Recognize and push aside the lobules of the parotid gland. Keep the nerve-trunks out of the way by means of a blunt hook; the condyle and its neck can then be easily got at.

3. The periosteum has to be scraped off the bone, care being taken not to wound the maxillary artery.

4. A curved sound with a groove is passed beneath the condyle and along it is slid a chain saw. In operating, the buccal cavity is not opened.

THE PROGNOSIS OF EXTIRPATING THE LARYNX.

Maydl³ states that in one of his cases which had been free from recurrence for twenty-five months, this afterward occurred, and he, therefore, believes that a case cannot be considered to be definitely cured until three years after operation, merely because recurrence has not been observed within this time. Of sixty-five cases operated on thirty died in a short time after operation, twenty died within nine months after operation from recurrence. Eight cases were at this time without recurrence, but in only two cases could it be said that a definite cure had been effected (thirty-four months and four years after operation.)

Sir Morel Mackenzie⁴ has collected one hundred and three cases of extirpation of the larynx for carcinoma, and six for other causes, a total of one hundred and seventeen. Of these twelve, or about ten per cent., lived twelve months after the operation.

ACUTE THYROIDITIS.

Dr. Barlow⁵ read a paper on "Acute Enlargement of the Thyroid Gland," at a recent meeting of the Clinical Society, and he related the case of a little boy, aged three, in whose thyroid gland an attack of inflammation occurred, which lasted altogether about a fortnight. The child had just previously suffered from erythema nodosum on the legs, and it was whilst recovering from this affection, and after having been out in the park, that the thyroid enlargement commenced in association with a nasal catarrh, of which the chief symptom was a discharge of thin glairy mucus. Reviewing the literature of the subject, Dr. Barlow arrived at the conclusion that his case must be regarded as coming under the "idiopathic" class of Luce, and although there had been erythema and nodosum, still the absence of arthritis and heart disease or other genuine rheumatic manifestations formed a warranty for not considering the case as of true rheumatic nature. Some observers, chiefly abroad, have noted a rheumatic swelling of the thyroid having a definite relationship with well-founded rheumatism; and Dr. Angel Money quoted a case of this character from his own experience. Mr. James Berry narrated many interesting particulars concerning acute enlargement of the thyroid gland; and some of these having a fatal ending might tally with cases like the one narrated by Dr. Barlow, in which the enlargement at one time had a threatening aspect. Nevertheless, the definite cycle run by cases of rheumatic and idiopathic descriptions must, we think, be held to differentiate them from or-

¹ Tr. Clin. Soc. Lond., Vol. XIX, 1886, p. 139.

² Gazette Medicale de Paris, July 2, 1887.

³ Dr. Keen, of Philadelphia, belongs the credit of having done the most to make this method of instruction popular in America.

⁴ Jour. of Laryngology, April, 1887.

⁵ Jour. of Laryngology, Dec., 1887.

⁶ Med. News.

inary goitre, in which the mode of commencement may be acute, but the course always chronic, and showing recurrent tendencies. The perusal of Dr. Barlow's paper will raise the reflection that the causation of acute thyroid enlargement is as imperfectly known as it is seemingly various.

THE TREATMENT OF CAROTID HÆMORRHAGE.

In four cases Treves⁶ has successfully treated severe carotid hæmorrhage, by the following method:

In the neck, pressure upon the carotid artery cannot be applied with success, or maintained for a serviceable length of time. The vessel can, however, be very readily occluded for a while and the carotid circulation arrested without the artery being permanently closed. This is effected by exposing the artery in the usual way and passing around it a thick piece of soft catgut. This is tied in a very loose loop. By pulling upon the loop the circulation through the vessel is at once arrested, but is, however, at once restored when the tension upon the loop is relaxed. Without discussing the possible value of this procedure, the following case may be briefly detailed.

A man, aged twenty-five, was brought to the London Hospital in 1880, bleeding profusely from a deep wound in the neck, about the level of the great cornu of the hyoid bone. While attempting to open a soda-water bottle the bottle burst, and a fragment of glass was driven into the neck. The cut made was less than one inch in length. The glass had been removed. The bleeding had been very profuse, and was arterial. The patient was blanched and almost insensible. The radial pulse could scarcely be felt. The bleeding was for the time checked by pressing a tampon against the wound. It was obviously useless to attempt to find the bleeding point while blood was welling up from so deep a wound. I, therefore, at once exposed the common carotid artery through a lower incision and placed a catgut loop around it. Traction upon this arrested all bleeding. The patient was placed in bed and surrounded with warm bottles. His condition was so grave that I did not feel disposed to search for the bleeding point. Traction upon the loop was maintained for half an hour. On relaxing the catgut no bleeding took place, and it never again recurred. The loop was left *in situ* for four days, when it was removed. The man, who was in vigorous health at the time of the accident, made a rapid and uninterrupted recovery. I supposed the bleeding to have come from the superior thyroid artery.

ŒSOPHAGOTOMY.

Fischer's analysis of seventy-nine cases of this operation on account of foreign bodies⁷ yields the following information: Number of cases, 80; 62 successful, 16 fatal; shortest interval between accident and operation, one-half hour, and longest twelve years. The foreign bodies in a majority of cases were bones or artificial teeth accidentally swallowed while eating. Fischer regards the operation as one of relatively little danger. Fistulæ never result, and strictures, subsequent hoarseness, or severe cough, are quite rare. Death in the fatal cases is most often due to ulceration of the mucous membrane, and perforation, mediastinal abscess, pleurisy, pneumonia and pulmonary gangrene. In other causes exhaustion, probably the result of fasting due to painful deglutition preventing

ingestion of food. In the fatal cases it is considered that death was probably the result of delayed surgical treatment rather than from the operation. A gentle attempt should be made to force soft food or smooth hard bodies into the stomach with a gum-elastic œsophageal bougie. Large pointed angular bodies which are liable to wound the wall of the alimentary canal are to be removed per orem with an umbrella probang; the same is true of long angular bodies. Small hard bones not especially sharp or angular are preferably removed through the mouth, but may be also displaced downwards. If the body cannot be dislodged, œsophagotomy should be performed, in connection with which the following facts are important. Inflammatory infiltration, cervical and peri-œsophageal, may occur two or three days after the body is swallowed, and ulceration, gangrene and perforation of the œsophagus on the fourth day. An impaction may, after a few days, cause swelling of the thyroid, by which an operation is made more difficult. Fasting from impeded deglutition rapidly weakens a patient, who, after a week, may reach a state of extreme exhaustion. The mortality is twelve per cent. less when performed within two days than when it is delayed to the third or fifth day, and Fischer has, therefore, concluded that an operation should be done at the end of forty-eight hours if bloodless manipulation is unsuccessful. If an attempt has been made to remove the body on the first day, the surgeon should wait twenty-four hours before making a second attempt, which should be the final one before operating. If a foreign body has been already impacted several days before an attempt has been made to dislodge it, bloodless methods should be at once followed by œsophagotomy. The surgeon should operate at once when the character of the impacted body renders an attempt to move it dangerous; for example an open clasp-knife. Tracheotomy should be at once performed when the foreign body is in the trachea. When a clean wound is made into a healthy œsophagus through uninfected tissues it is desirable to close the œsophageal wound at once by suture, and drain the external wound under an antiseptic dressing. Perforation, gangrene or inflammatory infiltration of the surrounding soft parts contraindicate such treatment, and the wound should be treated unclosed. The use of an œsophageal tube for feeding is discouraged, for whether the œsophageal wound remains closed or open the patient can generally swallow small amounts a few hours after the operation.

THE TREATMENT OF AORTIC ANEURISM BY THE INTRODUCTION OF STEEL WIRE.

White and Gould⁸ treated an aortic aneurism by introduction of thirty-two feet of steel wire; (Moore's method) the case ended fatally. They make the following deductions from the sixteen cases that have been treated by Moore's method: (1) Moore's treatment is worthy of careful trial in properly chosen cases; (2) the operation should be performed before there is reason to suspect rupture of the sac; (3) only a small quantity of wire should be introduced at any one time; (4) No firm pressure should be made over the aneurism afterwards.

A MODE OF FIXATION OF THE SCAPULA.

Mr. W. Arbuthnot Lane has a number of times

⁶ Lancet, Jan. 21, 1888. Med. News.

⁷ Deutsche Zeit. f. Chir., XXV, p. 117. 6.

⁸ Med. Chir. Trans., Vol. LXX, p. 277.

placed the profession under obligations to him in the elucidation of various obscure facts. Notably in regard to the mechanism and frequency of fractures of the first rib. Mr. Lane has carefully studied the relations existing between the coracoid process and the clavicle, when the arm is in an extreme degree of flexion.⁹ He finds that when the arm is fully extended that the upper surface of the coracoid process is in contact with the under surface of the clavicle, and that frequently in a certain number of burden bearers that there is an eburnation of the bones at the point of impingement, and further that when the bones are in this position to one another that the scapula is practically fixed. The practical application of this fact is that, when a surgeon is obliged to break up adhesions in a joint, that this is the position the humerus should be placed in, and he states that when the humerus is in this position that the scapula is fixed and that the motions of rotation, complete adduction, and abduction may be performed.

A NEW METHOD OF REDUCTION OF DISLOCATIONS OF THE SHOULDER.

Abril¹⁰ brings forward the following method for the reduction of dislocations of the shoulder.

In all the methods ordinarily employed for the reduction of dislocations downward of the humerus, the trunk is fixed and the head of the humerus is raised into the glenoid cavity. Dr. Abril inverts this proceeding; his plan is to fix the humerus and to make the glenoid cavity descend on to the head of the humerus. He claims for his method that it is most simple, easily and quickly done, that chloroform is not necessary to obtain muscular relaxation, that the pain is trifling, and that no assistants are required. He makes the patient stand with a crutch in his axilla; he then holds the hand of the affected side, making slight traction downward; the patient is now to let himself down as if he were going to fall on his knees, and as he falls the head of the humerus glides into its normal position, and the patient is surprised at finding himself cured.

AN ANALYSIS OF TWO HUNDRED AND SEVEN CASES OF MAMMARY CARCINOMA.

Gross¹¹ find that 82.17% were carcinomatous.

	6 first appeared between 20 and 29 years of age.
39	" " " 30 " 39 " "
78	" " " 40 " 49 " "
62	" " " 50 " 59 " "
21	" " " 60 " 69 " "
1	" " " 70 " 79 " "

Children had been borne by 86.36%, and rather more than 90% of these had nursed their children. The patients' general health was excellent in 69.56%, indifferent in 17.39%, and bad in only 13.04%. The disease was ascribed to traumatism in 9.66%, but the tumor developed within six months in less than half of these. In only two of those that nursed was it clear that the tumor had started from the induration. In 2.41% there was antecedent non-puerperal mastitis, and in four-fifths of these the disease started at the seat of crusts and scabs for several years before the appearance of the tumor. In 2.9% it began as Paget's disease of the nipples, or as a malignant papillary dermatitis. In 4.83 per cent it was inherited in direct line of descent.

The seat of election was the upper and outer por-

tions of the gland and the immediate vicinity of the areola and nipple. In 80% of the cases pain of a sharp intermittent character was experienced; in about 15% there was merely a sense of discomfort, while in about 5% there was no discomfort whatever. The skin was involved in 74.87%, being met as early as two weeks and as late as twenty-nine months, averaging 12.6 months.

The opposite breast was infected in 3.86%, appearing on the average at 21.5 months. Infection of the axillary lymphatic glands was detected in 65.70%; the supra-clavicular in 7.20%; the sub-clavicular in 1.40%, and the cervical 1%.

This percentage is susceptible of increase, however, since in latter operations, where the axilla has been invariably cleaned out, these glands were affected in 95.35%.

Of the first 100 cases, 91.75 were marked by local reproduction, and he was unable to find a single recovery. In these cases the axilla was not cleared out. In the second series, 107 cases, he speaks with certainty of 53 cases, of which ten died without operation. Local reproduction occurred in 52.77% of the operations in the average in seven months.

The average life of the thirteen who died with recurrence was thirty-two months, varying from two to ninety-four months. The average period since the operation upon those who still survived without recurrence was three years and three months, varying from eight years and three months to six months.

A NEW METHOD OF FORMING A SPHINCTER AFTER GASTROSTOMY.

The following ingenious method is described by Girard¹² to avoid the leakage from the gastric opening which almost invariably occurs. Through a vertical incision (about fifteen centimetres long) the left rectus abdominis muscle is divided in the upper portion and in the median line. The peritoneal cavity is opened near the middle of the cut, and a wedge-shaped portion of the stomach near the fundus drawn out through the wound. A row of silk sutures which penetrate the post sheath of the rectus, the edge of the peritoneal wound and the stomach wall at the base of this protruding portion fix the stomach in the wound. An incision about ten cm. long and parallel to the operation wound is now made on either side of the latter, so that two strands of muscle fibre about the thickness of a finger are formed. These bands are now crossed laterally, and the stomach drawn out through the sphincter-like opening. The muscular bands and the gastric pouch are now fastened in place by sutures, after which the stomach is opened. Girard hopes in this way to obtain a sphincter controlled by muscular contraction, or by the tension of the rectus on the cicatrix should atrophy of muscular fibre result. The early death of Girard's patient from exhaustion not the result of the operation, prevents its inventor from making any statements in regard to its efficiency in guarding the opening of a gastric fistula.

RECTAL INSUFFLATION OF HYDROGEN GAS AS AN INFALLIBLE TEST IN THE DIAGNOSIS OF VISCERAL INJURY OF THE GASTRO-INTESTINAL CANAL IN PENETRATING WOUNDS OF THE ABDOMEN WITHOUT LAPAROTOMY.

This method, which was brought forward by N.

⁹ 11, 21, J., May 19, 1888, p. 1047.

¹⁰ Lond. Med. Rec., Dec. 15, 1887.

¹¹ Med. News, Nov. 26, 1887, Ann. Surg., June, 1888, p. 451.

¹² Wien. Med. Presse, 1888, No. 25, Bl. XXIX, 926.

Senn at the American Medical Association,¹³ has already demonstrated its usefulness in two recorded cases; in Mackie's case¹⁴ it certainly freed the surgeon from a large medico-legal question, in that it settled the diagnosis of a visceral injury in an assault with intent to kill. In the second case by Keen, and reported by Taylor, it was used to determine the seat, whether in the large or small intestine of a fecal fistula;¹⁵ this it accomplished.

Below are given Senn's conclusions:

1. The entire alimentary canal is permeable to rectal insufflation of air or gas.

2. Inflation of the entire alimentary canal from above downward, through a stomach tube, rarely succeeds, and should, therefore, be resorted to only in demonstrating the presence of a perforation or wound of the stomach, and for locating other lesions in the organ or its immediate vicinity.

3. The ileo-cæcal valve is rendered incompetent and permeable by rectal insufflation of air or gas under a pressure varying from one-fourth of a pound to two pounds.

4. Air or gas can be forced through the whole alimentary canal, from anus to mouth, under a pressure varying from one-third of a pound to two and a half pounds.

5. Rectal insufflation of air or gas, to be both safe and effective, must be done *very slowly and continuously*.

6. The safest and most effective rectal insufflation is a rubber balloon large enough to hold four gallons of air or gas.

7. Hydrogen gas should be preferred to atmospheric air or other gas for purposes of inflation in all cases where the procedure is indicated.

8. The resisting power of the intestinal wall is nearly the same throughout the entire length of the canal, and in a normal condition yields to a distal force of from eight to twelve pounds. When rupture takes place, it either occurs as a longitudinal laceration of the peritoneum on the visceral surface of the bowel, or as multiple ruptures from within outward at the mesenteric attachment.

9. Hydrogen gas is devoid of toxic properties, non-irritating when brought in contact with living tissues, and is rapidly absorbed from the connective-tissue spaces and all of the large serous cavities.

10. The escape of air or gas through the ileo-cæcal valve from below upward is always attended by a blowing or gurgling sound heard most distinctly over the ileo-cæcal region, and by a sudden diminution of pressure.

11. The incompetency of the ileo-cæcal valve is caused by a lateral and longitudinal distension of the cæcum, which mechanically separates the margins of the valves.

12. In gunshot or punctured wounds of the gastrointestinal canal, insufflation of hydrogen gas enables the surgeon to determine positively the existence of a visceral injury without the risks and medico-legal responsibilities incident to exploratory laparotomy.

CONTUSION OF THE ABDOMEN WITH RUPTURE OF THE INTESTINES.

B. Farquhar Curtis¹⁶ arrives at the following conclusions on this subject:

¹³ Med. News, May 26, 1888, p. 569.

¹⁴ Med. News, June 9, 1888, p. 628.

¹⁵ Med. News, June 9, 1888, p. 629.

¹⁶ Am. Jour. Med. Sciences, Oct., 1887.

"(1) The treatment of contusion of the abdomen should be purely expectant in the early stage, until symptoms of internal injury have appeared, or until the full extent of time in which they may be expected has passed. Exploratory laparotomy at this time is inadmissible. (2) When symptoms of uncontrollable internal hæmorrhage or serious visceral injury appear laparotomy is indicated; but when the diagnosis is uncertain the operation should always be begun as an exploration. (3) Great collapse is an absolute contraindication to all operative interference. (4) When rupture of the intestine is found, the best method of treatment is to secure the injured gut in the abdominal wound, and form an artificial anus. This can be easily relieved by a later operation when the patient has recovered his strength."

LAPAROTOMY FOR ACUTE INTESTINAL OBSTRUCTION.

An admirable analysis of all the reported cases since 1873, when the principles of antiseptics may be said to have first come into general use, is made by B. Farquhar Curtis.¹⁷

Table I shows a total of 328 cases, with 102 recoveries and 226 deaths, the percentage of mortality being 68.9%.

Table II shows clearly that the percentage of mortality is increased by delay. There are a number of other tables which give us various phases of the question.

The rival to laparotomy in acute intestinal obstruction is enterostomy, and the statistics of Treves give a mortality of 41 out of 61 cases, 67.2%. This is not much better than that for laparotomy, 68.4%.

"When the operative interference was limited to finding and removing the obstruction, without wounding the bowel, the mortality was only 56.4%, calculated on 186 cases; when it was necessary to establish an artificial anus after the obstruction had been relieved (owing to gangrene or rupture of the gut) the mortality rose to 66.6% in fifteen cases; and, finally, when an attempt was made to suture the wound in the intestine, whether it involved the entire circumference or not, the mortality reached the extreme point of 86.6% in 45 cases. Only 10% of the deaths in the last two classes of cases were from sepsis due to the operation, and not more than the usual number, 50%, were due to the condition of the patient, while 23% were due to the operation and to shock."

Finally, the author concludes as follows, that "a short, simple operation gives almost the only hope of success, and the earlier the operation is performed the shorter and simpler it may be made."

(To be continued.)

Clinical Memorandum.

A CASE OF TRICHINOSIS.

SERVICE OF A. M. SUMNER, M.D.
REPORTED BY W. L. BURRAGE, House Physician.

J. McA., thirty-seven years old and single, came to the City Hospital, February 6th last, suffering with what he thought to be rheumatism. He was a native of Maine, a carriage-builder by trade, and came from a boarding-house at the North End. At the time of

¹⁷ Ann. of Surg., May, 1888, p. 329.

entrance he gave a somewhat meagre account of himself. The following history is made up of his statements and of particulars gleaned from two women and a male friend, who took care of him just previous to his coming to the Hospital. Family history negative. Previous history: Fever and ague seventeen years ago, but no return of the trouble since; no venereal and no rheumatic history; a constant smoker and a hard drinker at times; was in the habit of going on a spree about twice a month, or whenever he happened to have a little money. Although a carriage-builder by trade, he could turn his hand to almost anything. The last work he did was leather-finishing in the town of Peabody, Mass., where he had been living with his sister for several months. He led a roving life, for the most part travelling about from one town to another, and living in cheap boarding-houses. Several years ago he went as far West as Minneapolis, but for the last two years had not been away from the vicinity of Boston. Most of this time he was in Peabody and Boston, the only exception being a short trip to Maine last Autumn.

Present history: Patient had been in poor health ever since he returned from the House of Correction, where he spent two or three months last summer, but had complained of nothing in particular. Four weeks previous to entrance began to have pain in left hip and knee, with some redness and swelling of those joints. About a week later had pain, that ran across abdomen into the back and over the region of the breasts, the pain daily increasing in severity.

Upon arriving at the boarding-house where he was cared for previous to coming to the Hospital, it was noted that he made use of a cane in walking. He was in poor flesh and looked sick; ate very little besides tea and toast, and could not sleep; said that he was suffering from pains that were all over him, but most intense in his lower back and abdomen. This was just two weeks before entrance. During the next two weeks he was confined to the bed most of the time; he moaned and cried out to such an extent, especially at night, that his friends were obliged to remove him to a more secluded house, where he would not disturb any one, and later to the Hospital, because he grew no better.

When he arrived at the Hospital he had a temperature of 101.3°, pulse of 85, and respiration of 18. The urine was pale, acid; specific gravity, 1040; urates much increased in amount; albumen and sugar absent; the average twenty-four hours' amount for the first week of his stay in the Hospital was thirty-five to fifty ounces.

Physical examination showed a well-developed, poorly-nourished man of about five feet ten inches in height. Heart: apex-beat seen and felt in fifth interspace inside nipple line; area of cardiac dullness bounded as follows: above, third rib; on right, one inch to right of median line; on left, one-half inch outside nipple line. A double murmur heard all over præcordia and in the first and second interspaces to the right of the sternum; systolic murmur heard best at apex, diastolic over second right interspace and upper sternum; both heard in axilla, systolic more plainly; neither in the back; systolic heard also in neck; pulmonic second sound accentuated; an arterial pulsation, seen at bend of elbow; pulse that of aortic regurgitation. Examination of the lungs and abdomen negative.

No œdema anywhere; some tenderness on pressure over right shoulder and left hip-joints; no redness or swelling. At entrance, patient was put on a treatment of salicylate of soda, grs. xii, every two hours, and this was continued until the 9th. Under date of the 9th, there is a note in the records to the effect that since entrance patient had suffered severely from sharp, lancinating pains, starting in back, and running through cardiac and epigastric regions; also from pains in the thighs and legs; unable to sleep at night because of the pain; profuse sweating; pain only partially relieved by opiates; extreme tenderness on lightest pressure over whole surface of body, most marked over lower costal cartilages and in the flanks.

On the 8th a sphygmographic tracing of the pulse was taken, showing the characteristics of aortic insufficiency. Morphia, hot fomentations, antipyrine, and nitro-glycerine all failed to control the pain, although at times he got a little sleep. Potassic iodide in five and ten grain doses, t. i. d., for four days had no appreciable effect. On the 16th, patient was put on four grains of quinine, t. i. d. On the 18th this was increased to four grains four times a day, and on the 20th to seven grains four times a day. On the 18th there was no material abatement of the pains in the epigastric region; the pains in the thighs and legs had disappeared. There was no redness, swelling, or especial tenderness of any of the joints. The temperature, which had been rising for the last two days, reached 102.8° that evening, the highest at any time during the disease.

From this point the records are as follows:

February 21st. Patient states that he has always been fond of pork; it is his favorite dish. He last ate it in the form of fried bacon about one week before his admission to the Hospital. It was purchased at a shop in Causeway Street in Boston. The note goes on to say: extreme tenderness on the lightest pressure over whole scalp, especially on the left side of the head; tongue dry, white-coated on the edges; pupils equal, react to light and accommodation; patient somewhat delirious at night.

February 24th. Microscopic examination of a portion of muscle removed from the supinator longus, right forearm, failed to reveal the presence of trichinae. To-day, tongue heavily brown-coated, dry, and cracked. Patient complains of acute pain on the slightest movement of his body; has lost much flesh; gets out of bed often at night, and requires restraint with sheets; intellect moderately clear during the day; countenance wears an expression of great agony.

On the 22d quinine was omitted, and from this time the only treatment was whiskey and the Hospital solution of citrate of iron and quinine in sherry.

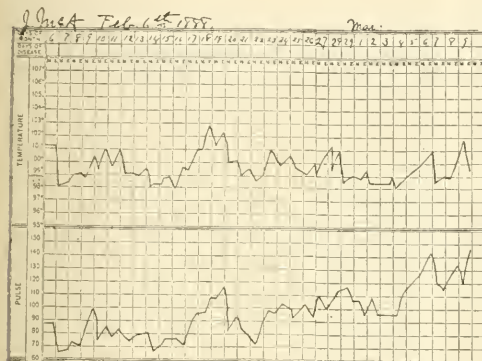
February 29th. A second examination of muscle, this time taken from the tensor vaginae femoris, right thigh, failed to show trichinae. (As there was no hook for the purpose, the muscle was procured in each instance by injecting a few minims of a four per cent. solution of cocaine subcutaneously and intramuscularly, and cutting down on the muscle. The operation caused no pain, the wounds were dressed antiseptically, and both healed by first intention.)

March 4th. General condition somewhat weaker daily; in a state of stupid delirium all the time; incontinence of urine and feces. Patient continually rolls the bed-clothes into balls and throws them on the floor. Physical examination shows: pupils equal, re-

acting well to light and accommodation; cardiac murmurs as before; intensity of percussion resonance over both lungs in front somewhat diminished; in other respects, lungs negative. Abdomen negative; no paresis of muscles of extremities; tongue heavily coated; breath offensive; sordes on teeth and lips; universal tenderness on the lightest touch; much emaciation.

From this time till the 7th there was no change in his condition, except that he was not so bright mentally. When spoken to, his only answer was a moan. On the 8th he was manifestly weaker. He had become a living skeleton, cheeks hollow, limbs nothing but skin and bones. He lay in bed with knees drawn up, eyes rolling from side to side or half closed, muttering to himself while he rolled up the bed-clothes and threw them about.

This was his condition until the 9th, when he failed rapidly and died.



The bowels had been regular and the stools formed up to the 1st of March; after that there was considerable diarrhoea.

The patient took nourishment well, as a rule, though at times he would eat nothing for twenty-four hours. There was no vomiting. The urine, examined several times, was uniformly negative. The temperature and pulse are shown on the accompanying chart. No record of the respirations were kept, but they were at no time especially rapid or labored. Patient complained of pain on forced respiration; ordinary breathing was not painful.

Every effort was made to secure an autopsy, but without avail. After much persuasion, and just as the undertaker was removing the body, permission was obtained to take a piece of muscle. Accordingly, an incision was made over the seventh intercostal space on the right side, and a small portion of the intercostal muscle removed.

A few encapsulated trichinae were found in this on microscopic examination. There were no calcareous deposits in the capsules.

—*Lawyer.* "Was the disease from which your husband died contagious?"

Witness. "No, sir; but it was awful ketchin'." —
Burlington Free Press.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

CHARLES HARRINGTON, M.D., ACTING SECRETARY.

REGULAR meeting, Monday evening, May 14th, at Medical Library, 19 Boylston Place. In absence of the regular Chairman, Dr. H. W. WILLIAMS was made Chairman, *pro tem.*

Dr. H. H. A. BEACH reported

A CASE OF STRANGULATED HERNIA.

The strangulated hernia presented facts of unusual interest bearing upon the treatment of such cases complicated with undescended testicle. The patient was a young man who entered the Hospital with a history of a hernia, always reducible until forty-eight hours before his admittance. The day before entrance,

taxi had been employed for four hours under either unsuccessfully. When he reached the Hospital he was almost moribund. He was stimulated, etherized carefully, and a slight attempt made at taxis, to ascertain the condition of the sac and how much effusion it contained. It was found impossible to push the gut back, whereupon I made an incision into the largely distended sac, and found that it held a tea-cupful of bloody-colored serum; this having been evacuated, the finger could easily be carried into the ring and the intestine returned to the peritoneal cavity, there being no adhesions. The question naturally occurred: why had it been impossible to reduce the hernia before opening the sac? The reason was an undescended testicle, which was adherent to the sac on its inner side, the attachment or pedicle allowing the testicle to move easily inside and outside the ring. Of course, when there was a certain amount of fluid in the sac, the application of any pressure on the outside of the tumor would make the testicle, if it happened at that moment not to be in the hernial sac, act like a ball-valve, and so prevent the return of the distended gut. The moment that the sac was opened and the fluid evacuated the gut could be returned, and the testicle followed it easily. It is a condition that may occur in any hernia where the testicle is undescended, and teaches us that strangulated hernia complicated with undescended testicle on the same side is not to be subjected to prolonged taxis. An early exploratory incision is less dangerous. A few days after I saw a case with an undescended testicle on the opposite side from the hernia, the hernia being irreducible. No attempt was made at reduction, as there were no symptoms of strangulation.

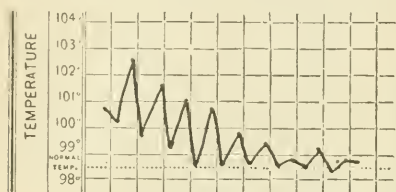
I have, also, to report

TWO CASES OF CARBUNCLE,

one in an elderly woman, and the other in an elderly man. The woman had already been so much prostrated by one carbuncle that it was desirable, if possible, to arrest the disease without the hemorrhage and operative disturbance which naturally follows incision and scraping of carbuncles and removal of slough. With a solution of 1-2000 corrosive sublimate, I made subcutaneous injections into the border of the slough and inflamed tissue adjoining, and into

the mass of slough, with the idea of making an antiseptic wall around the area of sloughing tissue, to prevent the migration of micro-organisms into the healthy tissue, and to kill those within the wall.

There was a little sharp, stinging pain, and soon afterward a firm wall of lymph surrounded the slough. The carbuncle had existed five days and was spreading, but from the moment of injection the disease was arrested, and the slough separated rapidly with comparatively little pain. The second case is in the Hospital now. The diameter of the carbuncle was three and a half inches. It was treated in the same way, and is going on with an equally good result, and without anything else except the application of a cloth wet in a solution of sulpho-naphthol and water, 1-50, applied afterward. The temperature has steadily diminished in both cases since the injection.



Of the different ways of treating carbuncles, I have seen a variety used by other physicians and surgeons, and have employed a number of them in my own private and hospital practice. I have never seen so immediate a response to treatment by any other method. So far as two cases go to prove it, simplicity, safety, and efficiency are its characteristics.

Mr. Rushton Parker, in a very interesting paper published in the *British Medical Journal* for March 31st, reports the successful injection of boils with corrosive sublimate and carbolic acid solutions, but, so far as I know, the plan of injecting the inflamed skin from the outside, so as to surround the slough, in addition to a thorough saturation of the latter with the antiseptic, has not been applied to carbuncles.

DR. FRANKLIN B. STEPHENSON said: This injection of carbolic acid in these cases reminds me that similar methods have been used to reduce adenitis in the form of bubo. I have tried it once with no success. I would like to ask the experience of those present in reference to such a method of treatment in the cases of bubo where there is apparently no specific cause, but only a strain or unusual exertion.

Dr. R. H. Fitz presented a stomach from a patient of Dr. Beach. The case was one of

PERITONITIS FROM PERFORATING ULCER OF THE STOMACH.

It presents considerable interest with reference to the question of laparotomy for peritonitis. The patient entered the Hospital under the care of Dr. Abbott, and was for some time under his treatment for chronic ulcer of the stomach. The symptoms were sufficiently well marked to give but little doubt in reference to diagnosis, and after a certain length of time the patient, a woman, was relieved of the original symptoms of the ulcer. She recovered to such an extent that she was sent to the Convalescent Home,

During her stay there an attack, apparently of follicular tonsillitis, occurred, from which she recovered in the course of a few days. She was able to go out and walk in the garden for two days, but on the third day, Wednesday, she was seized with a chill. This was followed, a few hours later, by pain in the hypogastrium, with elevation of temperature. The elevated temperature and the abdominal pain persisted; the latter became general. As the case was evidently one which required more active treatment than could be given at the Home, she returned to the Hospital. On the day of her return, Friday, there was no especial distension of the abdomen, but there was general abdominal tenderness and a marked elevation of temperature. On Saturday the same condition of things existed: the pain was worse, the constitutional disturbance greater, and she was then lying on the right side, with dulness in the right iliac region, the tenderness being greater on the left side than on the right. She was transferred, on Sunday, to Dr. Beach's care, with reference to relief by operation to the peritonitis. In the morning her condition was very much worse than the day before; her prostration was more extreme, the pulse being very weak, the abdominal distension considerable, with tympanic resonance everywhere. There was a condition of stupor, partly attributable to the opium necessary to relieve the pain, but, at the same time, greater than the quantity of opium alone would explain. A consultation of several of the surgeons was held in the afternoon, at which some of the physicians were present, with reference to opening the abdomen. The history of the case indicated a peritonitis, probably from perforation. The question of the perforation taking place from the stomach or from the appendix, or caused by a pelvic process, was considered. A vaginal examination gave no evidence as to the existence of pelvic trouble, and the question essentially lay between a gastric ulcer and the appendix. The evidence in favor of a perforating gastric ulcer was to be found in the pre-existence of this disease, as indicated during her previous stay in the Hospital and the well-known likelihood of such a condition occurring in the history of this affection.

The possibility of a perforation of the appendix was to be found in the localization of the dulness, with the resistance, in the right iliac fossa, and the fact that the abdominal pain, according to her statement, started in the hypogastric region. It seemed probable, if the perforation occurred in the stomach, that the pain would have been, at the outset, in that region, with some sensation of tearing. Her condition, however, was so grave (she was evidently moribund at the time of the consultation) that a laparotomy was considered inexpedient, since this operation might be exploratory at the best, and, in case the appendix was not found to be the source of the trouble, a very extensive and prolonged operation would be required.

She died a few hours later, and the specimen shows the source of the peritonitis, which was fibrino-purulent. The inflammatory product was found in greatest abundance in the pelvis, and it is probable that the dulness found in the fossa on the preceding day was due to the gravitation of the liquid to that region. The stomach shows two ulcers, one on the anterior and the other on the posterior wall. The latter is the larger of the two, and has for its floor the pancreas. A perforation existed through the adhesions which united the stomach and pancreas, and this was prob-

ably the source of the peritonitis. In the anterior wall is a hole, now quite large, a quarter of an inch or more in diameter, and which is at the seat of the smaller ulceration. In the immediate vicinity of this hole the stomach-wall is thin, there is less mucous membrane, and there has existed an irritative process sufficiently prolonged to result in fibrous adhesions on the peritoneal surface. This rupture probably occurred during the examination.

The appearance presented by the stomach at once suggests that any operation would have been of very doubtful service, even had her general condition been more favorable; for the surgical treatment of this ulcer of the stomach would have demanded an incision through the wall of the stomach, that the posterior wall and upper surface might have been reached; and, even then, there was still another ulceration which might readily have been overlooked to be treated by incision and suture.

OVARIAN CYST.

DR. H. IL. A. BEACH: I have an ovarian cyst here which Dr. Fitz was kind enough to say he would show; also two tumors of the breast, removed two weeks ago. The patient was fifty-nine years old, and was sent to the hospital by Dr. Guiter, of Charlestown. For two years after the cessation of menstruation the abdomen continued to swell, until at the time of entrance to the Hospital she measured forty-eight inches at the level of the umbilicus. There had been no disturbance from the swelling but frequent micturition. The legs and feet had been swollen but that symptom had disappeared after being confined to the bed for a short time. One wave of fluctuation could be felt throughout the abdomen and on this account a number of gentlemen who examined her considered the fluid ascitic, or ascitic complicated with ovarian disease. The unquestionable resonance of one flank determined me to give her the benefit of an exploratory incision, when the large amount of fluid was found in a single cyst, completely enveloping the multilocular and more solid portions of the growth. The amount of fluid was eighteen quarts, which together with the solid growth weighed thirty-eight pounds. The pedicle was very large and thick; it had the width and thickness of the open palm of a man's hand. It was easily treated by a clamp which I have invented and have used successfully in a number of cases. As you will see, it is made with the idea of compressing the pedicle by a broad surface, so that it becomes reduced to its toughest elements by squeezing away from the compressed surface the softer elements of the pedicle, there is after that no chance for a shrinkage of the pedicle following the application of the ligature and consequently no danger of hemorrhage. The clamp is made of three separate parts joined by a pin that perforates each hinge—the jaws are closed by three separate screws—after the compression has been made, and the tumor removed, the severed end of the pedicle is thoroughly cooked with the actual cautery, the central pin is unfastened and the central section withdrawn, the pedicle is now seen compressed to one-fourth or less of its original thickness. A stout ligature is now passed by transfixing the pedicle twice and tying the knot temporarily, the outside section is then removed and the ligature thoroughly fastened, the thin section is removed and the ligature once more tightened and cut short, then dropped into the abdom-

inal cavity. The patient made a recovery in nine days.

DR. FITZ: The cyst is a multilocular cystoma, of the glandular variety, with chiefly colloid contents. The larger cavity contained watery fluid. This difference in the composition of the ovarian cystoma is not uncommon, the smallest cysts having often colloid contents, while the larger contains a thin material.

TUMOR OF THE BREAST.

DR. BEACH: The next case was a tumor of the breast, the patient aged sixty-five. The tumor was about the size of a fetal head, with no axillary glands, and I report it on account of its being an interesting specimen of breast tumor, and as another instance of union by first intention, using the quill drainage-tube. It makes the sixth case that has healed by first intention successively. This one was the largest tumor of the series; three of them were cancers, with cancerous glands in the axilla which were removed. The skin, before doing anything in the way of operation, was scrubbed daily with corrosive solution and sulpho-naphthol, 1-50. Boiled silk ligatures were used. The usual antiseptic precautions were taken at the time of the operation, and it was afterward dressed with iodoform gauze, and covered with salicylic cotton. There was nothing unusual about the operation. There were no glands in the axilla in either case. As an instance of what can be done with quill drainage, I show here the size of the quills that can be found in the shops. This one is large enough to drain an ovarian cyst. It is a fact that they do not make so much trouble in the way of after-treatment of the wound as the rubber drainage-tube. They do not delay union and the tube opening closes more rapidly than the one left after a rubber tube.

DR. FITZ: The anatomical interest of these specimens lies in the fact that they are rather an exceptional variety of tumor of the breast, and that they represent what the late Dr. J. B. S. Jackson frequently called attention to, and which is familiar to all of you, the occurrence of the same variety of rare tumors within a short period of time. The larger was removed two weeks ago, and is twice the size of the smaller. The tumor is apparently simply an enlargement of the breast, analogous to what has been repeatedly described as a chronic mammary hypertrophy. The appearance of the gland on section shows a homogenous gray and translucent appearance, with fissures, irregular, and very often Y-shaped. In the smaller of the two breasts it will be seen that the depressions are deep, with the lobules of the tumor projecting into them. This is the condition which gives evidence of the intra-canalicular growth of the tumor, so that the lobules, projecting, press upon the ducts of the glands, which become elongated, and not infrequently tortuous. The essential nature of the tumor, of course, depends upon the structure of the new-formed tissue which causes this dilatation of the gland ducts. In both cases the structure was essentially cellular, in one the cells being round and in the other rather spindle-shaped, and with comparatively little intercellular substance. They are, therefore, sarcomata presenting the intra-canalicular form of growth. The term sometimes applied to this growth is that of cysto-sarcoma.

DR. JAMES J. PUTNAM read a paper entitled PERSONAL OBSERVATIONS ON MULTIPLE NEURITIS, and gave a provisional report of a fatal case, probably

to be classed as of infectious origin, which he had seen in consultation with Dr. M. A. Morris, of Charlestown.

The histological examination was not yet fully complete, but sufficiently so to be of interest in this connection.

The patient was a healthy man in the prime of life, and the only exciting cause known was exposure during a rain-storm. The duration of the disease had been one week, death occurring from asphyxia, probably of pulmonary origin. The illness began with prickling in the hands and feet, weakness of the legs and arms, and an especially great impairment of the motion of the left arm at the shoulder. The paralysis spread steadily and became eventually almost universal, though nowhere absolute. There was moderate tenderness on deep pressure among the muscles of the legs and arms.

At the autopsy, which was performed by Dr. R. H. Fitz, the spleen was found enlarged, and the lungs studded with hemorrhagic patches. The brain, spinal cord, and medulla were removed for further examination. Portions of the anterior crural and other lumbar nerves, the vagus, and the left axillary plexus were removed, and examined later, both in osmic acid and after hardening in Muller's fluid.

Changes similar to those described below were everywhere found, but much more markedly in certain parts of the brachial nerves than anywhere else. These changes consisted (1) in excessive swelling, or, on the other hand, atrophy and destruction of axis-cylinders, with a very variable amount of change in the myelium. In some primitive nerve-bundles scarcely an axis-cylinder was to be seen; (2) in evidences here and there of cell activity, affecting both the white cells of the blood and the endothelial and connective tissue cells of the nerve itself.

No hemorrhages have as yet been found, and no large number of mastzellen such as Rosenheim found in his case.¹

The pieces of the nerves removed were, however, unfortunately not very long, and the peripheral expansion was not examined except in the case of some of the diaphragmatic filaments of the phrenic, which were not much, if at all, diseased.

Parts of the left deltoid muscle were examined, with the result that the fibres as a rule were found healthy, while here and there there was one where the transverse striation had disappeared.

In seeking for the cause of the great swelling of the axis-cylinders on longitudinal and torn preparations, it had been found that as a rule these swellings were situated close to the annular constrictions of the nerve fibres. Sometimes the swelled axis-cylinder filled the entire space within the sheath, and vacuole formation had taken place in them, besides destruction of the myelium for a considerable distance. In short, the change seemed, on a large scale, identical with that described by Ranvier as occurring in nerves exposed to the action of water and other fluids.

The idea naturally suggests itself that poisons (like nutritive fluids) enter the nerve fibres in this way, eventually destroying them, and the speaker is engaged on a series of experiments to test the behavior of nerves, in this respect, when exposed to poisonous fluids surrounding them or injected into the blood-vessels.

¹ Arch. für Psych., etc., Vol. XVIII.

DR. FOLSOM: I have been exceedingly interested in this paper. I have little to say in addition to anything that Dr. Putnam has said. I find, on looking over the third service records at the City Hospital, there are at the present time fifteen cases of general neuritis in the wards. These fifteen cases occur in a total of between 240 and 256 patients—about six per cent. That is a very large proportion, but it has been known for many years that the City Hospital had a service for diseases of the nervous system, and such cases have been gravitating there.

The first case that I have to speak of is a woman of thirty-five, with universal neuritis of the arms, trunk, abdomen and legs. The disease appeared suddenly after exposure to wet, and was attended with the usual symptoms, marked loss of power, inability to walk well, excessive tenderness over the course of the peripheral nerves, etc. Thus far I have not been able to ascertain any special cause for this particular case, and I suppose it to be idiopathic. Of this case it should be said that there is a slight amount of dulness at the apex of the left lung, slightly increased voice, and prolonged expiration. Whether it is a beginning phthisis or not, and the neuritis belongs to that class, I am unable to say. There are no rales, and the patient's general condition is bad. The sputa have not been examined for bacilli.

My impression is that there are two groups of idiopathic cases, first those that come on in a slow way, as in subacute rheumatism, and, second, those which Strümpel speaks of as beginning with chill, fever, temperature of 102–103, typhoidal appearance, and slightly enlarged spleen.

The next case is of phthisis involving both lungs, with ulceration of the vocal cords. There are the characteristic symptoms as in the first case, excessive tenderness over the course of the nerve, etc., and also such extreme pain that the patient has to be kept under opiates.

There is also a case that is interesting from the point of view of differential diagnosis between peripheral neuritis and myelitis. My impression is that in alcoholic cases the spinal cord and peripheral nerves are both affected; and, of course, possibly in cases due to other causes. When I first saw this case the diagnosis was perfectly clear. It was a transverse lumbar myelitis, but I am told that when the case entered the hospital the symptoms were by no means clear, and there was a sense of numbness, of loss of power, a great deal of pain in the legs, and excessive tenderness over the trunks of the peripheral nerves.

It is a rather unusual symptom, I suppose, in transverse myelitis, and it seems to me that the only explanation is that the neuritis was only an accidental complication of the myelitis, or possibly due to the same cause. But the neuritis has not pursued a chronic course, the symptoms referable to that having chiefly disappeared, there is very little pain left, there is scarcely any tenderness, and although there is absolute loss of sensation there is very little atrophy of the legs, not the marked atrophy that you get in peripheral neuritis, but the condition which one gets in transverse lumbar myelitis.

There are four cases which I suppose to be purely rheumatic; whether more than the sheath of the nerves is involved I do not know. Two of them were young girls who came into the hospital for so-called rheumatism. It was found that they could walk only

with the very greatest difficulty. On examination there was very little appearance to account for it. There was very slight swelling of both feet, and a very slight red blush characteristic of rheumatism, but not enough to account for so great disability. There was excessive tenderness over the posterior tibial nerves, even a moderate pressure producing severe pain. Under the proper treatment for rheumatism, salicylates and alkaline, the pain and swelling disappeared, and also the pain on pressure over the nerves. The third case which I considered to be rheumatic was similar to the other two, except that the pain has recurred once after disappearing. The fourth case which I suppose to be rheumatic is a German, who came in with the ordinary symptoms of rheumatism. He spoke only German, and did not make the fact understood that, although he had acute rheumatism, what troubled him most was a feeling in his calves, as of pulling something apart. He had intense sensitiveness to pressure upon the posterior tibial nerve, and the same with some of the others.

There was one case of acute cerebro-spinal meningitis which is interesting in connection with the symptoms which were spoken of in a paper at one of the meetings a few weeks ago. It proved to be a typical case of cerebro-spinal meningitis, although the diagnosis for a while was in doubt between that and the tubercular form. The patient had not only extreme pain in flexing the thigh and extending the leg, but some pain on any movements of the leg, and while she was in the condition of extreme stupor it was a little difficult to entirely account for it; yet as soon as the intelligence in a degree returned it was found that this was due to peripheral neuritis, which, as Dr. Putnam says, is quite common in the various acute diseases of that type, typhoid fever particularly.

There are four cases of alcoholic origin. Two of them have enlarged livers. Whether it is hypertrophic cirrhosis or not I am not sure, but like the other cases that have lasted some time the knee-jerks are entirely gone in these two, and there are the usual disabilities, which I need not repeat.

These are in women. The other two cases are in men. One of them is just beginning to walk now, and he has the characteristic gait of neuritis, which distinguishes it from locomotor ataxia.

I have seen cases which have been diagnosed as posterior spinal sclerosis, when the later history proved them to be peripheral neuritis without pain or tenderness as in this case. The patient drops his toes slightly when he walks. The fourth alcoholic case is rather interesting from the complication of a condition of extreme dementia which is sometimes confounded with the last stage of general paralysis of the insane. The history is very often obscure, and in this particular case there was no tenderness over the course of the nerves, unless the patient was moved, and he was too stupid to indicate whether he had any numbness or not. He came into the hospital in a state which reminds one of the terminal dementia which we see in the insane asylums, with quite marked emaciation of the legs, and, of course, inability to stand or walk. As I say, there was no pain at all in the legs, but the most exquisite pain on even slight pressure over the course of the nerves. These cases, although their mental state somewhat resembles the condition of terminal dementia from organic disease, are very easily differentiated from them by the mere

expression of the face. One sees, in comparing them with a case of dementia from organic disease, that the muscles of expression have not absolutely lost their power, and that there is not that entirely vacant and staring expression which is shown so well in the composite photograph by Dr. Noyes which I showed to the Society some time ago.

The case of post-diphtheritic paralysis is interesting. This patient came into the hospital three days ago — a very marked case of the kind. There was an absolute loss of power in the hands and legs. He talks a little above a whisper, uses his hands incompletely, and walks very badly indeed. He has the characteristic numbness in the extremities, and all the other symptoms of the disease except pain. He has absolutely no pain whatever. The interesting feature in regard to the case, from the point of view of diagnosis, is that the sensory symptoms and the motor symptoms of the two legs are precisely alike except in one point, and that is in the left leg, the other symptoms being precisely like those in the right. There is very great tenderness on pressure over the nerve trunks. In the right leg, with the other symptoms identical, there is no tenderness whatever, illustrating the fact which Dr. Putnam speaks of, that cases do occur not only without pain, but also without undue sensitiveness on pressure over the nerve trunks.

Another case is rather an interesting one from the fact of the neuritis being unilateral, and associated with organic disease of the brain. This is a gentleman who has organic disease of the brain, the nature of which cannot be as yet determined, in the region of the fissure of Rolando on the right side, and marked loss of power in the left arm and left leg, not, however, amounting to absolute paralysis. He has complained of very severe pain in these limbs for several days, and it is found that there is a marked neuritis there. That is to say, pressure on any one of the nerve trunks causes very severe pain, the right side being entirely free. In these cases differing from the others, the knee-jerk is very much exaggerated, and that of course is due to descending degeneration of the motor tract.

There is another case which is somewhat like the one I have just reported, in the fact that I have not been able to discover anything throwing any light on the etiology. Very often, cases of peripheral neuritis in the Hospital are of syphilitic origin, but, unless this case of which I am about to speak is of syphilitic origin, I do not know to what cause to refer it. The patient is very much emaciated, the pain is very great, and the tenderness on pressure is extreme. He is able to walk, but with very great difficulty, and his gait simulates a little more the gait of posterior spinal sclerosis than ordinarily in cases of multiple neuritis. The power of the extensors is not entirely gone, and I find, on questioning him carefully, that he holds up his toes by very great effort, because the least motion causes such extreme pain. I have never seen a case precisely like this before in the very widespread distribution of the tenderness on pressure, which is universal in the legs. It is almost impossible to find a place where there is not some tenderness, but over the main trunk the sensitiveness is so much greater than elsewhere that I think there can be no doubt in regard to the character of the disease being neuritis. He is now taking a drachm and a half of the iodide of potassium a day, and will soon take double that amount,

and is improving. He denies any venereal antecedents.

I thought these cases might be of interest, although there are not represented all the various forms which occur, due to various causes, they show to what a variety of causes peripheral neuritis may be due, and the difficulty, in a great many cases, of establishing the etiology on a satisfactory basis. Dr. Putnam spoke of one case previously seen by me, in which the trouble was confined to the upper arms and shoulders, that he saw a number of years ago. I have since seen two cases precisely like that. The case that he referred to was a carpenter, who, in a cold November rain-storm, worked pretty much all the forenoon assisting in putting out a fire, getting thoroughly wet there, and remaining all the evening with his wet clothes on his shoulders, having changed all his other clothing. The second case was a man who got drunk and lay several hours with his shoulders exposed, and the third was somewhat similar. The subsequent history proved to be like that of the first. It seems to me that these cases show that the fact stated in the textbooks, that the anterior poliomyelitis of adults differs from the anterior poliomyelitis in children in that the prognosis is much more favorable, is not true, and that it is probable that errors in diagnosis had been made, and that the cases were really cases of multiple neuritis, and got well, although supposed to be anterior poliomyelitis.

DR. S. G. WEBBER said: I have been very much interested by what Dr. Putnam has said, and the cases that Dr. Folsom has reported. I think we are gradually coming to recognize what an extensive disease neuritis is, how it comes in as a complication and as a distinct disease in so many cases which have previously been ascribed to other causes. It is so late, I will not multiply the number of cases reported. I will only say a few words in regard to the pathology in a case that I had at the City Hospital, where almost all the nerves were affected, and which I reported in 1884. I examined the nerves, preparing them with osmic acid. I think that for the examination of nerves this is especially valuable, inasmuch as the myeline is colored black, and each minute drop of myeline receives its color, so that the changes are made very evident and very clear. There were two classes of change which I found; I mean in the first stages of the change. As Dr. Putnam has drawn the constriction of Ranvier, one was near that, the primary change; the myeline beginning to divide into segments near this constriction, the first appearance of change being a separation into globules and a separation of the myeline away from the constriction, and the pushing of it away in much the manner as Dr. Putnam has intimated.

The other form was where the change had occurred around the nucleus in the centre of the cell. The first change in the myeline occurs near the nucleus, not at the constriction, the myeline being comparatively complete at the constriction of Ranvier, dividing up into an appearance as though it was becoming segmented near the nucleus. The disadvantage that I found in using osmic acid in preparations was that afterward the carmine did not discolor very clearly the axis-cylinder or the nucleus. The coloration was very faint, although they did take the carmine to a slight degree. The segmentation of the myeline goes on until the whole of this node is divided into small

segments of larger and smaller size, and then it is absorbed, and we have, finally, simply a few drops of myeline scattered about in the sheath of the nerve, the axis-cylinder being lost and the sheath being also reduced in size. That is the extreme limit.

Soon after having seen these cases, I was interested in this matter of neuritis, and tried some experiments at the Medical School on rabbits and guinea-pigs, producing neuritis artificially. I had laid out an extensive plan of experiments, which I did not have time to carry out. I think that nearly every case of artificial neuritis, where the inflammation was evidently active, I found a change near the constriction of Ranvier, not in the centre of the cell of the nerve-fibre. It did not seem to be due altogether to the preparation of the nerve in osmic acid; it was more like what I have found in the beginning segmentation in myelitis. Possibly a few occurred, as in the second variety mentioned before, near the nucleus of the nerve-cell. At a distance from the point where I applied the irritation the nerves were very much degenerated. If the animal lived long enough and I got secondary changes, such as you get when the nerve is cut, these are secondary changes, the nerve-fibre being reduced, as in the case of disease, to a sheath filled with small particles of myeline.

DR. BULLARD: I would like to ask Dr. Putnam whether he has known of any case in which the auditory nerve is affected. I had a case in the Hospital a month or two ago, in which the man came in with very severe neuritis, with alcoholic and syphilitic history. The man was very low; he was in the Hospital for about six weeks. About two weeks before his death he was suddenly attacked with deafness, almost total, in both ears, and the ears were examined by Dr. Spear, who said that nothing could be found to account for the deafness. I am sorry to say that I believe they were not examined with the tuning-fork, and it seemed probable at the time that it might have been due to an affection of the nerves. I would like to ask that question.

DR. PUTNAM: I have never heard of such a thing, and I think it is an interesting suggestion.

DR. MORTON PRINCE: The hour is so late, Mr. President, that I will not take up the time with any extended remarks. I only wish to call attention to what may prove to be a very interesting fact. Though what I am going to speak of may be mere coincidence, it may throw some light on the etiology of multiple neuritis. I remember that in 1884, when Dr. Webber reported his cases, there was an unusually large number in the Hospital. Now it so happened that at the same time there was an epidemic, among the horses of this city, of a disease characterized by paralysis. I had a horse at the time affected, and was able to observe the disease. Now it happens again, this year, that there is a large number of cases of neuritis in the Hospital, and, again, there is a disease prevalent amongst the horses characterized by paralysis, and similar, so far as I have been able to observe, to the epidemic of 1884. The disease has each time been diagnosed by the veterinary surgeons as meningitis, but I have been unable to understand the grounds on which the diagnosis has been based. It seems to me, all things considered, that the disease is more likely a multiple neuritis, but it will require a *post-mortem* to establish the fact. If it should turn out to be so, considerable light may be thrown on the

etiology of multiple neuritis. I think Dr. Webber suggested to me, in 1884, that it might be this disease.

DR. P. C. KNAPP: I have not very much to say in regard to Dr. Putnam's very interesting paper. I was interested especially in the case that he reported of the woman who had the oculo-motor paralysis, because I was reading only a few days ago about a case, which seemed to be fairly well authenticated, of a neuritis which affected the different cranial nerves, one after the other, beginning with the third and fourth, I think, then having an optic neuritis, and then neuritis of the seventh, with typical facial paralysis. In my own experience with these cases of multiple neuritis I have not found the exaggeration of the knee-jerk, unless, as in the case which Dr. Folsom spoke of, which I saw with him this morning, there is also some other cause which might well explain the exaggeration. Of course, where the nerve going to the quadriceps extensor is not affected, there is no particular reason why the knee-jerk should be affected; but in the ordinary cases, where these nerves are involved, it seems to me that, unless there is some other fact that comes into play, the knee-jerk is either diminished or absent.

In regard to Dr. Prince's suggestion about the affection in horses, it seems to me hardly fair to consider the great prevalence of multiple neuritis now as an indication of its infectious origin, from the fact that there are so many causes, some alcoholic, some rheumatic, and others due to other infectious diseases or mineral poisons. It does not seem to me that, with so many different forms of neuritis, their frequency can fairly be attributed to one infectious cause.

Recent Literature.

A Text-Book on Surgery, General, Operative, and Mechanical. By JOHN A. WYETH, M.D., Professor of Surgery in the New York Polyclinic, Surgeon to Mount Sinai Hospital, etc. New York: D. Appleton & Co. 1887.

This text-book, comprising some seven hundred and twenty-five pages, profusely illustrated, is intended to present surgery as it exists to-day. In dealing with such a broad subject, the author has been obliged in many instances to omit what might well be deemed important subjects. For instance, neither pyæmia nor septicæmia are treated of in the volume; this, we suppose, is in part due to the practical obliteration of these affections by antisepticism, and then, again, by the imperative condensation, which has been admirably accomplished, in a work of this magnitude. This condensation has necessitated positive assertions on the part of the author, which would have otherwise been tempered by the experience of others. In a few instances we feel that the author's statements should be modified; for instance, ether is certainly not to-day recognized as the anæsthetic, to the practical exclusion of chloroform, for there still exists a large part of the profession who fail to recognize ether's superior advantages. The plates, many of which are colored, are worthy of especial mention. Dr. Wyeth has admirably succeeded in producing a hand-book for students and practitioners.

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SERVIA'S SANITARY SYSTEM.

IN these times of effort toward a thorough, a rational supervision and control of matters affecting the public health, physicians and others may be interested to know the *schema*, in *re*, formulated by a very young member of the comity of nations.

An experienced economic observer and philosopher (De Laveleye) reports that, in Servia, the "general sanitary council" of seven doctors is a scientific consulting body for the State: its duty is to study and regulate measures adopted by the "sanitary department," whose functions are executive. The "sanitary department" is under the authority of a surgeon-general, with an inspector-in-chief, secretary, two chemists, and a veterinary: its sphere comprises everything relating to health, including even the food of the people: obligatory rules in regard to the diet of working-men are numerous and minute.

The national administrative *cadre* is paralleled by the medical. The *préfet*, or departmental governor, has the aid of a doctor. correspondent in grade, and nearly as well paid: the heads of districts and communes have, likewise, medical advisers, receiving the same salaries. Midwives and veterinaries are subordinated to this "department." In each town of importance the physician has a right to form part of the municipal council or board of aldermen.

The country is, therefore, as to hygiene, in the hands of medical men — a national board of health, with proper sub-officials — empowered to inspect and dispose all things concerning the physical well-being of mankind and of domestic animals.

We instance a few details by way of illustration: Every child must be vaccinated between the third and twelfth month; again when leaving the primary school; and once more when twenty-one years of age. This operation, free and compulsory, is performed from May 1st to September 30th, under superintendence of the *préfet* and departmental surgeon, in presence of the mayor. The proper medical officer must

inspect inhabited houses, and remove causes of illness arising from poor food and water, defective drainage, and from customs relating to births, burials, etc. Buildings where there are contagious diseases have descriptive labels affixed. (A similar rule is followed in Holland.)

In the care of public health, the government has not feared to make regulations forbidding a secular usage closely resembling a religious rite. Certain church followers had the habit of carrying their dead to the cemetery in an open coffin, the face and body covered with flowers: under the new *régime* a closed funeral case is requisite. The question of cremation—a safer mode for the oxidation of organic substance that must decay and may spread disease—appears less urgent for consideration there than in our own territory. Strict and detailed directions exist to stop the progress of infectious maladies, both on the frontier and throughout the kingdom.

Some of the so-called civilized nations have done much to improve the qualities of race in domestic animals—the lower animals, as sometimes called; whereas the procreation of nature's highest kind of life, whereon intellect has been grafted (or wherein it is developed), is left, for the most part, to unreasoning impulse—with results that every informed and thoughtful mind can but deplore. In this newly-formed European commonwealth, however, the function of the departmental doctor is to trace how marriages are made, if they produce hereditary affections, what is the average number of children to each union, and whether there are limiting causes. Under penalty of disciplinary punishment, the medical officer is to obtain from the *préfet* measures to abolish, in workshops and private houses, "everything that may injure health."

It is a subject for serious thought whether it be wise to place citizens under the tutelage implied by such an extensive officialism. Nevertheless, so complete a system, earnestly applied, would without doubt save from much pain and sorrow not only the average man, but also those who, in a sanitary and physiological point of view, ought never to have been born.

THE ASSOCIATION OF GENITO-URINARY SURGEONS.

THE union of several gentlemen from various parts of the country in an association devoted to the study of genito-urinary diseases seems to awaken the mirth of various medical periodicals, and lately the *London Lancet* has taken occasion to read the whole profession a little lecture because of the existence of this society. Doubtless it may seem to many at first thought, that this particular society is superfluous, and its field limited. A few sentences from the *Lancet* will show the animus of its remarks.

"The expression 'genito-urinary surgeons,' which does not seem to us a happy one, indicates the dispo-

sition to erect a new specialty which we trust will be reconsidered. . . . It is not a wholesome sign, this tendency for a group of men to fly off from the great body of their brethren and put a special label on themselves. Where is it to stop? Is syphiloma of the vulva to be regarded as something apart and special; or can it be separated without harm to the general conception of the case in which it occurs?"

In a succeeding number the *Lancet* again refers to the subject:

"Last week we directed the attention of our readers to an illustration of the portentous development of specialism in the title of an association soon to meet in Washington under the name of Genito-Urinary Surgeons. This group of gentlemen, including, we notice, some of the most honored names in the history of American medicine, have it is true, as we showed, with a delightful innocence, appropriated a somewhat large field for their special preserve, including diseases as widely apart as syphiloma of the vulva and interstitial nephritis. If the system of specialization is to go on unchecked, there will not be many more September Congresses at Washington before the Association of Genito-Urinary Surgeons will be broken into a hundred fragments, and we shall have yet more undignified uses of specialism," and it predicts the formation of other associations with "still more unsavory" names.

Now this JOURNAL is not inclined to differ from the *Lancet* in its apprehension of increasing specialties, and it is in no sense authorized to speak for the Society of Genito-Urinary Surgeons; but the views of the English journal seem superficial and one-sided, and deserve a word, perhaps not of justification, but of explanation, in behalf of the Society.

There are scattered through the different cities of the world a few medical men whose practice lies in great measure in diseases of the urinary organs, of whom Sir Henry Thompson may be regarded as a shining example; and in the United States such men exist in fair proportion, and they have earned the *Lancet's* contempt by associating themselves together for the study of the diseases in which they are specially interested.

Genito-urinary surgery has become a separate branch of instruction in many medical schools, because, to make instruction thorough, it is necessary to subdivide general surgery.

This Association includes many men who give instruction in genito-urinary diseases in these various medical schools: some of these gentlemen are also particularly interested in syphilis: some are well known as dermatologists; some would be willing to be called specialists; some would resent the name. Some of them might be said to be specially interested in diseases peculiar to the male sex; some of them are general surgeons; others still do a general practice. Their association is not for the purpose of establishing themselves as specialists, but for mutual study and information; or, in the words of their Constitution, "to promote the study of genito-urinary and venereal

diseases," it being expressly stated at the first meeting of the organization that the study of syphilis shall be included in its work.

Now, notwithstanding the sneers of the *Lancet*, that seems to many honorable men a perfectly legitimate field of study. Mutual acquaintance and discussion will not make these gentlemen less efficient as instructors, or less valuable to the community.

The name is a little misleading in that it fails to show the full scope of the Society. The *Lancet* appears to be imbued with the idea that because a syphiloma of the vulva is to be reported at its coming meeting, the Society is so constituted as to consider syphilis as appearing on the genital organs, and not elsewhere.

The *Lancet* can hardly have spoken with its best thought when it intimates that the name is "unsavory." The titled individual who refused to know Sir Astley Cooper because he would examine his rectum for a guinea might have despised men who would adapt the principles of optics to an inspection of the urinary reservoir, but it is a surprise to find such language in a journal which is devoted to the interests of the medical profession. The *Lancet* must occasionally blush as it reads its own pages. Progress is made by men who study comparatively small fields. Men who devote themselves to comparatively narrow limits, and so systematize and condense the knowledge of that field that it can be readily appropriated by others, help the advance of general medicine.

A MATTER OF DIAGNOSIS.

A SUIT of great interest to medical men has been brought in the courts of Rhode Island by a Mr. Larkin, proprietor of one of the hotels at Watch Hill, R. I., against Dr. Samuel O. Vanderpoel, of New York, for alleged damage to the plaintiff's business by reason of a diagnosis of scarlet fever made by the defendant in a case of a child staying at his hotel. Dr. Vanderpoel was called to see the child, diagnosed a mild case of scarlet fever, and advised that the child be removed to a cottage belonging to the proprietor, so as to be isolated from the guests. This recommendation was not complied with, and the child's nurse continued to go to the servants' dining-room. The diagnosis becoming known, a general exodus of guests took place, and the house, which contained a great many families with children, was soon nearly deserted. The damage in the suit is laid at \$12,000, though it is difficult to see on what grounds the case is to be urged. Dr. Vanderpoel's diagnosis, it is said, was confirmed by two other physicians, though it was disputed by one practitioner who saw the case in the interest of the landlord. The manner in which the notice was served upon the defendant was particularly aggravating, the sheriff declining, it is said, the bail that was offered, and expressing his intention to lock up the doctor. The exceedingly delicate position in which

a physician is placed who is called to a case of infectious disease in a summer hotel is well illustrated in this case, but if a man is to be subject to a suit every time he makes such a diagnosis, it is time the profession knew it and protected itself. It is reported that Dr. Vanderpoel will bring a counter-suit against the hotel man for damages.

MEDICAL NOTES.

— Yellow fever has increased in Jacksonville, Florida, to a marked degree during the past week, the average of new cases daily being 50 or 60. The total up to 6 P. M., September 9th, was 604, deaths 73. Among those prostrated by the fever is Hon. H. A. Leugle, chairman of the committee on sanitation of the citizens' association, who has worked indefatigably since the outbreak of the fever. There remained in the city September 7th, 13,757 people — 3,945 whites and 9,812 blacks. Of these 10,375, mostly colored, are unwilling to leave, and 3,495 are without means. It is expected that 2,000 or 3,000 will leave in ten or twelve days. The complete depopulation of the city is impossible, and those without means can hardly be provided for in the refugee camps under a month or six weeks, during which time, it is feared, the epidemic will have done its work and hundreds of lives been sacrificed. The negroes are loth to leave, being told by politicians that they will lose their votes by a change of residence.

Ten cases of yellow fever are reported at McCleenny in Baker Co., Fla., and one death from black vomit. Pensacola and Marianna have quarantined against the whole of Baker County. Montgomery, Ala., will follow their example.

Surgeon-General Hamilton, of Washington, at the suggestion of the President, has taken charge at Camp Perry in person, relieving Dr. Guiteras.

The officials of Jacksonville have made an urgent appeal for aid, which has been promptly responded to by some of the northern cities.

The Adams and Southern express companies have offered to transfer free of charge all supplies, money, contributions and flowers sent to the city for the benefit of yellow fever sufferers. Supplies should be addressed to Judge Loton M. Jones, chairman relief committee, and money to J. M. Shumacher, chairman finance committee. Quite a number of "Red Cross" nurses have arrived from New Orleans. No unacclimated person will hereafter be allowed to go into the city.

Despite the fact that there has been some suffering for lack of proper nursing, northern nurses are not specially desired, because they have not had the experience with the disease which is so desirable. It is said that there are plenty of capable, well-trained yellow fever nurses in Savannah, Charleston, Mobile, New Orleans, Galveston and other southern cities who are willing and anxious to do duty at the bedsides of the unfortunate people of Jacksonville.

— Hamons's disinfecting lotion for utero-vaginal injections is given by the *Monde Pharmaceutique* of June 5, "as it possesses characteristics of excellence which make it desirable as a summer toilet article: "A. c. salicyl and ac. thymic aa gm. 2; ol. ambragrisea, gtt. 20; ess. vanilla, gtt. 30; alcohol at 90° gm. 25; cologne water, gm. 50; aq. dest., gm. 300. It may be used from one to four times in 24 hours. — *Pharmaceutical Record*.

— A contemporary credits the following to W. S. Gilbert: A friend was bewailing in his company that his wife had just presented him with triplets, all girls. "What am I to do with them?" asked the poor man, "I don't even know what to name them." "Oh," said Mr. Gilbert, "call the first Kate, the second Duplicate, and the third TriPLICATE."

— A story comes from England which is not without its pathetic suggestion, especially to the medical man who has seen in elderly people the fear of mental decay and the suspiciousness with which they sometimes look for it in their contemporaries. The story was told by the late English portrait painter, Mr. Frank Holl, who, while painting the portrait of Mr. John Bright incidentally mentioned that he was about to perform the same operation for Mr. Gladstone. "It must be a very painful thing for you, Mr. Bright," he hazarded, "that after all these years you should have found cause to sever your connection?" "Indeed it is," responded Mr. Bright, with a sigh; "to think that, after we have trodden the same path together, shoulder to shoulder and hand in hand, we should be forced apart in the evening of our lives! And by what? By a bogey that has risen up within him and is beckoning him away from duty and sense — by a Frankenstein. Do you know, Mr. Holl, I seriously fear that my dear old friend's mind has really become radically undermined?" When he was at Hawarden painting Mr. Gladstone, the subject of the artist's portrait of Mr. Bright cropped up. "Ah!" said Mr. Gladstone with much interest, "and how did you find him?" "Fairly well, and he spoke very affectionately of you, Mr. Gladstone." "Did he, indeed?" replied the sinner, sorrowfully; "did he, indeed? That was a cruel blow. That after a lifetime of mutual esteem and of good work undertaken and carried through together, we should be divided on so clear a question. Tell me, Mr. Holl," — and here his mouth twitched, for he was evidently struggling with great emotion — "tell me, did you notice anything in the manner of my old friend which would lead you to believe that his reason was becoming in any way unbalanced?"

NEW YORK.

— A large number of citizens and tax-payers of Jersey City were present September 6th at a meeting called by the Board of Works for the purpose of discussing the water-supply of the city. Mr. M. P. Merciles, representing the Fourth District Citizen's Association, urged the necessity of a new water-supply on the grounds that the present supply was both inadequate and impure, and contended that the city should

keep the control of the supply. Drs. B. A. Watson and A. A. Lutkins also spoke in favor of a new source of supply. On the other hand a paper was produced in which sixty physicians of the city had certified that in all their practice, running back as far as forty years in the case of some of them, they had never been able to trace a case of illness to the city's water. The meeting finally adopted a resolution declaring that Jersey City should own and control its own water-supply, that it is against public policy to enter into any contract with any private corporation for a supply of water, and that a new supply is unnecessary.

— A death recently occurred in New York from chlorate of potassium. The victim was a laborer who worked in Central Park. Suffering from rheumatic pains, he sent his daughter to a druggists on First Avenue to procure some iodide of potassium for their relief. She either asked for "chlorate of potash" or the clerk so understood her, as he gave her the latter drug, and labelled the package to that effect. Without apparently examining the label, her father took half an ounce of the drug that evening, and the next morning another half ounce; and a few hours after the second dose he began to suffer from violent pains, which continued until death resulted.

— Dr. Benjamin Fradenburg, one of the oldest physicians in New York State, died at Palatin Bridge, at the age of ninety-one. He had practiced at Coeymans for over sixty years, and was well known all along the Hudson River.

Miscellaneous.

SULPHONAL.

THIS new hypnotic was discovered in its chemical relations by Bauman, and its action as a hypnotic by Professor Kast.

It is in colorless, tubular crystals, without odor or taste, melting at 130° to 131° C., and boiling at 300° C., beyond which temperature it decomposes. Medically, it has been found efficient as a hypnotic, giving quiet sleep, varying from five to eight hours, without producing any abnormal depression. The dose is about thirty grains, suspended in water, or given in wafer or capsule.

THE PHYSICS OF THE MALE URETHRA.

MR. W. W. WAGSTAFFE, in a paper in the St. Thomas Hospital reports, vol. xvi, noticed in the *London Medical Recorder*, July 20th, points out as the result of his observations that the urethra is rifled somewhat after the manner of a gun-barrel, but the spiral of the urethral tube which runs from right to left in about the upper three-fourths of its length usually becomes reversed near its distal extremity. The object of the spiral grooving in the case of the gun is to secure for the projectile a rotary motion and greater precision in direction of aim, and we may fairly assume that similar advantages of a physiological nature are gained for the outflow of the urine and semen by the arrangement of the urethral column. It is some-

times stated, he notes, that a twisted stream is one of the early signs of stricture, but this is misleading, since the normal outflow is always perceptibly spiral. This phenomenon is perhaps not altogether due to the urethral rifling, since it has been found that water forced out of a narrow, smooth-edged slit does not continue in a straight "tape" jet, but is shot out as a spiral.

TETANUS TRANSMITTED BY INOCULATION.

THE Austrian correspondent of the *British Medical Journal* says that at a recent meeting of the Imperial Royal Society of Physicians, of Vienna, Dr. v. Eiselsberg gave an account of a case of tetanus, which had been in the clinic of Professor Billroth. A woman aged forty, drove a splinter of wood into the palm of her hand whilst scrubbing the floor. A fragment of the splinter was extracted by her husband. During the course of the next week, an abscess formed in the hand; this was opened by the attending physician. On the twelfth day after the injury, the woman was admitted into Professor Billroth's clinic with the typical symptoms of severe tetanus, which lasted four weeks. She afterwards recovered to a great extent, and was discharged at her own request. At that time she still presented slight contractions of the affected limb. Two months later, a suppurating fistula was formed, and a small splinter of wood came away in the discharge. The wound then completely healed, and the patient made a perfect recovery. Dr. v. Eiselsberg used the extracted piece of wood for preparing cultures. Two rabbits were inoculated with the culture thus obtained, one of which succumbed to tetanus on the sixth day after inoculation, while the second one, which was inoculated at a later date, showed marked symptoms of tetanus, such as increased irritability, trismus, pleuro-thotonus, etc. Dr. v. Eiselsberg showed this rabbit to the Society, and foretold that it would also die in a few days. The lecturer formally called attention to the fact the pathogenic bacillus of this disease was also to be found in the garden mould and the gravel. He will next report on a number of other experiments on the etiology of tetanus.

GROUPED CELLS IN ASCITIC FLUID AS DIAGNOSTIC OF MALIGNANT DISEASE OF THE PERITONÆUM.

DR. H. C. COE demonstrated at a recent session of the New York Clinical Society, as reported in the *New York Medical Journal*, the presence of the sprouting cell-groups of Foulis in a drop of ascitic fluid withdrawn the day previous from the abdomen of a patient with undoubted secondary cancer of the peritonæum, who had been under observation for some time at the Cancer Hospital. His attention had been directed to these cells by Dr. Welch seven years before, and since then he had sought for them in every specimen of ascitic fluid submitted to him. Although he had found them but once in cases of cancer of the liver, even where the omentum had been affected, he could recall several cases in which the presence of numerous cell-groups had led him to diagnosticate malignant disease of the ovaries and peritonæum, and in which diagnosis had been fully confirmed by a subsequent exploratory incision or autopsy. He thought that every pathologist who had given this question care-

ful consideration must disagree with Tait, who, in the last edition of his work on "Diseases of the Ovaries," had said that he placed no reliance on the presence or absence of these cells in fluid removed by tapping. At the same time that author was correct in affirming that these elements were not always found. The speaker believed that, when they were found in the free fluid they denoted the presence of an exuberant malignant growth, either carcinoma or sarcoma; they might also indicate the outgrowth of papillomatous material through the wall of an ovarian cyst, with extension of the disease to the peritonæum. He had always deprecated a resort to exploratory incision in cases in which advanced malignant disease was strongly suspected, since, so far as his own observation extended, little additional information was gained, and the patient frequently either succumbed to the shock of the operation, or, if she recovered from it, grew rapidly worse. He thought that a careful examination of the fluid withdrawn with an aspirating needle would often render the diagnosis so clear that the patient would be spared such operative interference.

CAN THE FŒTUS IN UTERO BE INFECTED BY THE MOTHER?

THE special Berlin correspondence of the *British Medical Journal* for July 14th contains an abstract of a paper by Prof. Max Wolff in Virchow's *Archiv* on the much-debated question whether micro-parasites can possibly pass out of the maternal into the foetal blood through the placenta. He began his experiments with the anthrax bacillus and vaccine matter in pregnant animals. Wolff rejects mere clinical observations in such matters as uncertain, and liable to all kinds of fallacies. Only experiments in which one is able to infect the animal, either before or after conception has taken place, are of any value; by killing the mothers, one is able to interrupt the process at any time and to examine the fœtus *in utero*, so that there can be no doubt about an exact bacteriological proof of inheritance. According to former opinions (Bruell, 1858; Davaine, 1867; Bollinger and Koch, 1875), the anthrax bacilli are never transmitted from the mother to the fœtus. But, according to more recent work done in Pasteur's laboratory (Koubassoff, Straus, Chamberland), micro-organisms may very easily pass through the placenta into the fœtus. Wolff has worked out this question experimentally with the most minute and laborious precautions, using in every case the three branches of the bacteriological method; namely, microscopic examination of organs, cultivation of bacteria, and inoculation. The result of the first method was entirely negative in 29 animals. Of 156 cultures, 150 remained sterile, while six gave a positive result. Of 29 animals inoculated, 26 remained well. Where anthrax was found in the fœtus, two of these methods always gave results, and only one in favor of infection of the fœtus by the maternal blood. For this reason, Wolff concludes that the separating wall of the placenta is not pervious by the anthrax bacillus, and attributes to defects in the technical process the few cases which occur to prove the contrary. Of course, he does not deny that it is possible for bacilli to migrate through the placenta into the fœtus, but only under pathological conditions, in cases of hemorrhage in the placenta, foetal inflammations, convulsions, etc. Wolff also

maintains that the vaccine contagium cannot pass through the placenta. Of twenty pregnant women, twelve were vaccinated with success, and their seventeen children were vaccinated on the first to the sixth day after birth. In every case well-defined pustules appeared, showing that the children were not in a state of immunity. It is now fully ascertained that the children, while yet in their mother's womb, may contract genuine variola if their mother suffers from small-pox during pregnancy. Wolff, in admitting this fact, points out its rare occurrence, and explains it by the tendency to hæmorrhage so frequent in patients suffering from small-pox; in such pathological conditions, as has been said above, the blood may pass from the mother to the fœtus through the placenta.

A CASE OF PERFORATING WOUND OF THE ABDOMEN INFLICTED BY AN OX'S HORN.

The *London Medical Recorder*, July 20, contains the report of a remarkable case of abdominal injury reported by Dr. Nikolai S. Gratch in a Russian medical journal (*Med. Obozr.*, No. 2, 1888).

The case was of a weak and emaciated peasant woman, aged fifty-five, who, when waiting on a village road for a herd returning home, was suddenly attacked by an ox, which threw her up in the air, caught her on one of his horns, and then tossed her about on the road for several moments before aid could arrive. The woman got up by herself, and was even able to walk home, "feeling all the way that something warm and moist was dangling between her thighs," but, on reaching her staircase, she became so faint that it was found necessary to carry her up and to send at once for a clergyman and for the writer. When seen by the latter, seven hours later, the woman lay on a dirty palliase on the dirty floor of her hut. She was in a state of collapse, had a weak, uncountable pulse, pinched face, and scarcely audible voice, and complained of epigastric pain. Her chemise having been divided with scissors, a "large mass of distended, partially quite dry, intestinal loops presented itself, covered with another soiled and blood-spotted chemise." The prolapsed mass being pushed aside, an extensive triangular flap consisting of the abdominal integuments alone was found, with its apex about two centimètres from the pubes, while its sides ascended from this point obliquely across the inguinal regions to terminate somewhere on the line dividing them from the corresponding infra-umbilical lines. The abdominal wall was perforated through all its thickness, only about the left angle of the triangle. There were, besides, some superficial bruises about the thighs. Having administered twenty-five drops of simple tincture of opium (*Ph. Russ.*) in two doses, Dr. Gratch washed out the protruded mass (which seemingly included a portion of colon) with a tepid solution of corrosive sublimate (1 to 5,000), then carefully examined the parts in regard to their integrity, and returned them, without any special trouble, into the abdominal cavity, closing the perforation with several superficial and deep sutures, and applying an iodoform dressing. The after-treatment consisted only in the internal use of the opium tincture (five drops four times a day), cold milk diet, and strict rest in a supine position. Recovery proceeded so satisfactorily that on the fourth day she could be safely removed to the town hospital. The

temperature never rose above 38° C., and became normal on the seventh day, about which time also regular action of the bowels was established. On the eleventh day all sutures were removed. When seen about six weeks after the accident the patient was quite well, but was obliged to wear a supporting abdominal bandage since, otherwise "she felt some peculiar weight in the hypogastric region when walking." Dr. Gratch is not very sure whether his patient's recovery from her severe injuries could be attributed solely to the antiseptic precautions adopted, since the woman's surroundings up to her removal to the infirmary were quite the reverse of hygienic, and all his cleansing and disinfecting manipulations could only be carried out on a dirty floor and in semi-darkness, contributed by a dwarf petrolum lamp and a tallow candle. In common with other Russian country practitioners, Dr. Gratch thinks, generally, that "rustic dirt is not so dangerous as the doubtful cleanliness of infirmaries," and that hence "bad hygienic conditions of villages must not be regarded by the surgeon as an obstacle to surgical operations."

A VISIT TO THE CLINIQUE OF DR. APOSTOLI, OF PARIS.

We make the following extract from a Paris letter from W. Macfie Campbell, M.D., to the *Medical Press*, describing the technique of Dr. Apostoli in the electrical treatment of fibroids.

We will now suppose that an old case of fibroid is on the table. The case-book shows that she has had the galvanic puncture five or six times, and under treatment perhaps six months. The menorrhagia is quite under control, she is still blanched-looking, but bright, and says she is now able, and has been since the first month for her usual work as charwoman. Only the galvano caustic is to be used to-day. She is placed on her back with the thighs separated, the surgeon himself irrigates the vagina with 1-1000 sublimate solution, passes the sound, which has been burnt over a spirit lamp, then dipped into the sublimate solution, and anointed with carbolic vaseline. The clay electrode is placed over the abdomen, any abrasion of skin being covered with a piece of moistened paper, and the connection made. The current (probably negative) is generally increased to 20, 30, 70, 150, or even 200 milliampères, according to the former toleration of the patient and her present capability of bearing increase. The current is continued for five to eight minutes, and is sometimes accompanied by hæmorrhage, then the vagina is again irrigated, and a tampon of iodoform lint is inserted through a speculum (this for two reasons — as an antiseptic dressing, and as a preventive for coition), and the patient is sent to her seat for an hour or two. They walk or drive home, sometimes long distances, and are able for their work next day.

With our next case puncture is to be employed — the same irrigation is carried out — and Dr. Apostoli (after washing his hands carefully in the mercurial solution) makes a bimanual examination, and determines the place of his puncture, choosing the cul-de-sac or the posterior lateral aspect of the tumor, fixing his finger on the chosen spot (which must not be near any pulsating area) he passes the loose canula along his finger to the place, then having determined the depth

of his puncture by the trocar's movable handle, he presses it on, making a puncture of one-third to three-quarters of an inch in depth. A shorter period and fewer milliamperes are employed, and the pain is evidently greater. In his private practice chloroform is sometimes needed. The case is then irrigated and dressed as before, and told to appear in two days. Thereafter, until the slough separates, a matter of eight days, she is instructed to use hot water sublimate irrigation (1-2000 to 1-3000) four or six times daily. This case may require one puncture a month for several months with the galvanic caustic between, but the patient, with two days' rest after the puncture, is able for all her work, and seems more than content to go on with her treatment.

For chronic endometritis and active hæmorrhage the positive pole is used, and the electrode carried to all parts of the cavity, so as to act upon the entire uterine mucous membrane.

For acute endometritis, peri- and parametritis, a long previous course of irrigation with hot water is enjoined, and no operative interference is attempted until pain to the touch is gone, or the sound can be passed almost painlessly.

For acute para- and perimetritis nothing is done while pain and tenderness remain, but when the painless or chronic stage is reached, the puncture is made into the most accessible part of the hyperplastic exudation, and the treatment carried out as before. A

case like this may need ten punctures, and the galvanic simple has but little effect upon it.

Dr. Apostoli's apparatus consists of a Leclanché or bisulphate of mercury battery of thirty-six cells of a rheophore of clay for the abdomen, of sounds of platinum for the galvano caustic, of trocars of steel for the puncture, with their cannulas, and of the bi-polar insulated sound for use with the interrupted coil machine. In his private house he also provides what he calls an electric bath of static electricity, by a large friction machine worked by an air engine. This apparatus is capable of giving a spark of six inches, and not worked at its full strength, is used in directing the fluid to any required portion of the patient's body, being provided with suitable conductors. I saw myself, with this machine, a spark of one and one-half inches drawn from a woman's arm without the appearance of much pain, while the current formed was strong enough to make the bystanders' hair stand on end literally at a distance of one or two feet.

The distinguished feature of Dr. Apostoli's machinery is the galvanometer by which he is enabled to measure the strength of his constant current up to 200-300 milliamperes, and the strong point of his conduct of a case is his strict attention to antiseptic details. In no case did I notice the smallest departure from the rules he has laid down for the strictest antiseptic cleanliness of his instruments and hands, a cleanliness which he insisted upon also in his visitors.

REPORTED MORTALITY FOR THE WEEK ENDING SEPTEMBER 1, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhoeal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	839	434	33.36	13.56	20.04	1.80	4.65
Philadelphia	1,016,758	454	196	26.40	9.68	11.88	.44	1.98
Brooklyn	751,432	353	192	27.72	12.04	19.88	.56	1.68
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,155	180	96	29.70	9.35	18.15	2.75	3.85
Boston	407,024	217	96	34.04	8.74	24.84	3.22	3.22
Cincinnati	325,000	105	—	17.10	9.52	8.53	1.90	5.70
New Orleans	245,000	103	36	33.95	12.61	6.79	—	12.61
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	—	—	—	—	—	—	—
Pittsburgh	210,000	97	53	40.17	4.12	23.69	8.23	2.06
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	14	7	21.42	14.28	21.42	—	—
Charleston	60,145	37	19	29.70	8.10	24.30	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	76,328	29	16	41.10	10.35	41.40	—	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	34	24	64.68	2.94	52.92	8.82	2.94
Fall River	61,203	35	22	42.90	8.16	37.48	—	—
Lynn	51,467	24	—	12.48	—	12.48	—	—
Lawrence	40,175	15	9	39.99	26.66	33.33	6.66	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36,298	22	17	50.00	4.54	50.00	—	—
Somerville	33,307	18	—	11.11	5.55	11.11	—	—
Holyoke	32,857	—	—	—	—	—	—	—
Salem	28,751	17	—	23.52	—	23.52	—	—
Chelsea	27,552	—	—	—	—	—	—	—
Haverhill	24,979	8	4	12.50	12.50	—	12.50	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	—	—	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	13	4	7.69	7.69	—	—	—
Malden	18,932	13	5	38.45	7.69	30.76	7.69	—
Fitchburg	17,534	13	7	53.83	—	53.83	—	7.69
Waltham	16,651	9	6	77.77	—	77.77	—	—
Newburyport	13,839	7	3	28.56	14.28	14.28	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 2,656: under five years of age 1,246; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 827, consumption 283, acute lung diseases 139, diarrhoeal diseases 517, diphtheria and croup 90, typhoid fever 86, whooping-cough 38, scarlet fever 34, malarial fever 36, measles 19, cerebro-spinal meningitis three, erysipelas two, small-pox two. From whooping-cough, New York 17, Brooklyn six, Philadelphia four, Baltimore, Boston and Pittsburgh three each, Cincinnati and New Orleans one each. From malarial fevers, New Orleans 14, Brooklyn six, New York and Baltimore five each,

Philadelphia three, Charleston two, Boston one. From scarlet fever, New York 25, Brooklyn four, Philadelphia and Pittsburgh two each, Fall River one. From measles, New York 16, Brooklyn, Pittsburgh and Fall River one each. From cerebro-spinal meningitis, New York, Philadelphia and Baltimore one each. From erysipelas, Boston two. From small-pox, New York and Philadelphia one each.

The meteorological record for the week ending September 1, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, Sept. 1, 1888.	Barom- eter.	Thermometer.		Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather. ¹		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	7.00 A. M.	3.00 P. M.	Duration, Hrs. & Min. Amount in Inches.
Sunday, . . . 26	29.94	72.0	88.0	65.0	72.0	64.0	68.0	W.	S.W.	12	18	F.	C.	
Monday, . . . 27	29.87	70.0	83.0	65.0	70.0	61.0	66.0	W.	N.	13	13	F.	O.	
Tuesday, . . . 28	29.94	69.0	66.0	54.0	60.0	61.0	60.0	W.	N.	15	6	C.	C.	
Wednesday, . . . 29	29.90	65.0	75.0	64.0	57.0	54.0	56.0	W.	W.	14	12	C.	C.	
Thursday, 30	29.93	70.0	83.0	53.0	63.0	75.0	69.0	W.	W.	12	14	C.	C.	
Friday, . . . 31	29.98	70.0	80.0	64.0	77.0	79.0	78.0	W.	S.	14	10	C.	C.	
Saturday, . . . 1	29.82	70.0	78.0	67.0	95.0	88.0	92.0	S.	S.E.	12	4	O.	C.	
Mean, the Week.	29.91	68.1	77.0	60.0		70.00								

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. A., FROM SEPTEMBER 1, 1888, TO SEPTEMBER 7, 1888.

WORTHINGTON, J. C., captain and assistant surgeon. Ordered from Fort Crawford, Colo., to Fort Townsend, W. T. S. O. 206, A. G. O., September 5, 1888.

HALL, J. D., captain and assistant surgeon. Ordered from Fort Townsend, W. T., to Fort Niagara, N. Y. S. O. 206, A. G. O., September 5, 1888.

BROWN, P. R., captain and assistant surgeon. Ordered from Fort Niagara, N. Y., to Fort Sidney, Neb. S. O. 206, A. G. O., September 5, 1888.

ALLEN, CHARLES H., major and surgeon, STERNBERG, GEORGE M., major and surgeon; McELDERY, HENRY, major and surgeon; and CARTER, EDWARD C., captain and assistant surgeon, are a board of medical officers which is constituted to meet in New York City on October 1, 1888, or as soon thereafter as practicable, for the examination of assistant surgeons for promotion, and of candidates for admission to the medical corps of the Army. S. O. 203, A. G. O., September 1, 1888.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING SEPTEMBER 10, 1888.

PERVIANCE, GEORGE, surgeon. To proceed to Fairport, O., as inspector. August 27, 1888.

MURRAY, R. D., surgeon. To proceed to Key West, Fla. September 5, 1888.

HUTTON, W. H. II., surgeon. To take temporary command of Camp Perry, Fla. September 8, 1888.

GUITERAS, JOHN, passed assistant surgeon. To proceed to Jacksonville, Fla., after return, from duty, on special train from Jacksonville to Hendersonville, N. C. September 8, 1888.

WASDIN, EUGENE, passed assistant surgeon. To rejoin his station at Mobile, Ala. September 5, 1888.

BRATTON, W. D., passed assistant surgeon. To proceed to San Francisco, Cal., and report to surgeon H. W. Sawtelle, for duty. September 8, 1888.

MAGRUDER, G. M., assistant surgeon. To proceed to Mobile, Ala., and assume temporary charge of the Service. August 31, 1888.

FATTIC, J. B., assistant surgeon. To proceed to Memphis, Tenn., and relieve passed assistant surgeon C. T. Peckham. August 31, 1888.

MAGRUDER, G. M., assistant surgeon. To proceed to Way Cross, Ga. September 6, 1888.

DEATH.

Died in Lowell, Mass., September 9, 1888, John Cochrane, M.D., M.M.S.S., aged forty years.

BOOKS AND PAMPHLETS RECEIVED.

Annual Announcement of the New York Polyclinic and Hospital. A Clinical School for Graduates in Medicine and Surgery. Session of 1888-89.

Obstetrical Antisepsis. By Dr. Auvar, editor of "Archives de Toxicologie," Accoucheur des Hôpitaux, Paris. Reprint. 1888.

Transactions of the Medical Association of the State of Missouri, at its Thirty-first Annual Session, held at Kansas City, Mo., April 17, 1888.

Résumé des Recherches sur la Fièvre Jaune faites par Mr. P. Gibier à la Havane, par le Dr. Domingos Freire, Professeur de chimie organique et biologique à la Faculté de Médecine de Rio Janeiro, etc. 1888.

Excessive Venery, Masturbation and Continence; the Etiology, Pathology and Treatment of the Diseases resulting from Venereal Excesses, Masturbation and Continence. By Joseph W. Howe, M.D., author of "Emergencies" etc. N. Y. E. B. Treat. 1888.

Addresses.

ON MEDICAL MUSEUMS, WITH SPECIAL REFERENCE TO THE ARMY MEDICAL MUSEUM AT WASHINGTON.¹

BY JOHN S. BILLINGS, M.D., Surgeon, United States Army.

GENTLEMEN of the Congress: Our articles of confederation require that the President shall give an address. In endeavoring to comply with this regulation, I must ask your indulgence, for, while I think I have something to say, I cannot give you such a discourse as would benefit the audience, the occasion, and the subject.

The prominent characteristic of the great majority of the societies composing this Congress is that their members have, as a rule, been chosen because they have either made some valuable contributions to medical literature, or have, in some way, rendered aid to the profession; in other words, they are supposed to be men whose labor and thought have not been confined to their own interests, or to those of their own patients. It may, therefore, be assumed that you are all interested in medical science, not merely as a means of giving new modes of diagnosis or of treatment, but also for its own sake, for the sake of knowing, for the pleasure of investigation, and in the hope of helping others, and that, while the majority have devoted themselves more or less to special branches, they have not, in so doing, lost interest in what may be for the general good of the whole profession.

I am here as the representative of the medical departments of the general government, which has need of the best knowledge of all the specialties, and is beginning, in its turn, to do something for each.

The physicians in the government service are all general practitioners, and are expected to have such an education and training as will fit them to deal, alone and without consultation, with the diseases and injuries to which men, women, and children are liable. You have been, and still are, their teachers — in the lecture-room and the hospital before they entered the service — in your text-books, monographs, and contributions to journals or transactions which follow them to their widely scattered posts of duty. They are your warm friends; the more you discover, the greater your skill, the more recognition which your work receives, the better they are pleased.

Within the last twenty-five years the general government has, in its turn, done something for medicine and for you by founding and maintaining a medical library and museum in Washington under the direction of the Medical Department of the Army.

I have had occasion several times to call attention to the library, which, no doubt, is that part most immediately useful to physicians, and which has attracted most attention. To-night I propose to speak of the other branch, in whose proper development it is desirable that you should take an intelligent interest, and, after giving a brief sketch of the development of modern medical museums, we will consider more especially our own national medical collection as it is and as it ought to be.²

¹ The President's Address, delivered September 20, 1888, before the Congress of American Physicians and Surgeons, Washington, D. C.

² As a "museum" in the original sense of the word, is a building or place in which are collected objects of interest to the museumist — that is, objects of art, literature, etc. — the phrases "medical museum," "museum of pathology," etc., would have seemed quite improper in the days of Hippocrates, just as the prevailing pronoun-

The origin of collections of objects of natural history was possibly, as suggested by Beekman, the custom of keeping curious objects in temples; but we have no record of the formation of any collections specially connected with anatomy or medicine before the sixteenth century. It is true that human anatomy had been introduced in the schools by Mundus in 1306, and that, no doubt, in Bologna, in Paris, and a few other places, a skeleton or two was preserved for purposes of instruction; but alcohol was unknown as a preservative before the end of the fifteenth century, anatomical details were of no interest until Vesalius had stirred up controversy with the Galenists, and injected preparations were not thought of until after Harvey's announcement, in 1628, of the discovery of the circulation of the blood.³

The introduction of the use of the microscope at the beginning of the seventeenth century, and the collections of preparations for use with this instrument made by Leeuwenhoek and Ruysch, gave a powerful stimulus to formation of museums of this kind. The most famous of these collections was that of Ruysch, purchased in 1717 by Peter the Great, and sent to St. Petersburg. Ruysch was practically the first to prepare injected anatomical specimens for permanent preservation, and, if the stories told of his work are true, he made preparations which have never been surpassed. His museum was a very ornamental one, the bones and skeletons being arranged in various devices, the plants in bouquets, while scattered through the whole were beautifully engrossed sentences from the Latin poets.

The most famous medical museum in the latter half of the eighteenth century was that founded by Fontana at Florence. This still exists, filling a series of rooms, and consists mainly of wax preparations, beautiful to look at, but inaccurate and of little scientific value.⁴

During the first half of the present century a number of private collections were formed by anatomists, pathologists, and surgeons. Most of these have become public collections, either by gift or purchase, and the rest have been dispersed or destroyed. There is not in existence at the present time any large collection of specimens pertaining to human pathology which is the property of an individual and is at all comparable to those made by John or William Hunter, Astley Cooper, Howship, Liston, or others, unless it

elation of the word museum grates on the ears of the elders accustomed to the strictly proper use of the word. Gaetan has, however, so strongly sanctioned the use of the word museum in the sense of a collection of different articles, that it would be folly to attempt to give it a more limited signification, and, though lexicographers still recognize only the word as accented on the penultimate syllable, the tendency to accent the first syllable is so strong and constant that it is safe to predict that museum will, in popular usage in this country, ultimately win the day.

³ For accounts of the collections formed between the days of King Solomon and the end of the seventeenth century, consult tome ii of the *Musei Museumorum* of Michael Bernard Valentin, in folio, published in Frankfort in 1711, wherein are curious engravings of many of the wonders contained in these museums. See also, Hagen (J. A.), "The History of the Origin and Development of Museums," *American Naturalist*, 1876, x, p. 80.

⁴ The first of wax models to represent pathological specimens or dissected preparations of parts of the human body is attributed to a Sicilian priest, Gaetan Jules Zumbo, who lived in the latter part of the seventeenth century, and who had been accustomed to make wax models of diseased or deformed organs, etc., to be used as *ex voto* offerings at the shrines of certain saints. The fame of these induced a Florentine surgeon, Ricci, to visit the priest and to get him to model some pathological specimens which he furnished. A Franciscan, named Destrone, brought this art to France, and made many such models between the years 1703-1708, and Bianchi formed a large collection of the same kind in Italy. It was scattered after his death, and the last vestiges of it were two models representing a healthy and diseased liver, which were to be seen in Innsbruck in 1766. (Percy et Laurent in *Dict. des Sci. Méd.*, Paris, 1818, vol. xxxv, article "Museum.")

be that of the Mott Museum in New York. Commenting on this fact, Sir James Paget writes me that he does not know of any large private pathological collection, and that he believes the change to be entirely for the better.

The necessities of modern progress in anatomy, physiology, and pathology have led to the creation of medical museums in all parts of the civilized world. In most of the continental capitals these are connected with universities supported by the State. In Great Britain and in this country they are, as a rule, connected with private or semi-private institutions for medical teaching. This difference is connected with the relative position which medicine holds in the educational machinery of the State in different countries. Where medical education is furnished by institutions directly supported by the government, the museums, which are a part of the apparatus required, are, of course, also supported by the government.

Through the aid of friends, whose kindness in replying or in obtaining replies to somewhat troublesome inquiries I cannot sufficiently acknowledge, I have obtained certain data with regard to some of the most important medical museums now existing in the world, and a part of these data are summarized in the table before you. Evidently, the city having the most valuable aggregate of anatomical and pathological specimens at the present time is London, which contains the collections of the Royal College of Surgeons, of St. Thomas's, Guy's, St. Bartholomew's, St. George's, and other hospitals, and of University College, the College of Physicians, and others. The oldest public anatomical museum in London is probably that of St. Bartholomew's, which, in 1726, had a room set apart for the purpose under the charge of John Freke, and which received the private collection of Abernethy. The most important medical museum in the world, and the one which has exercised the greatest influence in giving direction to anatomical and pathological studies, and in serving as a model for the formation of other collections, is undoubtedly that of the Royal College of Surgeons of London, the foundation of which was the collection made by John Hunter, purchased by the government in 1799. In one sense it is not a government institution, the funds from which it is now supported not coming directly from government grants; but in another sense it is truly such, since the College may be looked upon as an agent of the government having special charge of matters connected with medical education, as it is the principal examining body for those proposing to practise surgery in Great Britain.

The great value of the Hunterian collection lies in the breadth of its scope, which includes every branch of medical science; but it is pre-eminent in illustrations of human morphology and its abnormities. The museums of the great hospital medical Schools are relatively richer in the department of pathological anatomy, specimens of which they have greater facilities for obtaining. Among these there is, of course a certain amount of duplication of matters of interest; but no two pathological specimens are precisely alike, and the question discussed in the Paris school one hundred and fifty years ago; viz., "*An pro distinctis agris agnitudines diversæ?*" is one that often occurs to a curator as he examines new specimens which differ but little from those already in this collection, but which do differ in some respects, and with regard to which

he must decide as to whether, upon the whole, they are worth the trouble and cost of preservation.

Edinburgh and Dublin have also each large and valuable collections pertaining to anatomy and medicine.⁶ In Paris the medical museums are those of the Faculty of Medicine, including the Musée Dupuytren devoted to pathological anatomy, and the Musée Orfila devoted to human and comparative anatomy, materia medica, natural history and instruments and apparatus.

Professor Leon Le Fort, to whom I am indebted for data with regard to these collections, remarks that a large proportion of the anatomical specimens of the Orfila museum come from candidates who take part in concours opened for positions connected with the anatomical teaching of the faculty — such as prosectors, demonstrators, etc., each candidate being required to furnish from ten to thirty specimens.

The medical museums of other European countries are connected as a rule with universities, and it is to be remembered that in these the different branches of medical instruction are each both more specialized and more comprehensive than is the rule with us. The professor of anatomy, of physiology, of pathology, has each his own building or institute, and, therefore, each his own museum; and unless this fact be held in view, comparisons between Continental and English, or American, medical collections may give very erroneous results.

With regard to the museums connected with American Medical Schools I will say little, referring you to the table and appended notes for such data as I have been able to collect. I am aware that in so doing I put aside a splendid opportunity to enlarge upon the general superiority of all these collections and the peculiar excellencies of each, but I think that you all know as much about these as I do, and there is time only for details with regard to the one American Museum in which I am specially interested. I will say only that the best museum connected with a medical school in this country is the Warren Museum in Boston, and that the history of the collections of wax models, upon which several of our museums have expended large sums of money, is very instructive as to how not to do it.

So far as mere number of specimens is concerned our own national medical collection is one of the eight largest in the world, and is increasing more rapidly than any other.

This collection, known as the Army and Navy Museum, owes its inception to Dr. Wm. A. Hammond, one of whose first acts after becoming Surgeon-General, in 1862, was to issue a circular stating that "as it is proposed to establish in Washington an Army Medical Museum, medical officers are directed diligently to collect and to forward so the office of the Surgeon-General, all specimens of morbid anatomy, surgical or medical, which may be regarded as valuable; together with projectiles and foreign bodies removed, and such other matters as may prove of interest in the study of military medicine or surgery."⁶ By the end of the year

⁶ I am indebted to Sir James Paget for the information given with regard to the greater number of the British museums. I had originally intended to attempt to obtain such data only from four or five of the largest; but on sending my little list of questions to Sir James he took such a kindly interest in the matter as to send a copy of these queries to a number of other museums with the request that they might be answered.

⁶ Circular No. 2, Surgeon-General's Office, Washington, D. C., May 24, 1862.

over a thousand specimens had been collected, and the catalogue printed in 1866 showed that it contained 7716 specimens. It is not my purpose in this address to trace the history of its development; that must be done elsewhere. It has recently been placed, with the Library, in a conveniently arranged fire-proof building, and on the first of July last contained over 15,000 specimens besides those contained in its microscopical department, divided as follows:

Comparative Anatomy	1,689
Pathological	8,324
Medals	384
Microscopical specimens	10,416
Normal Human Anatomy	2,561
Instruments and Apparatus	814
Microscopes	141
Miscellaneous	835

Besides these there are 375 specimens pertaining to normal human anatomy and 726 to pathological anatomy, which are in what is called the provisional series.

It is not, however, by number of specimens that the importance and value of museums of this kind can be judged; and in this case such a comparison would give an exaggerated and erroneous idea of the value of this collection. My object in this address is not to boast of what we have, but to indicate what we want; to point out what a National Medical Museum, arranged to meet the wants and interests of this country, should be, should have, and should do, and to suggest some of the ways in which this is to be brought about.

At first the Army Medical Museum was limited to military medical subjects, but of late years its scope has been greatly broadened, and is now nearly the same as that of the Royal College of Surgeons. It includes human anatomy, physiology, pathology, somatological anthropology, instruments and apparatus, and illustrations of methods of teaching connected with special departments of practical medicine. It does not at present include hygiene or *materia medica*, except in their immediate relations to the military medical service, and this for reasons which will be stated presently. That our National Medical Museum should be broad and comprehensive in its scope there can be no doubt, its requirements in this respect being quite different from those of collections formed and used more especially for the purpose of teaching medical students. The most practically valuable of these last are those formed by individual professors to suit their own specialties and methods of teaching. They need not, as a rule, be large. I may even say that they should not be large; for the labor of properly preserving a large collection is great, and the student, with his limited time and want of knowledge of what to look for, can examine but few specimens so as to profit by them. For the same reason specimens of rare abnormalities, of double monstrosities, etc., are of little use in ordinary medical teaching as given in this country, and are not specially desirable in the museums of our medical schools.

You may have noticed that, in speaking of the scope of our museum, I said it included "human anatomy." This phrase does not mean that it has no specimens illustrating the structure of other animals—for it has many, and needs many more—but it means that in this department its main purpose is not to make comparative anatomy an end to itself by exhibiting all known variations in structure throughout the animal kingdom as a basis for their study in relation to devel-

opment and environment, causation and results. In other words, it is not an anatomical museum, but a medical museum. The broad field of general biology, including natural history and comparative anatomy, will ultimately be covered by the National Museum, and in our medical collection it will be quite enough to illustrate human anatomy fully, using so much of the structure of the lower animals as will be useful in explaining why certain parts of the human body are thus, and so, and not otherwise. No sharp line of distinction can be drawn between the field of work of the general and that of the medical museum. So far as morphology is concerned, they must necessarily overlap somewhat, since both want a certain number of the same specimens, although using them to illustrate different points of view.

The medical museum should possess a series of specimens showing the normal anatomy of the domestic animals, or of animals used in experimental pathology, pharmacology, or physiology, as a basis for comparison with abnormal or pathological specimens derived from the same animals. It is in the section of embryology, illustrating laws of heredity and development, that specimens from the lower animals are most interesting, and this is especially the case in the study of human abnormalities and monstrosities. It is quite possible that to some anatomists it may seem that no limitation should be placed to the scope of the museum in this direction, for it is easy to trace some connection between any variation in structure in any animal and some structure, normal or abnormal, in man, but the limitation is placed, with reference to the work of the National Museum, so as to secure the best results.⁷

The kind of specimens most valued for illustrating anatomy in a museum is now very different from what was sought for in the first half of this century. Dried and varnished dissections, showing bloodvessels, etc., are now looked on as nearly useless, and are kept only as historical relics. Elaborate dissections under alcohol, mounted in opaque dishes, with flat glass covers, and sections of frozen bodies, similarly mounted, are what the student and the practitioner most desire to see. In our museum there are some excellent specimens of this kind, prepared under the direction of Professor His, of Leipzig; of Professor Cunningham, of Dublin; and by our own anatomist, Dr. Workman. These, however, are only samples to show how the work should be done. We require several hundred such specimens to illustrate properly regional anatomy in relation to age and sex, while the possible applications of the same methods to the illustration of visceral displacements, hernias, and deformities of all kinds are boundless. As regards physiology, but little can be done by museum specimens to illustrate function, as distinguished from form and structure. The so-called physiological series in the Hunterian collection is a series of organs illustrating variations in different families of the animal kingdom, or at different ages; in other words, it illustrates ontogenic and phylogenic development. The things students or teachers of physiology are most anxious to see in a museum are specimens of instruments and apparatus employed in experimental physiology, or in

⁷ In the great majority of medical schools in this country anatomical teaching has a much more limited field than in the German universities, and our professors of anatomy, following English traditions, are usually in training for surgery. We have, however, several who are devoting their entire work to anatomy in the broad sense, and for its own sake, and it is in this direction that progress will be made.

the measurement of the special work of different organs, or in illustrating lectures on physiology. Illustration of results obtained in experimental pathology often belong quite as much to physiology; as, for example, specimens of results of Gudden's atrophy method.

The Army Medical Museum has only a beginning of such an anatomical collection as I have indicated as desirable. Like all other museums, it is richer in specimens illustrating osteology than in any other branch of anatomy, simply because such specimens are the easiest to obtain and preserve. We are accustomed to think that human anatomy is nearly exhausted as a field for original research, and that, at all events, every important organ or muscle or nerve has been figured, described, and named. Granting this, so far as the adult is concerned, although it is by no means true even for him, we have still to study the development of each of these organs or groups of organs, as seen at different ages, and, for some of them, in different races. As fast as these points are seen to be of practical interest, either in connection with diagnosis or the surgical treatment of disease, they are investigated; but an ideal museum should furnish the investigator the means for his researches; and it must, therefore, collect specimens without special regard to what is at present known to be their practical interest. The collection of such series of specimens of each joint, region, and organ, as I have in mind, including sections and dissections at different ages, from the earliest appearance in fetal life to extreme old age in man, and in many cases in the lower animals, is a slow process. Such specimens, and especially such series of specimens, can only be prepared by a skilled anatomist, and there are few such; hence the formation of our ideal anatomical collection, limited though its scope may be, must be a work of time.

There is ample material and scope for original work for half a dozen skilled anatomists for many years to come to supply the demands of this museum for illustrations of human morphology in its various relations, and it is not desirable to scatter effort over too wide a field.

The pathological section of a medical museum is its main feature, being, as Mr. Flower remarks, the section to which, in the eyes of Hunter and his successors, all others form merely the introduction. It is true that to some physicians specimens in this department seem to have little value; but they are balanced by those physicians whose chief interest in a case of disease is to get a post-mortem. No doubt, much of the ancient pathology, and some of that which is quite recent, is comparable to the looking in the dark for a black spot which is not there, but those who despise pathology, and devote their entire attention to symptoms and treatment, err as much on one side as those who talk and act as if a knowledge of pathological anatomy could take the place of clinical experience do on the other. I do not know, however, that the doctrine usually preached, namely, that each man should attain the just mean in his views, is a true one. Certainly, it is not the principle on which the universe seems to be constructed; the balance is maintained, not by having everything exactly symmetrical, but by excess in one direction balancing excess in another.

To secure pathological specimens in their most instructive forms for museum purposes requires, in many

cases, not only considerable variation from the usual routine methods of post-mortem examinations, but very considerable delay in ascertaining the results. If, for example, we wish the best specimens of the results of cerebral disease, the brain must not be removed and sliced up in the usual manner; it should be hardened *in situ* to a certain extent, and its sections should be carefully considered with reference to their preservation in their relations to each other before they are actually made. There is need of a treatise by a skilled pathological anatomist, giving such methods in detail from the modern point of view.

Thus far the great majority of contributions of pathological material to our museum have been made by army medical officers: but some of the most valuable specimens have come from practitioners in civil life, and it is to these last that we must appeal for illustrations of the effects of disease in all parts of the country. There are difficulties in the way, of course. The physician in private practice does not make post-mortem examinations in five per cent. of the deaths of patients under his charge, and when he does come into possession of an interesting specimen he is very naturally inclined either to keep it himself, especially if it is an osteological one which can be preserved with little expense or trouble, or to put it in the little collection which has been formed at the dispensary, or asylum, or hospital. I hope, however, that when it becomes known that we are trying to form in Washington a complete medical museum for the benefit of the whole medical profession, and that we have the means of permanently and securely preserving, and exhibiting to the best advantage the specimens sent to us, I say that I hope and believe that when this is understood, many physicians will be willing to take a little trouble, and to give up something of their very natural impulse to keep a trophy of their skill, or a curiosity to talk about, in order to promote the general good.

As a rule, single specimens of abnormality or of disease have little scientific value; it is only when they are associated with others that they both furnish and receive light. To this audience it is unnecessary to give other reasons as to why physicians should contribute material to the national collection, nor as to why the curator of this collection is justified in being very bold in requesting such material; but there is one objection to parting with certain specimens which is sometimes made, and to which I will refer, as it brings up one of the ways in which our ideal medical museum can meet a practical need of the family practitioner. The objection I refer to is that the specimen may be important from the point of view of medical jurisprudence: that it has a special bearing in certain suits for malpractice, etc., and that, therefore, the owner wishes to keep it to be used as testimony to protect himself or his neighbors. There is some truth in this; but it is also true that such specimens brought together in the national museum would be just as available as ever for the protection of the rights of the individual physician, while they would also be available for the benefit of the whole community.

Whether the specimens preserved are, or are not, desirable for and useful to the museum, it is certain that the securing and forwarding them is a very useful thing to the physician who does it. It tends to keep him in touch with current living thought and work of the profession, to direct his attention to the connection

between symptoms and the mechanism of their production, which is often so important in deciding on the remedy to be used, and, above all, it gives him an interest in other men's work, and thus broadens his views and increases his knowledge and pleasure.

Having obtained the specimens, the next difficulty is so to prepare and preserve them that they shall be available for study. The great majority cannot be preserved in such a manner as to retain their natural color, size and texture. No doubt more might be done in this direction than is usually done. It is possible to stain or paint portions of specimens in such a way as to give some idea of the normal appearances, but thus far, I think, experience shows that the best medium for the permanent preservation of wet pathological specimens is alcohol, and this will contract and harden most tissues, and remove the color from nearly all. It is also an expensive mode of preservation for large collections, and requires constant care to prevent the effects of evaporation. It does not follow, however, that such specimens are of little value, and that, as some have urged, it would be better to seek to obtain records of the results of disease by colored drawings or models. The pathological specimen, whether seen at the post-mortem or years afterward in a museum, is to the scientific pathologist or the practical physician, merely a sign or hieroglyph of the morbid process which has produced it; it is a result, in most cases, of interest not in itself, but because of the preceding phenomena which it connotes. As Sir James Paget has said, the same objection, namely, that museum specimens are unfit for the teaching or the study of pathology, might be made to the study of botanical specimens in an herbarium. "In both cases alike the changes produced by preparation are so far uniform that any one accustomed to recent specimens (and no others should study either herbaria or pathological collections) can allow for them or 'discount' them. Just as an anatomist can discern, in a recent specimen of disease, the healthy structure; so, but often much more clearly, can the pathologist or any careful student discern in the prepared specimen the chief characteristic of the disease."⁸ Colored drawings, casts and models are of great value in supplementing original specimens, but they cannot wholly replace them.

A good preparation, whether of normal or abnormal structure, but especially the latter, is valuable, not only for what we can see in it, but also for what we overlook or misinterpret, and which our successor may see, and see rightly. In this it is better than a mere description; yet the latter is equally necessary and much more easily preserved and made generally useful. Next to the preparation itself in accuracy and completeness of record is the photograph, and next to this is a good model, or a careful drawing.

In medical and surgical matters, as in most other things, we habitually think in terms of vision as interpreted by touch. Hence, in part, the importance of the so-called object-teaching, and the fact that what the medical lecturer shows his class will usually be much better remembered and understood than what he says to it. And while pictures and diagrams are of great assistance they are by no means as instructive and suggestive as representations in three dimensions, that is, models, if the thing itself is not available.

One of the most important sections of our museum is that devoted to microscopy, including normal and

pathological histology and photomicrographic work. In the cabinets there are nearly 11,000 mounted specimens, illustrating almost every field of microscopical research. Many of these were made twenty years ago and more, and were mounted by processes which have not given good results, so that Dr. Gray, who is in charge of this section, estimates that about 3,000 will be set aside as worthless; but the rest form a very valuable series to which additions are being constantly made, and materials for which we are specially anxious to obtain. In connection with this section a series of cultures of chromogenic and pathogenic bacteria is kept up for museum exhibits, and also to illustrate methods of work.

While the great majority of the specimens in a medical museum have some relation to diagnosis, prognosis or therapeutics, the number of those which are of direct interest to the so-called practical physician is not very great. It includes models and casts illustrating dermatology, morbid growths, the results of amputations, excisions, plastic operations, etc., and instruments, apparatus, dressings, etc., of all kinds. Here also may be classed hospital fittings and furniture, means of transportation for sick and wounded, model cases of instruments, emergency chests, etc. Our medical museum has a fair beginning of a collection of this kind, including over a thousand specimens; but many more are needed to make it reasonably complete. If each medical man who devises a stethoscope, a pessary, a speculum, an ophthalmoscope, or an electro-therapeutic appliance with which he is well-pleased, would send a specimen to the collection, its increase would certainly be rapid, and it could always show the latest improvement.

An ideal medical museum should be very complete in the department of preventive medicine, or hygiene. It is a wide field, covering, as it does, air, water, food, clothing, habitation, geology, meteorology, occupations, etc., in their relations to the production or prevention of disease, and thus far has had little place in medical museums, being taken up as a specialty in the half dozen museums of hygiene which now exist.

Our own National Museum of Hygiene, is, as you know, under the direction of the Medical Department of the Navy. It is a very interesting collection of sanitary appliances of various kinds; but it is not well-housed, is much overcrowded, and its location is so inconvenient that it receives but few visitors, and therefore, has by no means the educational influence that it ought to have. It should be provided with ample quarters in the immediate vicinity of the National and of the Army Medical Museums, to both of which it would form a very desirable supplement. In our medical museum, at present, military hygiene only is illustrated, and this only in a few branches, such as hospitals, means of transportation of wounded, etc. As regards *materia medica*, an exceedingly well arranged collection, including about 5,000 specimens, has been formed in the National Museum, mainly under the direction of Dr. J. M. Flint, of the United States Navy. The relations of *materia medica* to natural history, commerce, and the arts, which are subjects belonging especially to the National Museum, are as close as they are to medicine, and I am very glad that our national collection in this branch is where it is, and under its present management. In the Medical Museum we have a collection showing what is supplied in the way of drugs, instruments, etc., to the

⁸ British Medical Journal, 1880, II.

medical department of our army, and, as opportunity offers, we shall extend this to include the medical supplies of other armies or services.

The extent to, and manner in, which a medical museum should deal with anthropological and ethnological problems are not questions to be discussed in the abstract with advantage, since the answers must differ greatly according to circumstances. In our National Museums the matter has been so arranged that all material relating to anthropometry, or to real or supposed structural differences in man, according to race, are cared for in the Medical Museum, while specimens illustrating manners and customs, implements, weapons, clothing, pottery, etc., are taken charge of in the anthropological division of the National collection.

The Army Medical Museum contains what may seem a large amount of material relating to human osteology, and especially craniology, in its relations to North American ethnology, or the history of the development of different varieties of man on this continent; but it is not actually half large enough to permit of drawing definite scientific conclusions from it. The majority of the crania which it contains have been measured to a certain extent, and the results have been published; but many other measurements are desirable to permit of comparison with series taken elsewhere, and even measurements already made must be repeated by later and better methods. We have been trying some experiments with composite photography and superimposed contour tracings as a means of obtaining typical outlines and dimensions for race groups of crania, and these give promise of good results. If the collections of crania of North American Indians in Boston, New York, Philadelphia and Washington could be brought together, a very much better average presentation of the majority of tribes or groups would be obtained than can be furnished by either of these collections taken separately. By composite photography and tracings, combined with uniform methods of measurement, we can practically place these collections together, and obtain results nearly as satisfactory as if we had them all in one room. We have also fitted up one large room with instruments and apparatus for anthropometry in its widest sense, including psychophysical investigation, and it is intended to make this a complete laboratory for illustration of methods of work.

In London, arrangements have been made to have such an anthropometric laboratory in an out-building at the South Kensington Museum. The two things have no connection, and it seems to have been placed there because it would obtain more visitors desirous of being measured and tested than if placed anywhere else. In this laboratory, which is, I believe, essentially the same sort of institution as that arranged by Mr. Francis Galton at the Health Exhibition in 1884, and is planned by Mr. Galton; any person can have the regular series of measurements and tests made upon himself for a charge of six cents. There are difficulties in the way of making a charge for such measurements in a government establishment, and there are also difficulties in undertaking to do such work gratis, chiefly on account of the cost. It is, however, so desirable that it should be done, and the data which such observations systematically carried on for a series of years would be so valuable, not only from a scientific point of view, but for practical purposes in connection with life insurance interests, and

very possibly with practical medicine, that we should endeavor to overcome these difficulties in some way, and I think it can be done sufficiently, at least, to stimulate private enterprise in this direction. It is possible that we may yet see in large cities establishments of this kind, directed by skilled and reputable physicians, having the confidence of the profession, where not only normal but abnormal conditions can be determined; places where the secretions can be tested chemically and microscopically, ophthalmoscopic and endoscopic examinations of all kinds made, the mode of functioning of muscles and nerves determined, and an authoritative record of the results made for the use of the individual, as evidence of his condition, or for the information of his physician. It would require an already established reputation and much skill and tact on the part of the director of such a laboratory, with absolute refusal to give prescriptions or advice in any shape, to make it fully successful; but it may be done.

An important feature of our national medical museum should be to show methods of research and of instruction for the benefit of the investigators and teachers of the country. This includes instruments and apparatus, and, to a limited extent, illustrations of the modes of using them and of the results; it also includes diagrams, models, etc., used for illustrating lectures. For example, as soon as Koch's researches became known in this country, physicians, and especially medical teachers who visited the museum, asked if we could show them the apparatus used by Koch and Pasteur in bacteriological work, and eagerly examined the few specimens of cultures on solid media which we were able to exhibit. The anatomist comes to the museum quite as much to see methods of mounting and preservation, as to see the specimens themselves; the physiologist does not expect to see function directly exhibited, but he does hope to find information about kymographs and constant temperature apparatus, and he wants to see whether Kühne's artificial eye is so useful for teaching purposes that he ought to get one to illustrate his lectures.

Medical museums are not, as a rule, freely open to the public, nor are they collected or arranged with reference to interesting or instructing non-professional persons. The Medical Museum at Washington is the chief exception to this rule, and it is so, because it was placed in Ford's Theatre, the scene of the assassination of President Lincoln. Many visitors to Washington, both men and women, wished to see this memorable spot, and in doing so, necessarily went through the Museum. This gradually led to the adjusting of the specimens exhibited with a view to the fact that they were to be seen by a number of non-professional persons of both sexes. Certain groups of specimens were put aside and not shown except to persons known to be physicians, while other groups were given prominent places because they interested the public, although not of great professional or scientific value.

On the other hand the public has gradually become accustomed to consider the Army Medical Museum as one of the "sights" of Washington to be visited by male and female, old and young, and when a stranger comes to the city and inquires what he ought to see, this museum will probably be named to him next after the National Museum. Since the collection has been moved into the new building near that devoted to the National

Museum, of which it may almost be said to form a part, the number of visitors has rather increased than diminished, and it has been found desirable to consider with care some problems which this state of things has forced on the attention of the curator. That educated men and women should have some curiosity as to the structure of their own bodies, the functions of certain organs, the arrangement of parts in certain localities where they have felt pain or discomfort, or the changes which have caused death in relatives or friends, is perfectly natural and proper, and there is no objection to gratifying this curiosity to a very considerable extent. The wonder to me is, not that boys and girls, youths and maidens, men and women, like to see specimens which will teach them something on these points, but that so many of them remain ignorant of, and careless about, the wonderful mechanism of their own bodies. Now what are the specimens in a medical museum which most interest the public, and in what direction is it expedient to try to direct this interest and to do educational work by means of the exhibits? In the first place, the majority of men and women, when at leisure and trying to amuse themselves, or to pass away time, prefer things that appeal more or less to the emotions, rather than those which appeal only to the intellectual faculties. The skeleton of a hand will be barely glanced at; but if it were known that it had been the hand of a great general, a great writer or a great criminal, it would be a specimen that almost every one who visits the museum would wish to see. Usually it is not expedient nor even possible, to furnish the personal data which would arouse this purely emotional interest.

When people come to the Army Medical Museum and ask where General Smith's brain, or Judge Brown's heart, or the Hon. Mr. Jones's larynx, or Guiteau's skeleton is, and are informed by the attendant that he does not know where it is, and is not even certain that it is in the collection, there are some expressions of disappointment, it is true; and sometimes the curator is appealed to as a last resource; but a few words of explanation as to what the main purpose of the museum is, and the suggestion that one would not like to have his or her father's skull displayed and labelled with his name, no matter how great or how infamous he may have been, is usually quite sufficient to satisfy the seeker.

This addition of interest to a specimen by calling attention to certain sentimental or historical associations connected with it, is not only proper but desirable, for all specimens not derived from the human body; but for these last, the rule should be to wait a hundred years, before publicly labelling them with the names of the persons from whom they are derived.

For scientific and professional purposes we of course want a history of the specimen, which will, as far as possible, give the data connected with its peculiarities, and among these may be race, occupation, and even name, though the emotional element does not enter into it at all. If, for example, we had before us a specimen of cancer of the stomach, it might be of great interest, taken in connection with the symptoms, or in regard to the question as to whether pylorotomy or gastro-duodenostomy would have been justifiable; but from a scientific point of view it would add little to the value of the specimen to know that it was from the body of Napoleon and not from an unknown soldier.

To return to our question as to what interests the public. Of specimens illustrating the anatomy and

physiology of man no doubt the most interesting to non-medical persons are those connected with reproduction. In the hall of the Army Medical Museum, which is open to the public, we do not place specimens illustrating specially the anatomy of the genital organs; but we do exhibit a series illustrating embryology, and especially the development and growth of the human embryo, and there is no case in the museum before which the average visitor will linger longer. The specimens are clearly labelled; a lady may go there alone, and, unnoticed, may at her leisure learn something about her own peculiar function, and the provisions for the life of the new organism; and I think she will hardly find the same facilities for this self-study anywhere else in the world. I do not mean by this that other museums may not have larger and more instructive collections of such specimens, but that they are not available for the information of modest, respectable, non-professional women.

In what has been said thus far, it is chiefly the utilitarian point of view that has been made use of; but this is by no means the whole matter. No art, and no branch of science should form the sole end and object of a well-balanced life, and there are objects in every large museum which are of great interest, though they appeal rather to the emotional than the intellectual faculties of the spectator. There are many specimens in the Army Medical Museum which I would rather see removed than to lose John Hunter's lancet, which has no scientific interest whatever. So also its collection of between three and four hundred medals and tokens relating to medical institutions or distinguished medical men, or commemorating outbreaks of pestilence or the victories of preventive medicine, is one which should be made complete and fully displayed, though it would not be easy to demonstrate its utility to any one unless he were interested in the history of the struggles and triumphs of the medical profession.

The objects of a medical museum are to preserve, to diffuse and to increase knowledge. Its conservative function is to form a permanent record of what has been demonstrated and to fix the meaning of terms. Even in my brief experience of thirty years the terminology of anatomy, physiology, pathology, chemistry, and of most of the specialties has greatly changed, and this not only by the addition of new terms, but by the dropping of old one. To get useful results from the older literature we must know the precise significance of the old words, and, in some cases, the best way to learn this is to examine the specimens prepared by those who used such terms in their descriptions. The specimens in our museum which came from the collections of Professor William Gibson and Dr. Frank Hastings Hamilton are especially valuable because they were the basis of practical teachings, and should be examined by any one criticizing these teachings.

A large proportion of the pathological specimens in this museum illustrate conditions which now rarely occur, forming a group which it is safe to predict will never be duplicated. It is not only that they were gathered during a great war, but that they illustrate the results obtained when antiseptic surgery, as now understood and practiced was unknown. Never again, I hope, will there be brought together such a collection of the effects of pyogenic microorganisms on gunshot wounds, especially of bone, as may be seen in its cases.

The museum also preserves, for future investigation, objects whose nature of relations are not understood at the time when they are received, and which occur so rarely that the means of studying them by comparison can only be obtained through such preservation.

Upon the function of a museum as a diffuser of knowledge;—as a means of education—it is needless to dwell. That it should also strive to increase knowledge is equally certain. This is to be effected by study and comparison of its materials. The results of such study and comparison of a part of the Army Medical Museum collection have appeared in the volumes of the *Medical and Surgical History of the War*. Another part will, I hope, soon be utilized in a study of its collection of human skeletons and crania which has been commenced by Dr. Matthews, of the Army. But a considerable part is as yet only in the stage of agglomeration, and our present business is to collect and preserve, leaving to the future its full utilization.

A medical museum is really used, for purposes of study, by very few persons; but through the teaching of those few its lessons are made known to the whole profession. American physicians in investigating a subject do not, as a rule, think of inquiring as to what museums can show with regard to it, simply because they have not had convenient access to large collections and are not accustomed to make use of them. Thirty years ago we were in much the same situation in respect to medical literature; but as the libraries have grown, desire for bibliographical research has grown also, and I think that in like manner when we have secured a comprehensive National Medical Museum it will not only be made use of, but will give a powerful stimulus to the formation and progress of other more special collections elsewhere.

What should be the relation of this central national collection to those formed in different parts of the country, either in connection with medical schools, or with museums of broader scope? Certainly they should help one another, and this can be done in many ways. I do not in the least object to a generous rivalry to do the best work, to have the most instructive and the most artistic preparations. That is a good thing. But I would say to the anatomist of a school, when you have made a preparation which is noteworthy, offer to make a copy for the national collection, where it will be seen by the anatomists of all schools and of all countries. To the pathologist of a medical school I would say, after you have secured type specimens of your own collection put aside other good specimens for the National Medical Museum, which will furnish you materials for the purpose.

On the other hand, the collections of the National Museum are available for study by any proper person, and its duplicates should be used to aid other museums which may be in special need of them.

In common with several of the largest and most important medical museums, more especially those of the Royal College of Surgeons and of the Faculty of Medicine of Paris, the Army Medical Museum has the advantage of being closely associated with a large medical library which is in the same building, and at present under the same direction. The increased utility and attractiveness which this gives to both library and museum is very decided.

It is true that in some other institutions similarly

arranged there has been some grumbling as to the proportion of funds allowed to the museum and to the library respectively, the museum enthusiast claiming that the librarian would rather have one rare old pamphlet than half a dozen entirely new vertebrates, while the bibliophile is sure that the demand of the profession for access to a full supply of books and journals is much greater than that for access to specimens. I can only say, from my own experience, that one who has charge of a library only, will probably not hesitate to take museum funds, if he can get hold of them, to buy books; but that when one person is responsible for both he will endeavor to give each a fair share of the resources at his command.

If we had to choose between having a great national medical library and a great national medical museum, no doubt most of us would take the library, because it would be of more immediate use to us; but no such unpleasant alternative is forced on us. There is no reason why we should not have both, and we must have both.⁵

I have time for only a very condensed statement of the wants of our national Medical Museum. In the first place it needs the intelligent interest and friendship of the medical profession of this country. To a very considerable extent it has had this; were it otherwise it would not be what it is, nor where it is. But it needs more of it, and it can never have too much. Every medical man in this country should help a little and provide for the perpetuation of his name as that of a physician interested in the progress of the profession by sending at least one specimen to it. It is omnivorous in its demands for material, as will be seen by the circular which it has recently issued. But I will name as special wants, human embryos, especially those of a very early age, monstrosities and malformations of all kinds in man or in the lower animals; results of old injuries, such as fractures or dislocations, or of surgical operations, such as excisions, stumps, etc.; injuries and diseases of the eye, ear and nose; new growths of all kinds; diseases of the brain and spinal cord; and specimens illustrating the condition of bones, joints, brain, larynx and other organs in extreme old age.

In the second place it needs a regular supply of funds from the general government. To form and keep in proper condition such a medical museum as this should be is a more difficult and expensive matter than those not acquainted with such work would suppose, and the gifts of specimens from the profession must be supplemented by ample means for the preparation, preservation and proper display of these specimens, and also for the purchase of apparatus and typical specimens of foreign work, in order that the Museum may be always able to show the latest state of knowledge and the best ways of doing things.

The annual appropriation for the Museum at present is \$5000. This is sufficient, except that the printing of the catalogue of which I shall speak presently, must be an extra charge; but the medical profession should see to it that the amount is not reduced in the rhythmic spasms of partial economy with which some of our statesmen are afflicted.

The third need of the museum is of a series of the right kind of descriptions of its specimens, given on

⁵ "There are few things in relation to our science of which I am more sure than this, that every possible method of studying it should be by all possible means promoted." Sir James Paget, *Lu Lancet*, January 22, 1887, p. 136.

labels and in a catalogue. Unaided by such descriptions it has for each man that which he can see in it, and no more. One man will see nothing but an old piece of bone, a shapeless mass of tissue bleached by alcohol, a case of old dingy brass instruments. Another will see in the same things a rare joint atrophy, implying curious abnormal nerve influence; a leprosy nodule, whose history, if we knew it, would reach back through the leprosy-houses of the Middle Ages to the far east, and whose bacilli may be the lineal descendants of those that vexed Naaman the Syrian; a case of microscopes illustrating the development of that instrument, from the first rough iron tube of the spectacle-maker of Nuremberg to the delicate and complicated instrument through which we now peer curiously into that world that lies within the world of unassisted vision. By our labels and catalogues we must tell men what to see; but to do this we must first see ourselves. The aphorism that a first-class museum would consist of a series of satisfactory labels with specimens attached means a good deal. Something has been done in this direction, as you will see on inspection of the cases; but I often wonder what sort of labels a man who has spent years in investigating the normal and abnormal structure and relations of one organ would write for our specimen of that organ. Such help as this we need; kindly, truthful criticism, the pointing out of errors and of new points of view for this mass of material.

We also need a series of printed catalogues. One of these should be in the form of compact handbooks relating to particular sections of the collection, and intended partly for the use of visitors while in the museum and partly as a ready means of letting distant friends know what material it most needs in different departments. It should also print a complete illustrated catalogue of the whole collection for the use of the investigators and teachers of the profession. Congress has been requested to grant authority for the printing of such a catalogue by the Government Printer. The material for it is nearly ready, and it would make three volumes each the size of one of the volumes of *The Medical and Surgical History of the War of the Rebellion*.

The subject of museum organization and management, is one of those with regard to which it has been said that a man who is interested in it passes through three successive states of mind; namely, First, he thinks he knows almost all about it, except a few minor points of detail which he is going to look up. Second, he feels that he will never know anything about it. Third, he believes he knows a little and hopes by experience and study to know more.

The museum needs earnest and well-trained students to work up its collections so as to advance knowledge, and, at the same time, to display properly the specimens so as to make them most instructive. To all such students we shall endeavor to afford opportunities for this work. Precisely how this is to be effected is not yet clear, but here is abundance to be done, and there are quite a number of men coming on the stage who want to do such work for its own sake, because it gives them pleasure. Sooner or later we shall have half a dozen or more of specially trained men busy in the laboratories and work-rooms of the museum, each engaged on his own problems, and the whole for the common good.

The medical museum hints at matters which lie out-

side the scope of known physical and chemical laws. Physicians have not, as a rule, been very virulent theologians; their studies and their daily work tend to give them compensation of bias in this particular, and, therefore, in this age of transition in beliefs, it is not so true of them as of others, that "the old hopes have grown weak, the old fears dim, the old faiths numb." In our medical museum yonder may be found abundant illustrations of the results of physical and chemical actions and reactions upon what was once living matter, and was connected with centres of consciousness, of intellect, of emotions which imply something more than ordinary protoplasm or mere metabolism. It brings together strange company. The men who dwell on the sides of the Andes in the old Aztec days, the men who built cities in the Gila Valley centuries before the days of Columbus, the Esquimaux, and the Indian of the plains, black and white, red and yellow, all sorts and conditions of men are represented in those bony caskets which once held their centres of life and thought; but now are reckoned only as so many crania in the Museum catalogue. The great majority of the pathological specimens imply either suffering or death, or both, of the individual from whence they came. Some of them are the results of intemperance, of lust, of folly and crime; but some are the results of unselfish sacrifice for the good of others, true flowers of blood and pain. A large group of them form one of the relics of an acute paroxysm of disease of a great nation. The old pensioner likes to keep the battered ball which crippled him, and so these relics have an interest beyond that which is purely professional. That the nation is not crippled by its loss, takes nothing from their interest, and the fact that we are physicians does not imply that we look upon them from a medical or scientific stand only. Those of the combatants who survive, are now better friends than ever, and the museum specimens, coming as they do from the sick and wounded of both armies, and contributed by both Union and Confederate surgeons, enforce the lesson of the unity of the profession and of its interests, as well as that of our country.

Our museum, like the library with which it is associated, includes all the specialties. No physician is so learned or skillful that he can find no instruction there, and no one is so ignorant that he cannot comprehend some of the lessons which it teaches. Taken together these institutions should contribute in no small degree to our national prestige, for which eminence in scientific work and teaching is an essential element, and if it be remembered that they are only twenty-five years old, and that during that period we have been making medical history at a tremendous rate, surely some incompleteness and crudeness may well be excused or overlooked.

Speaking in behalf of the army medical department and for the dead as well as for the living, who have been charged with this work, I can truly say that we have been very proud of our charge, and that we have done our best, each according to his capacity and opportunities to make the museum and library such as a great profession and a great nation have a right to demand.

— Benevolent old gentleman in the park, to nursery-maid with charges: "Are those children twins?" — "Oh no, sir." — "Dear me, what is the difference in their ages?" — "Six hours, sir."

THE RELATION OF SOCIAL LIFE TO SURGICAL DISEASE.¹

BY D. HAYES AGNEW, M.D.

THERE is no tyranny more exacting or despotic than that exercised by the conventionalities which govern our living. All stages of life from infancy to old age are under its domination. It dictates the education, the manners, the walk, the dress, the forms of speech—in fine, the whole being. Beyond all contradiction, the behests of fashion are vastly more influential in governing public conduct than any arguments drawn from the teachings of structure and function. As a rule, when the conflict is between taste and reason, the victory will be on the side of taste. In nothing is this more forcibly displayed than in the apparel used to protect the body.

It is not an agreeable task to peer into the ward-robes or dressing-rooms of our fair country-women. I have no special taste for exploring museums or bazaar collections. Indeed, without a key to interpret the curious and ingenious mechanisms for clothing the form divine, such an explanation would be like an archaeologist attempting Egyptology ignorant of cuneiform inscriptions. I have, however, some knowledge of human anatomy in its broadest sense, and when I look upon the masterpieces of the human form, whether in marble or on canvas, a Belvidere, Apollo, or a Venus de Medici, and contrast these with the dressed-out specimens of modern women, I am forced to admiration, not so much at the amazing ingenuity displayed in concealing the divinely appointed form, as at the plasticity and patient submission of mortal clay under the despotism of a conventional inquisition. Were these processes of mutilation and abnormality harmless, did the body consist of a mere mass of protoplasm, capable, under the application of certain stimuli, of assuming normally protean shapes, the subject might be passed over with the feelings of a naturalist, but this is not so. These violations of the laws of structure bring with them serious penal inflictions, which, did they terminate with the original offender, might be dismissed with a sentiment of pity, but projecting, as they do, their baneful consequences to successors, they become proper subjects for criticism.

Let me name a few examples as illustrative of my subject: For some time the profession has been speculating on the causation of nasal and post-nasal catarrh, with its accompanying auditory defects, the growing frequency of which cannot have escaped general observation. Doubtless no single agency will explain the presence among us of this unpleasant disease, yet there are facts connected with this affection which, to me, are very suggestive. I cannot recall an instance in which I have met with the disease among females belonging to the Society of Friends, Dunkards, or Menonites. If this, on more extended observation, proves to be true, may not the head-dress peculiar to these people be accepted in explanation of their exemption? The bonnet which at one time overshadowed the entire head, as all know, has been gradually shrinking in its dimensions, until it has become a mere shadow of its former self, and offers no protection whatever to the head. As a substitute, I would not insist upon the quaint head-gear of the Friend, though

I believe that any modification which will protect this part of the body will lessen the tendency to catarrhal inflammation of the naso-pharyngeal mucous membrane.

Muscular Restraint.—A legion of physical imperfections arises from muscular restraint. Among these may be mentioned weak ankles, narrow or contracted chests, round shoulders, projecting scapulae, and lateral curvature of the spine. The foolish concession to appearance and the unwise partiality of parents for enforced education, the demands of which bear no just proportion to the capacity of the infantile mind, constitute the initial or determining force of these physical imperfections. In many cases the weak ankles of children, characterized by eversion of the feet, thus allowing the superincumbent weight of the body to be transmitted to the latter inside of the proper centre of support, is largely chargeable to the miserable practice of placing on the little ones, long before they are able to walk, boots tightly laced up the limb some distance above the ankles. The confinement of the flexor and extensor muscles by this constriction prevents that free play of movement which reacts so favorably on all the elements of an articulation, and that, too, at a time when the growing forces are at full tide, so that when the time arrives for standing and walking the muscles are unequal to the firm support of the joint. The consequence of this feebleness is soon seen in the turning outwards of the feet, throwing the strain on the internal lateral ligaments, which, in turn, become elongated through growth, and thus the defect becomes established. But the evil does not terminate here. The calcaneo-enboid and the astragalo-scapoid ligaments losing the proper support of the tendon of the posterior tibial muscle under the abnormal tension, begin to yield, and to the deformity of eversion is added that of "flat-foot." That the above is not a mere hypothetical explanation of the ankle defects, I have many times verified by finding the threatening symptoms disappear after liberating the imprisoned muscles and subjecting the enfeebled parts to a judicious massage. Under no circumstances, as is too often the case, should instrumental apparatus be applied, unless in cases where, from neglect, the deformity is thoroughly established and is progressive.

Take another deformity, that of bow-leg. On the earliest signs of the unsightly curve, the limb is too often trammelled with irons and the growth of the muscles arrested, when it is well known that if manual force be systematically applied two or three times a day, the limbs will gradually assume their typical form.

Again, in further illustration of our general text, take as an example a child who, for one long or two short sessions for six days of the week, sits over the study desk, compelled to assume a position in which, from the inclination of the body, the shoulders fall forward, the head being supported most probably on the elbows and hands. In such a posture, the great serrati and pectoralis major and minor muscles are in a state of relaxation, while the erector spinae and trapezei muscles are in a state of tension. This change in the posture of the shoulders gives the scapulae over, without antagonism or resistance, to the action of the rhomboidei and the levatores angulae scapulae muscles, which, acting conjointly, cause that projection of the lower angles of the shoulder-blades which the older anatomists termed "scapulae alatae."

¹The President's address, delivered September 18, 1888, before the American Surgical Association, Washington, D. C.

To all this must be added the very important factor of four to six hours in the school-room and two hours, at least, of home preparation for the following day's recitations, during which time the respiratory functions, having been reduced to a minimum of activity, the muscles of the chest are comparatively passive, and aëration of the blood tardy. Certainly, no combination of conditions could be better devised for forming contracted chests and round shoulders. It is not long before the watchful eye of the mother detects the change in the figure of her child. She will probably discover this and take alarm, even when the pale face, the languid air, and the capricious appetite of the child cause no anxiety; and then comes the second act in the drama of physical deterioration; namely, a resort to shoulder braces and stays in order to accomplish that which the muscles should be taught to do without restraint or incumbrance.

Lateral Curvatures.—While it is true that lateral curvatures of the spine depend upon causes both central and peripheral, yet in no small number the deformity is clearly attributable to influences of a social nature. The young column, by reason of the non-union of the epiphysis and diaphysis, and the supple character of the ligaments, is extremely flexible. Whatever, therefore, destroys the muscular equipoise, however inconsiderable the force, if persistently repeated, changes the centre of gravity, and develops primary and compensating curves. For six months in the year, any five morning groups of young children may be seen plodding along our streets with a miniature library of books suspended from one shoulder. To the already preponderating scale of the balance add the additional factor, a probably badly arranged light, compelling these little *savants* to assume a lateral inclination of the body in order to obtain the necessary illumination of the subjects of the study, and you have all of the conditions necessary for perpetuating the lateral deformity. "Just as the twig is bent the tree's inclined." As in the case of round shoulders, so here, in order to prop up the falling column, instrumental contrivances are immediately called into requisition. The body is incased in a formidable coat of mail, to be followed by muscular atrophy and permanent distortion of one of the otherwise most beautiful pieces of mechanism in the human frame. It is true that in most educational institutions for the young provisions are made for physical culture, and these are in some measure antidotal to the evils complained of, but, in my judgment, do not at all compensate for that free unstudied romp in the open air, untrammelled by the hard and fast rules of calisthenics, so fascinating to the young child. Nor does the evil end here. While the forcing process which is to stimulate the mental powers far beyond the real capacity of the immature and growing brain to receive is in progress, another is inaugurated which is to qualify especially the female child to acquit herself with distinction when the time arrives for entering the great world of society, or, as Thomas Brown would style it, "for the frivolous work of polished idleness." The gait and carriage must be reduced to prescribed rules, the voice trained down to a drawl, or trained to move like a mountain torrent. The muscular apparatus of the face must be taught to express, not the spontaneous and natural outflow of feeling which wells up unbidden from the magic chamber of the heart, but rather to produce an effect; and so this work of transformation goes on until it culmin-

ates in the full-blown society girl. Is it any wonder that under such a scheme of education, conducted throughout by a studied disregard of both the physical and mental constitution, and exercising as it does such tremendous drafts on the nervous system, that the world is becoming filled with a class of flat-breasted, spindle-limbed young women, unfitted for the varied and responsible duties of womanhood, qualifications, too, which under a different regimen and directed into proper channels would exert a most potential influence on all the great social and moral problems of the age.

While thus plain spoken on the frivolous methods of living, I do not wish to be understood as being unfriendly to the highest cultivation of the mental and physical powers, if conducted on lines in harmony with the organization, nor to any technique which may conduce to personal grace or elegance of manners, so that the manly or womanly personality of the individual be not sacrificed to the Moloch of sentiment and sham. Indeed, indifference to these things is inexcusable in either man or woman as not only lessening their influence in the world, but in many respects disqualifying them for the highest discharge of the duties of modern life. Valuable as may be the unpolished diamond, yet it is only after the wheel of the lapidary has worn away the dull incrustations that its true brilliancy is revealed, and the gem is fitted to adorn the brow or the breast of beauty.

Bodily Constriction.—In the further discussion of my subject, I may next notice the evils of visceral displacement and pressure, consequent on abdominal constriction. Whatever may be said in regard to Greek and Roman life, the infinite care which these people displayed in developing and maintaining the very best type of the human form is worthy of admiration. The Ionic "chiton" spoken of by Attic writers, and so often represented in the bronzes of Herculaneum, while it would not exactly satisfy the modern idea of dress, was at least free from the charge of interfering with contour of the human figure. The painters and sculptors of those classic days were reverent students of nature. Their delineations were true to life. Their works furnish us with no hour-glass constructions of the human body. The constriction of the waist operates injuriously on both the supra and infra diaphragmatic organs. Any force acting on the base of the thorax, and preventing the expansion of its walls, concentrates the function of respiration; which should be general on the apices of the lungs, and hence, under these circumstances, the movements of breathing are for the most part confined to the summit of the chest. As the initial seat of tuberculosis is located at the upper part of the lungs, may not the inordinate work entailed on these parts by constriction have some part in hastening such deposits in the female where the predisposition exists? It is this forcing inwards of the costal border of the thorax which causes the groove on the anterior surface of the liver so familiar to anatomists. This pressure cannot fail to interfere with the descent of the diaphragm and with the functions of the gall bladder and duodenum, and exercises no small degree of influence in favoring the formation of biliary calculi, females being peculiarly prone to such concretions.

The extent to which the liver may be damaged by extreme constriction of the waist, is well illustrated by a case quite recently reported in the *British Medical*

Journal in which a considerable portion of the left lobe of the liver had been separated from the right, the two being connected only by a band of connective tissue, and which enabled the operator to remove the detached mass without difficulty. The evil effects of this constriction on the viscera of the abdomen and pelvis is most strikingly witnessed in the embarrassed portal circulation, in the different uterine displacements, elongation of ligaments, displaced ovaries, tubal inflammations, hemorrhoids, hernia and other morbid conditions which either prevent or disqualify the woman for the exercise of those functions of maternity, and which in addition, through reflex influences, entail a host of functional disorders reaching into every avenue of the body and invading both the mental and moral constitution of the victim. So prolific have these infirmities become that a new department of surgery has been organized for their special management. To what, if not to social causes, can these morbid changes of structure in the pelvic organs, especially of the uterus and its appendages, be attributed? Why should laceration of the cervix uteri be so common an accident? Labor is a natural process and ought not under ordinary circumstances be attended by lesion of uterine tissue. I can conceive of no agency more likely to induce that muscular degeneration which predisposes to this accident than the modes and methods of modern living especially among the inhabitants of great cities. In the expression "modern living," much is embraced. It includes culinary pharmacy, over-feeding and drinking, insufficient or injudicious exercise, improperly heated apartments and a disproportion between the hours of exercise and rest. Contrast if you will the muscles of the hardy, country house-wife, who bearing the cares and responsibilities of a dependent family bustles about the live-long day in and out of doors, eats with a relish her plain and simple fare, repairs at seasonable hours to bed, and sleeps the sleep of the beloved, undisturbed by dyspeptic night-mare, and rising with the golden dawn resumes the round of domestic toil with a clear head and supple limbs. I say contrast this type of a class with that of another, the woman born to luxury and ease whose capricious and exacting taste taxes the art of the professional caterer, who drags out the morning hours toying with some crazy piece of embroidery or trashy novel, lunches at one, rides out in the afternoon for an airing of two or three hours, returns to a dinner of five or six courses at seven, completes the evening at the opera, the theatre or the assembly, and coming home after midnight, crawls into bed weary and exhausted in body and mind, only to rise with the best hours of the morning gone, for another day of aimless routine life. Can it be doubted that in the first case, with a digestion unimpaired, with the products of textural change consumed by functional activity and eliminated through the proper excretories, the woman should possess a vital resistance and a tone of tissue altogether superior to that of the other, whose habits of living must necessarily favor their faulty metamorphosis?

To these same agencies must be attributed that brood of nervous and hysterical evils, for the relief of which the gynaecologist, too often I fear invades the domain of womanhood, around which her whole sexual nature revolves, and which, save only in the direst extremity, should be sacred against all operative intrusion.

Late Marriages constitutes another social evil, the

penal inflictions of which involves both sexes alike. Pride and luxury determine long engagements or deferred proposals. Marriage, it is believed, necessarily involves an establishment, a display, a *re-tine* of servitors. The good old notion of two souls being united in wedlock for the purpose of being mutual helpmates, and patiently together working up from modest beginnings to affluence, seems to be entirely at variance with the modern idea of this relation. In the meantime the young man is betrayed into unlawful sources of gratification, alike destructive to moral and physical purity, the pollution of which incontinence is often subsequently communicated and perpetuated to wife and offspring. I would not dare to say how many cases of this nature have been entrusted to my professional confidence, though I doubt not my experience does not differ from that of many of my professional brethren whom I address. It is under such circumstances that many of those infective inflammations of the fallopian tubes as salpingitis and pyo-salpinx arise and which entail the most serious deterioration of health.

The Foot and the Shoe.—It may be thought by some persons that the subject of the foot and the shoe is not of sufficient dignity to appear in a public address. The Romans and the Greeks thought differently. The literature of both people is full of references to the shoe worn by both sexes. So important, indeed, are the feet to the well-being of the body, that whatever impairs their usefulness, either for support or locomotion, becomes a positive calamity. Nothing can be more unlike the human foot than the modern shoe. Let any one leave the impress of his or her foot in the wet sand of the sea-shore and then place alongside of the imprint of a fashionable shoe; that the two were ever intended for each other would scarcely strike a child of the forests. The North American Indian entertains juster notions about clothing this portion of his body than does the civilized denizen of New York or Philadelphia. Compare the moccasin with the shoe of the city belle. Compare the *συνδύλον* or the *πέδιλον* of Pollux and of Aristophanes with the same, and we shall see that the savage and the polished Greek alike understood the value of sound feet in the race of life. It is the imperfect adaptation of the shoe to the foot which constitutes the fruitful source of tired ankles, corns, bunions, overlapping of the toes and ingrowing nails. Some idea may be formed of the magnitude of the evil from the fact that of eight hundred patients under the care of a prominent chiropodist of Philadelphia, the great majority of the defects were entirely attributable to the high heels and the contracted toes of the shoes. Especially do these physical encumbrances arising from a blind submission to social laws, operate disadvantageously to our fair women at the beginning of the new dispensation requiring both muscles and brains, and when her friends propose to sweep away all the old traditions and claim for her the earth, with all its masculine employments.

Games and amusements which in themselves are proper and praiseworthy, too often become developed into a craze, working both moral and physical mischief. Professor Leut, himself a professional in the national game of base ball, has described the pitcher's arm, a condition of over-taxed function, and one in which all the anatomical elements of the upper arm are involved. There is also the tennis arm and the

swollen supersensitive prostate of the bicyclist, both due to the abuse of popular amusements.

Defects of refraction or visual defects, constitute another class of affections fairly attributable in many instances, to social influences. The number of children which may be seen in our streets any day, wearing glasses, has become a matter of common observation. It is far from being probable that the most exquisite piece of mechanism, the human eye, came from the Divine Artificer, imperfect. Because eyes are young it does not follow that they are thereby better fitted to sustain prolonged use. Just the reverse is true, and it is high time that parents and educators began to recognize the fact. The power of the eyes for continued use like that of other organs of the body, is one of gradation. It moves in the general procession and strengthens with the advance in life until development has attained to its zenith. Not only so, but the eye being a part of the body, it must suffer or rejoice through the operation of general causes. A bone may have its normal curves changed, a tendon may slip from its appointed groove, or a bloodvessel be destroyed, and yet very little disability be realized; but the eye is made up of such extremely delicate structures and acts according to fixed physical laws, so that not the slightest alteration of a curve or the mobility or density of its media can occur, without great vitiation of function. To exact, therefore, long hours of study from children of a tender age, involves a degree of functional strain, altogether disproportionate to the structural resources of the organ, and by disturbing the orderly processes of nutrition, give rise to hypermetropia, asthenopia, astigmatism, and its companion headache. That the picture is not too highly colored or the causation overstrained, we have only to contrast the children born and reared in those portions of the country not too much dominated by the methods of modern civilization, and who rarely demand a resort to artificial aid to provide for abnormalities of vision. The only remedy for the evil where infantile scholarship is insisted upon, is the Kindergarten or object system, the most natural and effective plan of impressing the young mind.

Renal Disease.—Is there any reasonable explanation drawn from sources of a social nature for the great frequency of those renal disorders which come more particularly under the care of the surgeon as crystalline deposits and calculi? For maintaining the general health at the highest physiological standard, a proper quality of food and the proper disposal of tissue waste are essential conditions. Along with wealth and luxury come the abuses of the table. Americans are fast becoming a nation of dyspeptics. Our country is so rich in the products of every zone that nowhere else in the world can you find such a variety of foods, animal and vegetable. These foods, manipulated in a thousand ways by the subtle art of the professional cook, almost necessarily betray one into excess, and also create the desire for wines and other alcoholic beverages to aid the stomach in disposing of its plethoric supply. In great cities, which furnish relatively the largest number of cases of renal disease, affecting preëminently the mercantile and sedentary classes, we find just the conditions favorable to their development. The competitions of trade keep the merchant always at white heat. Time is golden, and the street car and other means of conveyances annihilate distance, and the ride is substituted for the needful walk. A hasty lunch at

the most convenient restaurant satisfies the inner man until the business of the day is closed, when, weary and worn, he is driven to his home to partake of a course dinner, the balance of the evening to be spent on the lounge with the evening paper or the latest periodical. As for the literary man, the fascinations of the study and the library charm him away with their siren voices from the fields and the highways until bodily exercise grows distasteful and repugnant. In the meantime there has been no provision made for the waste or tissue metamorphoses of the body through that great agency, exercise. These accumulate in the blood, the internal eliminating organs of which the kidneys are chief, are overtaxed; and then follows the evils of malassimilation and of excretion in the form of urates and oxalates, often resulting in the formation of calculi.

In conclusion, may we ever hope for a time when the race will realize that these bodies which we wear, which God has so highly honored by his own incarnation, are sacred temples to be kept in harmony with recognized physical laws, and not to be made instruments of mere animal gratification.

Original Articles.

CASES OF CEREBRAL TUMOR.¹

BY S. G. WEBBER, M.D., ADAMS NERVE ASYLUM.

THE following cases illustrate the various phases of cerebral tumor. In two the general symptoms, preceding the more local, are such as usually accompany cerebral tumor. They are more frequently due to the remoter effects of the tumor, to pressure, to disturbance of circulation, to irritation and reflex influences. Headache is the most common of these general symptoms. It is rarely absent: but, as in two of the cases reported, it may not precede the more local symptoms. In the first case the pain in the head was excessive. It is often less severe than in this instance. Probably the locality and severity of the headache depends upon the situation of the tumor and the rapidity of its growth. We do not know if the pain is due to pressure upon the membranes through which the nerves pass, or upon inflammatory changes causing the cerebral substance itself to become sensitive. When the pain is not definitely localized in a small area, but is spread quite generally over one side or the whole of the head, and when it radiates to neighboring regions, as face and neck, it is probable that the tumor presses upon branches of the fifth nerve, which are found in the dura mater.

The growth of tumors causes a change in pressure, the irritation is greatest at another place, the circulation again is affected differently, therefore the headache varies, or may cease for a while.

Of sensory disturbances other than headache, there may be pains in the limbs, a sensation of numbness or of formication, an oversensitiveness to certain impressions, or to all impressions, upon the surface, or an increased acuteness of special senses. Sometimes the hyperæsthesia or anæsthesia is unilateral, and becomes then rather a localizing symptom. It will be seen that our patients had more or less disturbance of general sensation.

¹ Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Suffolk District of the Massachusetts Medical Society, on the occasion of the annual meeting of the State Society, June 11, 1888.

Dizziness, staggering and general weakness, or weariness, are the more common general motor symptoms. It is not possible to connect these with any particular seat of the tumor, though when severe they may give rise to suspicion of diseases of cerebellum or the peduncles of the brain. These symptoms are not always very decided. There may be merely a slight sense of unstable equilibrium on change of position from reclining to upright, or the reverse. The weakness may be simply a sense of general weariness, a feeling of inability to walk as far or do as hard work as formerly.

Variations in the superficial and the deep reflexes are quite common in cerebral tumor. Perhaps these are in a measure localizing, as they are present on the same side with the paralysis, if that exists.

Mental disturbance belongs to the general symptoms. It was present in these cases in various degrees, from simple habitude to decided dullness, loss of memory and unconsciousness. It is difficult to decide whether the attacks of unconsciousness in the first case were due to the general or diffused influence of the tumor, or were not due to local disturbances. As the disease progressed the mental dullness was marked in all the cases. I think there was no insanity in any of them, yet this is sometimes clearly marked as dependent upon a tumor of the brain.

Vomiting is rather common. When present it is a valuable symptom. It is sometimes very obstinate, resisting all treatment or means to alleviate it. It is most common in tumors affecting the medullar and cerebellum, especially the middle lobe. There may be nausea without vomiting.

Optic neuritis is a very valuable symptom for diagnosis. If the other symptoms are obscure, if there is doubt as to their importance, and it seems impossible for such slight disturbances to signify so grave a change, the ophthalmoscope may decide the question. If optic neuritis is present the most trifling symptoms acquire an immense importance. The neuritis may be absent, but if present it is not to be underestimated. In some of my cases the other symptoms so decidedly pointed to tumor, and the patient was in such a condition the ophthalmoscope was not used.

Besides the general symptoms which are common to most cases of tumor of the brain, and have no localizing value, one symptom which is of importance in the diagnosis of the situation of the tumor is found in three of the following cases. I refer to hemianopsia. In two of the cases there was homonymous lateral hemianopsia, and in one case this was

optic (o') tract to the right side of the brain (a.) Any destructive lesion, therefore, of the optic tract or the nerve centres on the right behind the optic chiasma will cause loss of vision for objects to the left of the patient. This is left homonymous lateral hemianopsia. If there is paralysis due to the same lesion, the loss of vision affects that half of the field of vision which corresponds with the side of the body which is paralyzed.

The word hemianopsia is used with reference to the loss of function in the retina. Hemianopsia is used with reference to the field of vision; therefore, as the rays of light cross from right to left after entering the eye, right hemianopsia corresponds to left hemianopsia. American authors seem to prefer hemianopsia. Most English authors, except Ross, use hemianopia.

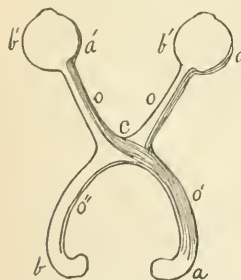
Hemianopsia may be caused by lesion of one optic tract behind the chiasm. It is also caused by lesion of the external corpus geniculatum, the anterior corpus quadrigeminum, that portion of the optic thalamus called the pulvinar, and the cuneus in the occipital lobe.

The first case is of interest on account of the disturbance of sight. It is a case of right lateral hemianopsia due to lesion of the left optic thalamus. The disturbance of speech is not explained by the lesions found. The disturbance of sensation, anæsthesia with analgesia, and the partial loss of motor power, were probably caused by pressure of the tumor upon the posterior part of the internal capsule. It is quite possible that the tumor may have implicated the sensory tract in that portion of the internal capsule. The deafness may have been caused by the lesion of the above sensory region, otherwise it is not explained by the autopsy. The fact that the loss of sight increased, the left eye became entirely blind, the right nearly so, would be reason for considering the left optic thalamus as the original seat of the tumor, and as it increased in size it extended to the right optic thalamus and the right anterior corpus quadrigeminum.

It is to be regretted that Dr. Gannett did not receive the brain in a more perfect condition, but the examination he was able to make is well described, and nothing has been assumed beyond that which the brain showed.

CASE I. Headache, attacks of unconsciousness, right hemiplegia, right hemianopsia, right hemianæsthesia, with hyperalgesia, disturbance of speech, left amblyopia; tumor in region of optic thalami and corpora quadrigemina.

C. M., aged thirty-two, seen in April, 1882, was said to have had headache for many years, sometimes very severe, so that he would walk the floor groaning; between these severe attacks, which occurred once in three or four weeks, his head would be easier, but not entirely free. He had always drank more or less spirit, and at the time his illness began, in September, he had drank more than usual. In September he complained of being unusually tired and weary, and was restless at night, waking often and complaining of being tired. Some weeks later, perhaps in November, he had attacks of loss of consciousness, generally once a day; these continued till about January. During this time he had trouble with his head, rather different from his former disturbance. After November, exactly the date was not remembered, he complained of numbness in his right foot, and later, in his right hand. This numbness increased, and gradually he lost skill in the use of his limbs, wrote poorly, so that



The fibres of the optic nerve partially decussate in the optic chiasma (c); so that those passing from the right side of the brain (a) supply the right half of each eye (a'). The rays of light from an object to the left of the median line will fall on the right half of each retina, and the impressions thus produced will be carried through the optic nerves (o, o') and the right

his hand-writing was scarcely legible. In January the attacks of unconsciousness ceased, and in their stead he had distressed spells. One of the attacks of unconsciousness was seen by his physician. Mr. M. said he was about to have an attack; his eyes changed their expression, and he soon slowly rotated his head to one side, then to the other, then began to swallow; this continued two or three minutes. He then sighed, and soon after recovered consciousness; was slightly confused; had no increase of distress in head afterwards. After January the attacks were without loss of consciousness, there being simply general distress, during which he did not wish to be touched; his wife said he looked as if he were about to die. He had from three to six a day. Six weeks before he was seen, one of these attacks was so severe he was put to bed; he did not get up again to stay up. At that time he had lost most of the motor power in his right arm and leg; he could walk only with difficulty; said he was dizzy, but seemed to stagger from weakness of the right leg, rather than from vertigo. After he was confined to bed, during the six weeks, he was much of the time free from headache, had only two or three severe attacks, and for four or five weeks had had no attacks of distress. Just before he took to his bed he began to have right lateral hemianopsia, vision being lost for objects on the right of the median line. During the six weeks the strength in his right leg did not vary much. It could be moved a little; the right arm varied, some days being moved better than on others.

His wife said that, even early in the disease, he had trouble in talking, using the wrong words, miscalling the names of his friends, and sometimes he was scarcely to be understood. When he wished to have the right arm moved, he asked his wife to bring him the fly-paper and put it on the bed. At times he swallowed slowly. Bowels generally regular, but for a few days he had had small involuntary motions. Micturition was normal.

When seen the right pupil was larger than the left, but both reacted to light; the right eye opened wider than the left, and did not quite close; both eyes moved naturally. There was loss of vision for objects to the right of the patient in both eyes — right lateral hemianopsia; there was partial facial paralysis on the right. The tongue protruded straight; he swallowed without trouble. His right hand was almost motionless, though he could close the fingers when flexing the arm. There was no contraction; the right leg could be moved and raised from the bed, but less strongly than the left. Sensation was diminished throughout the right side, but there was hyperæsthesia to pricking, scratching and pinching, the sensation being very unpleasant. Hearing was much diminished on the right. The plantar, cremaster, and abdominal cutaneous reflexes were absent on the right, well marked on the left. Tendon reflex was well marked, perhaps rather exaggerated on both sides. Ankle clonus was well marked on the right, absent on the left. There was no tremor. The ophthalmoscope showed the arteries small, the veins large, but the discs were not essentially changed from normal. The pulse was 84, small, and feeble; the heart-sounds faint; no murmur.

About a month later the report was that he mixed names more; speech had somewhat improved. He had had pain in the left temple, had had photophobia

in a bright light, had been entirely blind in the left eye, had great general hyperæsthesia.

June 5th. He had sinking spells, panting for breath. This lasted long, intelligence diminished constantly, and he took less notice of his surroundings. The left eye was totally blind, and vision in the right eye was dull.

June 10th. Coma, which deepened, and from the 12th he showed no sign of consciousness. He could not swallow. There was no marked paralysis of the upper branches of the seventh nerve, no conjugate deviation of the eyes; the paralysis was not changed, except to become more complete. As he passed into coma, the temperature rose to 103°, and a short time before death it was 102½°; the pulse was 160 or more, very feeble.

An autopsy was made by a neighboring physician, and the brain was sent to Dr. W. W. Gannett, who has furnished the following description: The brain "was rather soft, but still in sufficiently good condition to enable one to say that the cortex and white matter, as well as the membranes, were in a normal condition so far as gross appearances were concerned. The interesting portion was the basal region, but this, unfortunately, had been cut so irregularly that it was very difficult to get the exact relation of the parts. Putting the parts together as well as I could, the condition was about as follows: The posterior inferior part of the right optic thalamus in the immediate neighborhood of the corpora quadrigemina was occupied by a nodule about the size of a filbert meat, of a red color and rather soft consistency. The anterior corpus quadrigeminum on the right was probably implicated. This nodule was shown in section, on a cut which had been made antero-posteriorly and vertically about the middle of the pons. What I take to be the left optic thalamus was occupied through its whole middle and posterior portion by a red, soft mass, like that seen in the right thalamus, and which was probably continuous with the latter. Altogether, the mass must have been the size of a small plum.

"On microscopic examination, the nodule was found to be made up of medium and large-sized cells, with single, well-marked nuclei; the form of the cells was either a long oval or spindle shape. They were exceedingly numerous, lying in close contact, and no interstitial substance could be made out. There was an abundant development of large and small bloodvessels, and also evidence of earlier small hemorrhages into the mass. The mass represents a sarcoma of a very vascular variety, and, judging from the appearance of the cells, I should say of a tolerably rapid growth.

The second case is remarkable for the large number of tumors in the brain substance. Thirty-two were counted and most of these located, varying in size from the sixteenth of an inch to an inch and three-quarters in diameter. It is useless to refer special symptoms to any one tumor, yet it is of interest to note, in relation to the loss of sight that both occipital lobes contained rather large tumors; and on the left the internal capsule may have been injured in its motor tract, either by pressure or by the destruction of its fibres by one of the growths.

As in other cases of melanotic growths the tumors were found in other organs, the bronchial glands, mesenteric glands and in the intestines.

CASE II. —, aged thirty-two, had enjoyed perfect

health so far as known by himself and friends, until about eight years ago, when he had rheumatic fever, from which he fully recovered. October 19, 1881, he first noticed slight dimness of vision with pain in his eyes, which was increased by any attempt to use them. About two weeks later he felt pain in the back of his head and neck, from which he suffered more or less until about the first of December; the pain then abated leaving a feeling of distress in the same region. He was unable to fix his mind on any subject or follow on any train of thought, was easily fatigued, unsteady in his gait, and complained of a general feeling of weariness and weakness of the legs.

About the first of December his left eye was seriously affected, the right was less so: this was supposed to be due to partial loss of accommodation. About the middle of December he began to have attacks of vomiting without nausea; these occurred once in four or five days until January 27th, when Dr. Gilbert was called to see him, he having vomited fifteen or twenty times. He had then practically lost the sight of his left eye, and the field of vision was quite limited in the right. His mind was clear but weak, he then suffered no pain; temperature and respiration were normal, pulse 65. During the afternoon an attack of singultus began which continued about twenty-four hours; similar attacks recurred at intervals during the next three weeks, but less violent. The urine was normal, contained neither albumen nor casts.

During a part of December and January he was obliged to keep his bed, during a part he was up and even went out to ride; he had difficulty in walking, staggering.

I saw him January 29, 1882. At times his speech was defective; his headache less intense, but from the motion of his head and from his putting his hand to his head, it was probable that he still had some discomfort. He talked with difficulty, was languid and apathetic.

The left eye was a little more prominent than the right, there was a slight nystagmus, the face showed a slight loss of tone on the right, though there was no paralysis; the eyelids closed well on both sides, the tongue was protruded straight. The right arm and leg were weaker than the left. He staggered on standing and required support. There was extensive hemorrhagic retinitis in both eyes, the discs being obscured and the vessels showing only in a part of their course; there was not much difference between the two eyes.

The diagnosis was tumor, probably in the cerebellum, and it was thought most probable that the middle lobe was involved and that there was pressure upon the left side of the medulla oblongata.

Mercurials and iodide of potassium were given and he improved for about a week, he then vomited and was much worse for a few days; with slight remissions and occasional exacerbations he grew steadily worse till he died.

About February 5th or 6th he became totally blind. February 17th and 18th he was nearly if not quite unconscious, breathing was labored, he took no food and could scarcely be aroused sufficiently to swallow a few spoonfuls of water. On the evening of the 18th he began to improve, slept well that night and the next day was quite rational and talked much. On February 15th, he began to pass his urine involuntarily. February 21st his hearing began to fail,

and after a little he became totally deaf. On the 24th he had another ill turn, was unable to swallow, scarcely moved his right side; his head was turned to the left and his eyes were directed upward and to the left, the pupils widely dilated, the left more than the right, there was slight divergent strabismus. He was quite unconscious, breathing heavily and irregularly. In the evening he began to regain consciousness and for the next three days was brighter, especially in the morning. February 25th he talked much, but was so deaf that it was very difficult to make him hear. He sweat profusely for two hours. There was almost complete anesthesia of the right cheek, the sensitiveness of the left was much diminished, but he was quite sensitive about the lips and eyes. Temperature and respiration were about normal, pulse varied from 65 to 72. After this for three or four days he was more conscious, talked considerably, relished his food, slept much of the time. For ten days he again was nearly unconscious, noticed nothing, the conjugate deviation of head and eyes mentioned above still persisted, there was nystagmus, the eyes did not, however, pass to the right of the median line. March 17th to April 3d he was again partially conscious, seeing and hearing nothing, he knew no one and imagined himself away from home. Smell and taste were very acute, he was aware that he was blind, but did not realize that he was totally deaf.

He had another febrile attack with increasing stupor, pulse running up to 160, respiration 56, and temperature 101°. From this he revived, pulse going down to 76, respiration and temperature to normal, and he again talked much. At this time the head and eyes, instead of being turned persistently toward the left, as they had been for weeks, resumed their normal position and action, the pupils were still largely dilated, and the right more so than the left. This condition continued for thirty-six hours, when they were again turned towards the left and remained so till death; the pupils varying, generally dilated. April 17th he began to fail again, and May 5th he died.

Autopsy. Body very much emaciated; skull very thin, inner table very rough with many sharp spicules projecting inwards, there was scarcely any diploe, and in several places there was entire absorption of the inner table. The veins of the dura mater were quite full. Pachionian bodies moderately prominent; there was a soft clot in the longitudinal sinus; veins of the pia mater were very much distended. On both sides of the longitudinal fissure just anterior to the fissure of Rolando, the pia mater was thickened and yellowish-white in color. This on being removed did not bring with it any cortical substance. The convolutions were well filled and the sulci not prominent as seen through the pia mater.

Throughout the substance of the brain were scattered a large number of small tumors, of a dark, almost black color, but on section somewhat mottled, if large, irregularly lobulated. Under the microscope these were seen to be composed of round, fusiform or eucate cells, rather small, generally filled with pigment, only loosely connected together by a very small amount of connective tissue, the masses were very rich in bloodvessels.

The locality of these tumors was as follows: In the left hemisphere, directly opposite the extremity of the fissure of Sylvius on the surface of the supra-marginal

gyrus, was one three-quarters of an inch in diameter; just at the point where the perpendicular fissure comes to the upper convex surface was one lying rather deep, and nearly concealed by the overlying brain substance; in the longitudinal fissure posterior to the perpendicular fissure was one one-fourth inch in diameter; at the extreme end of the occipital lobe, on the under surface near median fissure, was one with a lobular conformation one and one-half to one and three-fourths inches in diameter; around this the cerebral tissue was more softened than elsewhere; near the middle of the parietal convolution was one three-fourths inch in diameter, covered by cerebral tissue; near the junction of the second and third temporal convolutions, in the third and near its middle longitudinally, was one about one-fourth inch in diameter; just to the left anterior part of the left olfactory nerve was one one-fourth inch in diameter; under this nerve was a very small one one-sixteenth inch in diameter. In the right hemisphere, within the median fissure in the occipital lobe, was one nearly an inch in diameter; a little below this, at the extreme posterior extremity of the occipital lobe, three-quarters of an inch from the under surface, was one three-fourths inch in diameter; on the under surface, near the tentorium, there were two, each about one-fourth inch in diameter; a small tumor, one-sixteenth inch in diameter, in the pineal gland.

The membranes in the fissure of Sylvius and around the optic chiasm were rather thickened and matted together. The bloodvessels at the base were pervious and healthy.

Scattered through the interior of the right hemispheres from vertex to the level of the lateral ventricle there were ten tumors, varying from one-twelfth to one-half inch in diameter. On the left side in the same region there were six. On the right side, in posterior part of the tail of the caudate nucleus, projecting slightly into the lateral ventricle, but covered by a thin layer of cerebral tissue, was a tumor one-half inch in diameter; the surrounding cerebral tissue was softened. In the anterior portion of the lenticular nucleus, near its upper surface, extending across the external capsule to the claustrum, was one one-half inch in diameter. On the left side, about the centre of the caudate nucleus, projecting into the internal capsule, was one one-half inch in diameter; rather above this, in the lenticular nucleus, was one one-eighth inch in diameter. On right side, in middle of cerebellar peduncle, just above the point of exit of the fifth nerve, was one one-half inch in diameter; in the left lobe of the cerebellum, near its outer surface, were two, one below, the other above, both one-half inch in diameter. The right lobe was free.

The base of the skull presented a similar appearance to the calvarium in roughness and absorption of inner plate.

Thorax: pericardium was universally adherent; the two pleural cavities contained about six ounces of clear fluid. The left lung was healthy, but at the base, near the entrance of the bronchus, a bronchial gland presented a melanotic appearance. The lower lobe of the right lung was solidified in its posterior part; contained no air. Heart and its valves were healthy; the right cavity contained soft coagula. Walls of the heart were very firm.

Abdomen: liver and spleen were both abnormally small and firm, the latter measuring two by one and one-half by one-half inches. Kidneys were small, but

healthy. Stomach presented only post-mortem changes. Some of the mesenteric glands were enlarged, and, on section, had a dark color, resembling the tumors found in the brain. About a foot below the stomach was an invagination of the intestine, estimated to be about ten inches long, and about a foot below this was another about six inches long. There was no swelling and no marked congestion around these invaginations. In the shorter portion of intestine thus invaginated was a small, pedunculated, melanotic tumor, about one-half inch in diameter.

In the third case there was left hemianopsia. The left hand showed great loss of coördination. Gowers has given a drawing of a tumor just beneath the corpora quadrigemina, which he considers was the cause of a similar incoördination. This locality would explain the hemianopsia, and also the paralysis of the motor nerves of the eye.

The spasm of the right arm was described as if of cortical origin; it was a simple case of monospasm. The seat of the lesion causing this spasm must have been in the cerebral hemisphere, not in the mesencephalon, for there was conjugate deviation of the head and eyes to the right, towards the side affected with spasm. The law in regard to conjugate deviation is that in lesion of the hemispheres the deviation is toward the affected hemisphere in paralysis; as it has been said, the patient seems to be trying to look at the injury. In spasm the deviation is towards the unaffected hemisphere, towards the limbs which are convulsed.

If, then, the report given me of the side affected with spasm was correct, and I think it was, there must have been two centres of disturbance: one in the cortical motor centre for the arm on the right, which was not sufficient to cause paralysis; a second in the vicinity of the anterior corpus quadrigeminum and pulvinar, giving rise to the other symptoms.

As there was the history of former tubercular disturbance in the lung, it is probable the lesion was tubercular, and we know that such tumors in the brain may be multiple. There was no autopsy to confirm this diagnosis.

CASE III. Mrs. W. was seen with Dr. J. W. Willis. Her former physician said that she had lung trouble, and this opinion was confirmed by Dr. E. H. Clarke. She went to California, where she seemed to have recovered, and recently the lungs had given her no trouble.

She was married December, 1881. In February or April, 1882, she had a spasm of the right arm, which drew up. Then she lost consciousness. There was no other spasm until April, 1887, then in May, and on July 31st of the same year she had other spasms of the right arm. She saw the arm draw up, there was a sensation as if the fingers were being torn out, then she lost consciousness. She bit her tongue and her head turned to the right, and her eyes to the right. There was conjugate deviation of head and eyes to the right. She was very nervous lest she should have another attack.

After July, 1887, she took less interest in what occurred about her. Her mental condition changed in a way that it was difficult to describe. She was rather apathetic, indifferent to her surroundings, and this condition grew gradually more marked.

About Thanksgiving she had headache. She did not have this previously. The pain became more in-

tense. She was dizzy, was weak during two or three weeks before I saw her. During the previous two days there was diplopia.

When seen there was external strabismus, the notes do not say of which eye. The left side of the face acted less readily than the right, the left eye was more widely open, and the left pupil responded less readily to light. The tongue was protruded straight. Hearing was seemingly less acute on the left, but at times she was not easily aroused, and the observation might not have been accurate on that account. There was left hemianopsia, the line of demarcation passing through nearly the centre of the visual field.

The grasp of the hands seemed about equal on the two sides; but there was great loss of co-ordination on the left, that hand moving in a very disorderly way when an attempt was made to touch the nose with the eyes shut. Sensation seemed equal on the two sides. The superficial and deep reflexes of the legs were equal on the two sides.

The next case is allied to the last by the spasm. It differs from the two previous cases in there being no disturbance of sight, and it is probably not a case of tumor. Fortunately, the improvement has been so great that there is no probability of death at present.

This is a typical case of localized irritative lesion of the cortical motor centre, progressing to partial destruction, or at least abolition of function, with subsequent recovery. The gradual extension of the pathological process from the centre for the feet near the median fissure, down both sides of the central fissure, as the arm and body, then neck and face became involved, can be distinctly recognized by the extension of the symptoms to those parts of the limbs and body.

The improvement is encouraging and instructive. Having decided as to the locality and probable nature of a lesion and the possibility of relief, we should persistently follow the course indicated even when there is seemingly no immediate gain. In one other similar case I have found benefit from large doses of iodide of potassium and mercury where it seemed that death must be close at hand. The spasms, beginning in the face and extending to the arm, then to the leg, recurred every three minutes for many hours. The patient recovered from that attack, but subsequently died.

CASE IV. Miss H. was seen early in November. She was past the climacteric. She had fairly good health until four years previous to visit, when she had some anxiety about one of the family. The first disturbance to attract attention was a twitching of the left leg; then she became unconscious. Her head and eyes were turned to the left (left conjugate deviation of head and eyes).

For a long time, how long was not known, there was no symptom, then she had at times a slight drawing sensation in the left ankle. Later this extended to the left leg, then to the left thigh. At times the left leg moved spasmodically. There was at these times no loss of consciousness, no pain, no loss of sensation. The phenomenon was purely motor.

Still later the same spasm affected the left arm, and recently the left side of body and the left side of neck and face. There were no general convulsions. Lately there had been pain in the left leg, a heavy aching, though sometimes severe pain. There was also some numbness.

The left hand and arm had always been smaller than

the right. The left leg was one-eighth inch smaller round than the right. The patellar tendon reflex was the same on both sides. Sensation was about the same on both sides.

She could not use her left hand readily. She dragged her left leg, and walked lame. The eye, pupils, tongue and face moved naturally. She was intelligent. Her mind seemed fairly active.

The diagnosis was clearly some irritation of the motor centres in the cortex. The symptoms did not point to a tumor. There were none of the general symptoms of tumor present. A localized chronic meningitis would explain the symptoms. Acting on this theory I advised iodide of potassium in large doses, with moderate doses of bromide of potassium.

Dr. Julia Tolman took charge of the patient, and I am indebted to her for the subsequent history of the case.

After nearly four weeks the pain was less, sleep was better, the spasms of wrists and ankles, which had recurred frequently, had ceased. There was much more loss of power in the arm and leg. The patient stumbled often in walking, and had more difficulty in raising her foot from the floor. She could not raise her hand to her neck. The patient was at that time taking twenty-five grains of iodide potassium and twenty grains bromide of potassium three times a day. Her friends objected to her taking large doses because they were afraid the loss of power might be caused by the medicine. Yet they had been expressly warned that the disease would lead to such loss of power.

A short time after a slight oedema of the legs appeared, but the urine was free from albumen. Iodide of mercury was given for a short time with the iodide potassium. Fifty-three grains three times a day of the latter seemed to slightly disturb the stomach, so the amount was reduced to thirty-five grains.

About two months after she was first seen the paralysis was steadily increasing. There was no pain. The mind seemed less clear. Sometimes she seemed rather stupid.

In February she began to improve. Could use her hand a trifle better, could walk better. She had grown stouter. Her general health was good. At that time she was taking from forty-five to fifty-three grains of the iodide and fifteen of the bromide three times a day.

Towards the end of May the report is very favorable. There had been a decided improvement during the previous two months. She could walk fairly well without support, dragging the left foot a little. The hand, which was for a time absolutely powerless, could be extended and flexed a little, and raised nearly to her shoulder. A feeling of constriction about the waist, distension of bowels and incontinence of urine, which had been somewhat troublesome, had entirely disappeared. She still continued forty five to fifty grains of the iodide of potassium.

— Professor Billroth, who led the opposition, a few years ago, to the admission of women to the continental medical schools, has created something of a sensation in Vienna, it is reported, by having Dr. Grace Wolcott and three other American women physicians repeatedly in attendance at his private clinic lately, to witness his own operations. — *Med. and Surg. Reporter.*

REPORT ON PROGRESS IN SURGERY.¹

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

LAPAROTOMY FOR ACUTE INTESTINAL OBSTRUCTION, WITH ABSTRACTS OF 69 CASES.

ROCKWELL¹⁸ has made a careful analysis of 69 cases, and finds the mortality in the decade between 1877 and 1887 is 4½%, or a gain on the statistics previous to 1873 of 27%, and "this in spite of the fact that nearly two-thirds of the fatal cases were operated upon at a time which would almost necessarily preclude successful results."

Dividing these cases into groups, according to cause, and giving the mortality, we have:

	Recoveries.	Deaths.	Total.
Intussusception	6	5	11
Bands or adhesions . . .	14	19	24
Volvulus	3	4	7
Biliary or intestinal calculi .	1	3	4
Diverticula	9	4	4
Unclassified	13	6	19

Again, we must insist that the time has come when an early exploratory laparotomy in these cases is imperative.

MYXEDEMA.

The Committee of the Clinical Society of London have made a report,¹⁹ of which the following are the conclusions:

- (1) That myxœdema is a well-defined disease.
- (2) That the disease affects women much more frequently than men, and that the subjects are, for the most part, of middle age.
- (3) That clinical and pathological observations respectively indicate, in a decisive way, that the one condition common to all cases is destructive change of the thyroid gland.
- (4) That the most common form of destructive change of the thyroid gland consists in the substitution of a delicate fibrous tissue for the proper glandular structure.
- (5) That interstitial development of fibrous tissue is also observed very frequently in the skin, and with much less frequency in the viscera, the appearances presented by this tissue being suggestive of an irritative or inflammatory process.
- (6) That pathological observation, while showing cause for the changes in the skin during life, for the falling off of the hair and the loss of the teeth, and for the increased bulk of the body, as due to the excess of subcutaneous fat, affords no explanation of the affection of speech, movement, sensation, consciousness, and intellect, which form a large part of the symptoms of the disease.
- (7) That chemical examination of the comparatively few available cases fails to show the general existence of an excess of mucin in the tissues adequately corresponding to the amount recorded in the first observations, but that this discrepancy may be in part attributed to the fact that tumefaction of the integuments, although generally characteristic of myxœdema, varies considerably throughout the course of the disease, and often disappears shortly before death.
- (8) That in experiments made upon animals, particularly on monkeys, symptoms resembling in a very close and remarkable way those of myxœdema have followed complete removal of the thyroid gland, per-

formed under antiseptic precautions, and with, as far as could be ascertained, no injury to the adjacent nerves or to the trachea.

(9) That in such experimental cases a large excess of mucin has been found to be present in the skin, fibrous tissues, blood, and salivary glands; in particular, the parotid gland, normally containing no mucin, has presented that substance in quantities corresponding to what would be ordinarily found in the sub-maxillary gland.

(10) That the full analysis of the results of the removal of the thyroid gland in man demonstrates in an important proportion of the cases the fact of the subsequent development of symptoms exactly corresponding to those of myxœdema.

(11) That in no inconsiderable number of cases the operation has not been followed by such symptoms, the apparent immunity being in many cases probably due to the presence and subsequent development of accessory thyroid glands, or accidentally incomplete removal, or to insufficiently long observation of the patients after operation.

(12) That, whereas injury to the trachea, atrophy of the trachea, injury of the recurrent laryngeal nerves, injury to the cervical sympathetic and endemic influences have been, by various observers, supposed to be the real causes of experimental or of operative myxœdema (cachexia strumipriva), there is, in the first place, no evidence to show that, of the numerous and various surgical operations performed on the neck and throat, involving various organs and tissues, any one save those in which the thyroid gland has been removed, has been followed by the symptoms under consideration; that in many of the operations on men, and in most, if not all, of the experimental operations made by Professor Horsley on monkeys and other animals, the procedure avoided all injury of surrounding parts, and was perfectly aseptic; that myxœdema has followed removal of the thyroid gland in persons neither living in, nor having lived in, localities the seat of endemic cretinism; that, therefore, the positive evidence on this point outweighs vastly the negative, and that it appears strongly proved that myxœdema is frequently produced by the removal, as well as by the pathological destruction of the thyroid gland.

(13) That whereas, according to clause 2, in myxœdema women are much more numerously affected than men, in the operative form of myxœdema no important difference of the same kind is observed.

(14) That a general review of symptoms and pathology leads to the belief that the disease described under the name of myxœdema, as observed in adults, is practically the same disease as that named sporadic cretinism when affecting children; that myxœdema is probably identical with cachexia strumipriva; and that a very close affinity exists between myxœdema and endemic cretinism.

(15) That, while these several conditions appear in the main to depend on, or to be associated with, destruction or loss of function of the thyroid gland, the ultimate cause of such destruction or loss is at present not evident.

CANCER AND CANCEROUS DISEASES.

Paget, in an extremely interesting and suggestive article,²⁰ calls attention to the likeness existing between cancers and innocent tumors on the one hand,

¹ Concluded from page 249.¹⁸ Ann. of Surg., Feb., 1888, p. 81.¹⁹ Lancet, June 2, 1888.²⁰ Lancet, Nov. 19, 1888.

and specific and micro-parasitic disease on the other. Paget believes that as it is now demonstrated that every specific disease is known to be the result of some distinct morbid substance, that we shall eventually find that there is some micro-parasite or substance that is essential to the production of cancer. Further he considers that cancer is allied to the group of specific disease, including syphilis, tuberculosis, glanders, leprosy, and actinomycosis. They are all essentially morbid growths, self-maintaining; have special modes of degeneration and of ulceration, to which they all tend; are all at some time either infective to parts far off by transmission of particles through lymphatics or bloodvessels, or to adjacent parts by invasion, or to other beings by inoculation; they all occur in parts, by preference, subject to local injury or irritation. These he considers are strong likenesses, and as we know that in tuberculosis, syphilis, and leprosy, there is in each case a specific morbid material in the blood, so we should believe that there is one in cancer. Sir James Paget, in concluding this admirable lecture, believes that we may reasonably hope for a remedy against cancer, as mercury and quinine are against syphilis and malaria.

GRAFTING.²¹

Surgeons are familiar with skin grafting in the human subject, but it is rather a novel procedure to substitute the skin of birds and poultry for snips from the patient's own healthy skin. Wiesmann twice transplanted skin from pigeon to pigeon with success and three times from fowl to fowl. Under the title of *Dermepenthesis*, Mr. G. F. Cadogan-Masterman published some interesting cases in which he had succeeded in utilizing the skin of young wild rabbits for the purpose of bringing about the cicatrization of raw and ulcerating surfaces. Several others have repeated and varied Wiesmann's experiments, but before Mr. Masterman none of them seem to have been enterprising enough to spare their patients the disagreeable snipping incidental to the operation as it is usually practised. At about the same time Dr. Redard communicated to the Paris Academy of Medicine some observations of his own with animal grafts on wounds in human beings. In a case of severe burn of the scalp of eight months' standing, in a child two years of age, he obtained rapid cicatrization by means of grafts from a fowl. He first tried grafts of frog's skin, but as these proved to be repulsive to patients, and did not give very good results, he substituted others from the fowl, and the wound, which measures three inches by two and a half, had completely healed in two months. He had been equally successful in other and subsequent cases. He takes the skin from beneath the wing of a chicken, carefully securing the subjacent cellular tissue, but avoiding adipose tissue. The transplanted pieces varied from a sixth to a third of an inch in size, and they were maintained in position by means of a little cottonwool and iodoform gauze. The skin of birds and fowls has the advantage of being supple, delicate and vascular; it adapts itself readily to the surface of the wound, and adheres without undergoing absorption.

Senor F. Altramirano mentions in a Mexican journal, *El Observador Médico*, a case in which he made some experiments in skin grafting on an obstinate ulcer left by a large carbuncle.²² More ordinary means

having failed to cause it to heal, he applied three skin grafts taken from the patient himself. Of these only one took, and the man expressed so much repugnance to the proceedings that another source had to be found for subsequent grafts. A cock was selected and fragments cut from his gills; these were split, divided into ten pieces, and the raw surfaces applied to freshened portions of the ulcer. A carbolized dressing was then bandaged on, the whole being constantly moistened. On the third day, on the dressing being removed, all the ten fragments were found organically adherent. A number of new grafts were then applied, cut from the comb, the gills, and the skin of the back of a chicken. None of these were successful. The cock's gills were again resorted to, and four more fragments successfully grafted. A fresh set of grafts were prepared from this source; but all the cellular tissue was cut or scraped away, in some cases little but the epidermis being left, in others the edges being bevelled, so that the epidermis was in direct contact with the new surface of the ulcer. This set of grafts proved very unsuccessful, so that Dr. Altramirano was led to the conclusion that no advantage is gained by applying the epidermic layer immediately in contact with the surface of the ulcer.

STERILIZED DRESSINGS.

Schlange's²³ experiments led him to believe that the ordinary dressings "aseptic" are not so. Blood and albuminous fluids render inert sublimate dressings. Soaking in boiling water or a sufficiently strong sublimate solution, and immediately applied, is truly aseptic, but such wet dressings have numerous disadvantages, for example, prevention of evaporation of wound secretion, tendency to produce eczema, hence applicable only in suitable cases. Routine dressings must be dry, as ordinarily prepared dry dressings contain infectious germs. Hence sterilized dressings are substituted prepared by von Bergmann as follows, and used exclusively by him with admirable results. The raw material, cut as desired, is exposed in a wire basket in an oven, to superheated steam for one hour; after removal and drying for a minute, the basket, with untouched contents, is put in an iron cylinder, from which the gauze is withdrawn as required. This secures with the minimum of handling an absolutely germ-free material. Schlange thinks that the speedy and undisturbed evaporation of wound secretion important for the healing of wounds. Decomposition of blood or discharges in a sterilized aseptic dressing is only possible from the action of germs alighting on its surface; mere staining twenty-four hours after an operation of the superficial layers, does not require renewal. No risk involved if evaporation is favored by patient's position, etc. Extensive soaking of dressing require renewal of superficial layers; deep layers beginning to dry should be left undisturbed.

DISINFECTION OF SURGICAL INSTRUMENTS AND DRESSINGS.

Renard,²⁴ in an elaborate article, finds that the disinfection of instruments by a five per cent. solution of carbolic acid is unreliable, the germs withstanding a soaking of from thirty to forty-five minutes. Bichloride is reliable, but has a chemical action on the instruments. Flaming, if thorough, is efficient. Boil-

²¹ Brit. Med. Jour., Feb. 18, 1888.

²² Lancet, May 19, 1888.

²³ Archiv. f. Klin. Chir., Vol. XXXVI, 1888.

²⁴ Revue de Chirurgie, No. 6, 1888.

ing at 212 F. is efficacious, if long continued. Steam at 230 F. destroys all germs, if the substance be submitted to it for thirty minutes. Renard has a copper cylinder boiler that he fills about an eighth full of water; baskets containing instruments, and provided with feet that raise them from the surface of the water, are put in the cylinder, a lid containing a manometer and a safety-valve is screwed in place, and by means of an alcohol lamp the water is boiled, the air in the cylinder passes off by a stop-cock in the lid, which is then closed, and the pressure is increased until it represents a temperature of 230 F. Absolute disinfection is obtained in a half of an hour. Sponges are not subjected to this temperature, and instruments are never subjected to a temperature of more than 245 F. He draws the following conclusions:

(1) Disinfection by steam compressed at 230 F., as applied in the apparatus above described, is certain and practical.

(2) Instruments or dressings submitted to this treatment for fifteen or twenty minutes are absolutely disinfected.

(3) The apparatus is very simple, not dangerous, and can be trusted to a nurse.

(4) Neither dressings nor instruments are in any way altered by a prolonged treatment, if the temperature does not exceed 230 F.

DRESSING FOR CIRCUMCISION IN ADULTS.

Ballance²⁰ describes his method of dressing the penis as follows:

When the patient is etherized, the outline of the posterior border of the glans is marked on the skin with an aniline pencil. The skin of the prepuce is slit and removed up to the aniline line. The mucous membrane is next cut away, leaving only a free edge of about one-eighth of an inch in width. Any bleeding which occurs should be entirely arrested, and asepsis must be insured by frequent sponging with carbolic or sublimate solutions. Numerous horsehair stitches are then inserted, so as to bring accurately together the fresh-cut edges of the skin and mucous membrane, and subsequently, after a further sponging and drying, a piece of gauze two layers in thickness, and wide enough to reach from the root of the penis nearly to the meatus, is wrapped loosely round the penis, and secured by several applications of the collodion brush. The setting of the collodion is hastened by the use of a fan, so that the air is kept in motion, and the patient should not be allowed to recover from the anæsthetic till the dressing is quite firm and hard.

In this manner the penis is protected by a kind of carapace, and the patient is relieved from the pain and tenderness attendant upon contact with the bed-clothes or other objects. In fact, the organ can be handled as if no operation had been performed. It is hardly necessary to add that erections, which are under the usual conditions so painful, cannot occur.

The patient never had any discomfort from first to last, and the day after the operation put on his trousers without my leave, and expressed himself as desirous of taking a long walk or of going to business.

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²⁰ St. Thos. Hosp. Reports, Vol. xvi, p. 138.

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Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

REGULAR MEETING, Tuesday, June 12, 1888, at 19 Boylston place.

In the absence of the regular chairman, on motion of Dr. T. DWIGHT, DR. JAS. S. GREEN was made chairman, *pro tem*.

DR. THOMAS DWIGHT exhibited

A PLASTER MODEL OF THE ARM,¹ made from actual specimens, and divided into seven-
teen sections.

¹ See page 245 of the Journal.

APPARATUS FOR THE STERILIZATION OF INFANT FOOD.

DR. ROTCH presented for the inspection of the Society an apparatus devised by him, by which the infant's food could be given to it sterile, as from the human breast. He remarked that the approach of the warm season made it our duty to adopt every means within our power to prevent the onset of, and to treat when they appeared, those gastro-intestinal disturbances which so frequently were the cause of the high rate of mortality among artificially fed infants. Sterilization of the food was an important addition to our knowledge of such means, and should be given a careful trial. Sterilization as yet had not been so fully adopted in this country as in some parts of Germany, notably Munich, where Professor Soxhlet's apparatus for sterilizing milk was being used in over a thousand families.

Professor Soxhlet has for some years been making investigations of this nature, and his results, and a wood cut showing his apparatus, were published in the *Münchener Medizinische Wochenschrift*, Nos. 15 and 16, 1886. Soxhlet's apparatus, however, although for bacteriological purposes good, is not so useful clinically as it might be; and Dr. Rotch then explained that sterilization was but one factor in having the infant properly fed, and that a proper receptacle for the administration of the food must satisfy the other factors as well as that of sterilization. Quantity was one of these important factors, the infant's stomach growing very rapidly in the first two months, and coming to a comparative standstill in the next three months, thus necessitating a rapid increase in the bulk of the food during the first two months, and very little increase in the next three months.

Dr. Rotch had his attention first drawn to the subject of sterilization by Dr. Ernst in the spring of 1887, Ernst at that time having treated a baby by that method. Dr. Rotch then devised the apparatus, which he considers to best combine all the factors of artificial feeding, in June, 1887, and his article describing his work in this direction, and giving illustrations of his feeding tubes and steamer, appeared in the *Archives for Pediatrics* in August, 1887, Soxhlet's apparatus at that time not being known to him.

During the autumn of 1887, Dr. Rotch also experimented clinically with his sterilizing apparatus during his service in the wards at the Infant Hospital.

The next work of the kind done in this country was that of Dr. Augustus Caille, of New York, who, following in the footsteps of Soxhlet, and guided by his article, investigated the proper manner of boiling and preserving milk for infants, and his investigations, published in the *Dietetic Gazette* for April, 1888, support the conclusion already arrived at by Soxhlet, Ernst, and others, namely, that milk became sterile when subjected to steam under pressure at 212° F. for from fifteen to twenty minutes. Caille has also had the Soxhlet apparatus made less complicated and more compact.

The next publication on sterilization was that of Dr. J. A. Jeffries, of Boston, in the May number of the *American Journal of the Medical Sciences*, 1888, and his work was more distinctly bacteriological, and was done in Dr. Ernst's Bacteriological Laboratory at the Harvard Medical School, with the same result so far as the length of time found to be necessary for steril-

ization was concerned, as that of the previous investigators.

Dr. Rotch then said that there were certain points to be noted for clinical purposes.

Where the food is prepared to be given immediately to the infant, one steaming for twenty minutes is sufficient, for we have then killed the developed bacteria; but where the food is to be kept for a number of days it was found that a second steaming was in most cases needed, in order that the spores should also be destroyed.

Dr. Rotch then went on to say that milk could in this way be sterilized and made use of where the infant has to travel for a period of weeks, or whenever a large supply for a number of feedings was desired.

Dr. Jeffries' experiments showed that bacteria were present in Anglo-Swiss condensed milk, and that hence this food should be sterilized as well as those prepared with ordinary cow's milk.

Dr. Rotch explained that his feeding tubes could be used for any of the infant foods, but he wished to draw attention to certain points regarding a combination of milk, cream, limewater and milk sugar which had, in varying proportions, been extensively used by him during the past three years, both in hospital and private practice. First, that this mixture turns brown when steamed, but that this change of color has been found to be innocuous to the infant, and does not contraindicate the steaming. Second, the mixture is decidedly alkaline, while human milk is faintly alkaline. Third, that steaming this mixture renders it neutral, the limewater entering into combination with a portion of the milk sugar, and hence that the limewater if used should not be added until after the rest of the mixture has been steamed.

DR. J. A. JEFFRIES: Dr. Rotch spoke of my work. I examined only one or two kinds of condensed milk. I should not like to say that the bacteria could always be found. I found two kinds, one of which is an ordinary bacterium in this part of the world, and might have got in by standing; and the other I found in moderate amount as a species that is totally distinct from any that has been seen before or since in the laboratory, so that it seems particularly clear that it was not contamination; so I think it rests upon pretty good ground that they do occur here.

As to sterilizing the milk, there are some interesting points. A German investigator has fed dogs, first, with ordinary milk or cow's milk, and then with a mixed diet, and then with sterilized milk, and has examined the feces for bacteria. When he gets down to the sterilized milk for a certain length of time he claims that the stools become like those of an infant, that is, yellow, and that the bacteria are for practical purposes limited to two kinds: one is the *brevis bacillus*, and the other one a *bacillus* which turns the sugar of milk into lactic acid in the absence of air, and seems to be peculiar to the intestines. It is not the same as the lactic acid bacillus, but a different species. These experiments seem to show conclusively that there is something in the sterilization. It seems to me that if we can thus change or prevent the putrefactive processes we shall accomplish a great deal.

DR. S. G. WEBBER read a paper on

CASES OF TUMOR OF THE BRAIN.*

DR. P. C. KNAPP: I have listened with very much

* See page 277 of the Journal.

interest to these cases of Dr. Webber. There are a great many points of value in them, especially to me. Among them, in the second case which Dr. Webber reports, were the tumors in the occipital lobe, as explaining the loss of vision. It is merely further proof of the views which Munck advanced some seven years ago now, that the centre for vision, as Dr. Webber has said, was in the cuneus and in the adjacent convolutions on the external surface of the occipital lobe. That view was combated most vigorously by Ferrier, who attacked Munck most sharply for having advanced the theory; but the evidence from human pathology, which has since been collected by Fillegreen (?) and by Seguin, has completely confirmed Munck's views, and the evidence from experimental physiology is also tending thoroughly in that direction. It need only be said that, since 1881, Ferrier has very largely abandoned his position, and, as far as could be expected, is endorsing Munck's views, but still holds that there are other centres; and I am surprised to see that Gowers, in his latest books, still upholds him in his views. Of course, in the case where there are so many tumors, it was doubtful, but it certainly points in the direction that all human pathology has furnished us in that regard.

The hour is getting so late that there is very little that I will say, except that I would like to speak of a case which I have had under observation for several months, which is very closely allied to this one of Dr. Webber. Some two or three months ago, I was asked by Dr. Sumner to see a case in his wards with history of syphilis, having come in with no definite symptoms, but very much depressed, and quite sure that he had some fatal disease — so much so, that he no sooner entered the hospital than he sent for a lawyer to make his will. After entrance he had several convulsions, which were regarded, not by Dr. Sumner, but by some of the other physicians who saw him in them, as hystero-epileptic. They were peculiar attacks, and consciousness was retained through them. I saw him in one of them later on, where consciousness was retained in part, and was told that he would have one whenever you spoke to him. There was conjugate deviation of the eyes and head to the left, with marked spasm of the left arm, and, in the later convulsions, in the left leg also; it began though, I think, in the arm, or possibly in the face, but it was only after he had had a number of convulsions that it extended to the leg. Immediately after the convulsion, the patellar reflex on the convulsed side was markedly exaggerated, and there was a paresis of the left side. During the convulsion there was an involuntary escape of urine. I at once made the diagnosis of some lesion in the cortex, affecting chiefly the centre for the arm and face in the right cortex, although I was unable to determine whether it was a tumor or some meningeal thickening, — some irritant lesion, and, of course, the question of an hysterical attack was settled definitely. Later on, the man had convulsions every fifteen or twenty minutes, became practically comatose, passed urine, and, I think, feces, in bed, and developed bed-sores, and about that time I feared that he was going to die. In fact, I made that prognosis, and advised the house-officers to tell his friends that probably he would not linger a great while. But I took the advice that he should be given iodides, although, his stomach being rather weak, he could not take them in very large doses — not

over thirty grains. Under iodide and mercury alternating, he has made now a very good recovery, and is up and dressed, walking about, with no convulsions, and only a little weakness on that side.

(To be continued.)

Recent Literature.

Operative Surgery on the Cadaver. By JASPER JEWETT GARMANY, A.M., M.D., F.R.C.S., Attending Surgeon to Out-door Poor Dispensary of Bellevue Hospital; Visiting Surgeon to Ninety-Ninth Street Reception Hospital, Branch of Bellevue Hospital; Member of the British Medical Association, etc. New York: D. Appleton & Co. 1887.

For the purpose for which this book was written, it is admirably adapted in its simple, well-written, and explicit directions. Occasionally the author has sacrificed detail in operative procedure to brevity in style. The absence of plates explanatory of the text is greatly to be regretted, for in teaching a manipulative subject like operative surgery, frequently a rude diagram is worth a whole page of text. We trust that a future edition will allow the correction of this important omission, for in other respects Dr. Garmany has given us an admirable work.

A Manual of the Operations of Surgery, for the Use of Senior Students, House-Surgeons, and Junior Practitioners. By JOSEPH BELL, M.D., F.R.C.S., Edinburgh; Consulting Surgeon to the Royal Infirmary, and Surgeon to the Royal Edinburgh Hospital for Sick Children. Illustrated. Sixth edition, revised and enlarged. Edinburgh: Oliver & Boyd. Tweeddale Court. London: Simpkins, Marshall & Co. 1888.

This work, which was written as a guide to the author's students in years gone by, has passed through six editions, and it is the author's purpose in the present edition to bring the work up to date. We do not feel that the author has accomplished this object, for numerous and glaring omissions of well-recognized operative procedures do not appear in this revised edition. Then, again, the author does not voice the current sentiment in regard to certain operative procedures, as, for instance, he slurringly refers to the use of the galvano-cautery, wire-snare, etc., for the removal of nasal polypi, as procedures which have been devised "greatly to the benefit of the authors' pockets." Some of his statements may be fairly regarded as coming from a man who is ripe in his own experience, and has ceased to be receptive of new ideas. Some twenty pages, for instance, are devoted to the consideration of lithotomy and lithotripsy. This is admirably complete, but when such a well-recognized procedure as litholapaxy is dismissed in a footnote, we cannot consider that the author has brought his work up to date. For the old, classical operation, the description is at once not only clear in diction, but forcible in the impressiveness of the style adopted by the author.

The chapters on tenotomy and operations on nerves are lamentably scanty. The work doubtless is well adapted to the needs of the students who have passed under Mr. Bell's instruction, but for other purposes the surgeon of to-day will find many books that will better answer his needs.

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THE FIRST TRIENNIAL CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

THE FIRST Triennial Congress of American Physicians and Surgeons has been often mentioned in these columns. The meeting, this year, comprises these eleven societies: the Surgical Association, the Genito-Urinary Association, the Laryngological Association, the Climatological Association, the Association of American Physicians, the Otological Society, the Ophthalmological Society, the Neurological Association, the Dermatological Association, the Physiological Society, and the Orthopedic Association. These societies devote the day-time to their respective society meetings, and their programmes have already been published in our pages.

When this number of the JOURNAL reaches its readers, the Congress will have been held. It is apparent that in numbers, at least, it will reach a comparatively high figure for the limited membership of the societies that compose it, and the papers promised show that original and interesting material is to be brought forward.

In one way the Congress ought to interest the profession at large. It is a cause of anxiety to many lest the specialists should lose their attachment to the profession as a whole. This Congress is, as it were, an acknowledgment, on the part of men who are members of the various special societies, of a common interest and a common bond. As they have to a certain degree separated themselves from the general practitioner, they here return, bringing the fruits of their work in their respective fields for the general advantage.

The general meetings take place in the evenings. On Tuesday evening, September 18th, papers on "Intestinal Obstruction in its Medical and Surgical Relations" were to be read by Dr. Reginald H. Fitz, of Boston, and Dr. Nicholas Senn, of Milwaukee, Professor of Surgery in Rush Medical College, Chicago, Ill., followed by a discussion, in which Dr. William Pepper, Dr. J. Collins Warren and Dr. Thomas G. Morton, and others were expected to take part. On

Wednesday evening, September 19th, papers on "Cerebral Localization in its Practical Relations" will be read by Dr. Charles K. Mills, of Philadelphia, and Dr. Roswell Park, Professor of Surgery in the Buffalo Medical College, followed by a discussion by Dr. David Ferrier, Mr. Victor Horsley, Dr. W. W. Keen, Dr. E. C. Seguin, Dr. Robert F. Weir, and others. Thursday evening, September 20th, is to be devoted to the address, by the President, John S. Billings, M.D., U. S. A., on "Medical Museums," followed by a general reception in the United States Army Museum Building. The JOURNAL is delayed to give our readers the address, which will be found in full in our pages.

The address of the President illustrates the remarkable faculty, which shows itself in all Dr. Billings' addresses, of including the medical world in his vision, and making its several countries contribute to the instruction of his auditors: and the true brotherhood of science and the kinship of nations seems realized as he compares the distant and time-honored medical institutions of the old world with those of our own country.

The functions of medical museums in general and of the Army Medical Museum in particular, will doubtless be better understood than before. What Dr. Billings has to say concerning the relation of the Army Medical Museum to the public will surprise the majority of those who hear or read his speech. That non-medical people should be admitted to a medical library in any way save by stealth, has never entered into the ideas of most of us. But that there ought to be an opportunity for those who desire to learn something about themselves, most physicians will doubtless admit when the subject is fairly presented to them; and if such a function belongs to the National Medical Museum, will it not presently be seen to belong also to other museums of a similar nature? This is to be — not improbably — one of the ways in which the public is to be educated up to a point where education will be a necessity on the part of the man who professes to give medical advice. We shall give our readers an opportunity to read for themselves the proceedings in subsequent numbers.

YELLOW FEVER, SOUTH AND NORTH.

THE sad case of Professor Richard A. Proctor has naturally excited extraordinary attention from the prominent position of the patient in the world of astronomical science. It seems to have been a typical one of yellow fever, and yet it is certainly remarkable that, so far as known, there has been no yellow fever at Oak Lawn, Marion County, Florida, from whence he came to New York. He arrived at the latter city on Monday, the 10th instant, having travelled through by rail. To this long journey he ascribed the indisposition he felt on going to bed at the Westminster Hotel at Irving place and Sixteenth Street. On Tuesday morning he was much worse, and was ad-

vised to consult Dr. George S. Conant, who formerly was an inspector of contagious diseases in the health department. Dr. Conant examined Prof. Proctor, and sent word for Dr. Cyrus Edson, chief inspector of contagious diseases. The two experts made a careful examination, and also called Dr. A. Jacobi in consultation, knowing that he had had experience in yellow fever cases.

Prof. Proctor had a high fever and his skin had a yellowish color. He also vomited at intervals, but the physicians could not be certain that he was suffering from yellow fever. He told the physicians that he had not been near Jacksonville or any other yellow fever centre, and so far as he knew, had not been exposed to the disease. A clean bill of health had been given to him when he left Florida. The physicians decided that he ought to be removed to the Willard Parker Hospital, to which he cheerfully consented on being told of their suspicions, but said he was confident the disease would not prove to be yellow fever. During Tuesday he steadily improved, was able to walk, and stood well in his transportation in an ambulance. That night he rested well, but early the next morning came a relapse, attended by the "black vomit," convulsions and death. Every possible precaution was observed by the officers of the Board of Health, and no fear is apprehended that any other cases of the disease will arise in the city from this source.

On account of the public interest in this case, and for the purpose of allaying any uneasiness that might be felt as regards possible future danger, President Bayles has had the following memoranda regarding yellow fever in New York prepared by the statistician of the Board:

"In 1856, between April 10th and October 1th, seventy-nine infected vessels from infected ports arrived in the Bay of New York, and anchored for four miles above and below the Narrows, between Long Island and Staten Island, from Gravesend Bay to within a short distance of New Brighton. The fever extended to the land along the borders of each island opposite the line of infected vessels, and no farther, except one spot on the south side of Governor's Island and about opposite on the New Jersey shore. Thirteen deaths from the disease occurred in New York, but the victims had all been infected outside of the city, and no case originated either in New York or Brooklyn. During July, August and September, sixty-four cases occurred on Governor's Island, and several hundred along the shores of Long Island and Staten Island.

"In 1870 occurred the last appearance of the disease in an epidemic form in this vicinity. It was practically confined to Governor's Island, where, out of a population of 774, there were 159 cases and 52 deaths. The first case was reported August 13th, and the last October 26th, the last death being on October 29th. On October 1st the sick were removed from Governor's Island to quarantine. It is to be noted in connection

with the question of contagion that twenty-nine cases occurred among those left behind in the infected district, while the sick taken to quarantine station, eighty-two in number, did not communicate the disease to a single individual. Eleven patients who contracted yellow fever on the Island and sickened in the city of New York (of whom nine died) did not in any instance communicate the disease, though quartered in crowded, filthy parts of the city. Only three deaths from cases of yellow fever were reported in the annual report of the Board of Health for 1870, because the earlier cases were not properly diagnosed. No deaths from this cause were reported on doctors' certificates until October 2d, when, as a fact, there had been six previous cases reported as typhus fever, remittent fever, pernicious fever, hepatitis, coma and paralysis. The disease had been prevailing on Governor's Island since August 13th, but the first death occurred in the city on September 9th. No suspicion was aroused even in the city till September 13th, and the diagnosis of the epidemic was not made sure even on Governor's Island until September 27th."

The progress of yellow fever in Jacksonville during the past week is shown by the following official statistics. The total cases up to September 9th, are as we reported last week, 604, with 73 deaths.

"For twenty-four hours ending 6 P. M., September 10th, new cases, 32; deaths, five. September 11th, new cases, 48; deaths, 11. September 12th, new cases, 59; deaths, 10. September 13th, new cases, 44; deaths, 4. September 14th, new cases, 43; deaths, 12. September 16th, new cases, 74; deaths, 9. September 17th, new cases, 52; deaths, 6. September 18th, new cases, 156; deaths, 20. September 19th, new cases, 130; deaths, 14. Total to yesterday morning, 1,333; deaths, 170."

Among the dead are the chairman of the committee on sanitation of the Citizen's Association. About 65 cases had been reported at McClenny up to September 14th, with 10 or 12 deaths. The disease appeared among the refugees at Hendersonville, N. C. Six cases developed at Gainesville, among the members of the Gainesville Guards who lately went to suppress the longshoremen's riot at Fernandina.

Yellow fever was reported as present in New Orleans, and a quarantine against that city was established at Galveston; but the Louisiana State Board of Health promptly came out in the following denial and protest:

"We give positive assurance that there is no yellow fever in New Orleans. There has not even been a suspicious case this summer. Should a case occur you will be immediately notified, in accordance with the pledge entered into between the boards of health of the Gulf States."

The Governor of Texas distrusting this assurance, has refused to remove the quarantine.

The weather during much of the past week in Jacksonville was wet and hot, and the ground steamed freely. Fourteen nurses, sent by Harry Miner of New York, arrived September 16th, and twenty-three nurses from New Orleans. Several of these, especially those from New York, were unacclimated, and were to be returned home. None but acclimated and experienced yellow fever nurses and physicians are desired.

THE GERMAN TREATMENT OF OBESITY.

DR. I. BURNEY YEO, in the current number of the *Nineteenth Century*, discusses the Schweningen (Oertel) treatment of obesity, now popularized in Germany by a brochure which has gone through sixteen editions.

This system of treatment, which can hardly be said to be Schweningen's, being borrowed principally from Oertel, is directed mainly against the prevalent tendency (especially in Germany) to morbid obesity—in other words, to getting too fat. Dr. Yeo asks two practical questions: (1) Is there any harm in getting fat? (2) When may a man be said to be getting too fat? and in reply to the first question, remarks that a very fair share of health and activity is not inconsistent, in some constitutions with a considerable amount of obesity. "As far as longevity is concerned, it may be some comfort to know that the tables of some of the American life insurance offices show that it is better to be much above the average weight than much below it; but it is better to be neither." He adds, however, that a great excess of weight due to an increased formation of fat is an abnormality closely bordering on disease. Such excess of adipose is, he says, almost always due to excess in eating, and fat persons who would get thinner should realize this fact. "A daily deposit of a quarter of an ounce of fat will, in ten years, increase the weight of the body by fifty-seven pounds." Excess of food includes excess of the albuminous group (which has been proved to be fat-forming as well as flesh-forming), as well as the carbohydrates (fatty, starchy and saccharine foods). In the young and active, the food which they consume is appropriated in the building up of their tissues, and to the development of muscular and nervous energy; there is little or no excess or waste. When the age of growth has come to an end, but is succeeded by an active and vigorous life, food is needed to develop as much muscular and nervous energy as before, or more, but the food needed for growth is needed no longer. But when the period of growth and activity is succeeded by a life of inactivity or indolence or self-indulgence, then, if the same amount of food is taken as was consumed during the period of growth and vigorous exercise, there is a superfluity, which in some cases is deposited and accumulates in the organism in the form of an excessive amount of fat.

The consumption of alcohol favors polysarcia; so also does an indolent, inactive, luxurious life. Alcoholic stimulants restrain waste on well-known principles, and an indolent life promotes accumulation of force-making materials far in excess of expenditure.

Dr. Yeo considers the "Banting" system, and objects to it that it rests on an erroneous scientific foundation, which overlooks the fact that fat can be formed out of nitrogenous food, out of the lean of meat, for instance, as well as out of carbohydrates. "Not only does it often induce subjective feelings of discomfort and bodily feebleness, a great loathing of the constant and exclusively meat diet, as well as digestive disturbances, which necessitate its interruption, but it fails,

in the more serious cases, to relieve the feebleness of the heart, the tendency to congestion of the lungs, and even dropsy, which complicate the graver forms of excessive corpulency." Ebstein's "cure" allows all kinds of fatty food—the fat of meat, butter, cream, fatty sauces and soups, but prohibits the carbohydrates, such as sugar, potatoes, and all forms of starchy food, and of bread, permits at most, three and a-half ounces a day. All kinds of meat in small quantity, as well as asparagus, spinach and cabbage are permitted. Dr. Yeo remarks that the success which has attended the Ebstein method must be referred mainly to the abstinence from the carbohydrates which it enforces, but it is hardly sufficiently supporting, and fails to relieve the heart-disturbances which attend extensive obesity.

The Schweningen (or rather the Oertel method) not only provides for the removal of excess of fat, but it also prevents its reaccumulation, and at the same time restores tone to the organs of circulation, which so often, in cases of excessive obesity, is lost. Oertel's system agrees with those above given in reducing the carbohydrates in the diet of the obese. It allows more fat than the Banting formula, and nearly twice as much albuminous food as Ebstein's, less than half as much fat as the latter, and about twice as much carbohydrates. "This amount of fat and carbohydrates is admissible in those cases where active exercise can be and is taken, as muscular exertion is attended with a considerable destruction of fat, and the relative excess of albuminous food in this formula leads to the displacement of the fat accumulated in the substance of the muscles, and to a new formation of muscular tissue in its place. At the same time, this diet protects the nitrogenous tissue from waste, a condition of health which is lost sight of in Ebstein's method. Indeed, the central idea in this cure is to *strengthen the muscle of the heart*, and this is aimed at, not only by a carefully considered dietary, but by the prescription of regular active bodily exercise and suitable gymnastics."

This method is somewhat modified in the management of those grave cases where the accumulation of fat about the heart has led to great embarrassment or perhaps degeneration, of that organ, and to consequent visceral congestion, and even to dropsy. In such cases, the fat and carbohydrates of the food is still further reduced, and the amount of fluid consumed is severely restricted, and perspiration is promoted by vigorous bodily exercise, especially in climbing graduated ascents. The following, then, are the objects aimed at in this cure:

- (1) To improve the muscular tone of the heart.
- (2) To maintain the normal composition of the blood.
- (3) To regulate the quantity of fluid in the body.
- (4) To prevent the deposit of fat.

These objects are attained by the following means:

- (1) The muscle of the heart is strengthened by enforced exercise, such as *climbing heights*. This re-

quires great care, and the exercises must be *graded*, the amount of work being increased as the patient can bear it.

(2) To preserve the normal composition of the blood, the food should be chiefly albuminous. It may consist of the lean of roast, or boiled beef, veal, mutton, game, and eggs. Green vegetables (as cabbage or spinach, may be taken; fat and carbo-hydrates only in very limited quantities; from four to six ounces of bread per diem.

(3) To regulate the quantity of fluid in the body the amount of fluid drunk daily must be limited. One cup (rather less than six ounces) of coffee, tea, or milk morning and evening, and about twelve ounces of wine, and from eight to sixteen ounces of water shall comprise all the fluid consumed in twenty-four hours. Beer is entirely forbidden. The discharge of fluid from the body is promoted by active exercise and occasionally by a course of baths, with packing.

(4) To prevent the deposit of fat the principles of diet already set forth must be carried into practice as follows:

Morning.—One cup of tea or coffee with a little milk, altogether, about six ounces; bread about three ounces.

Noon.—Three to four ounces of soup, seven to eight ounces of roast or boiled beef, veal, game, salad or a lighter vegetable, a little fish (cooked without fat) if desired, one ounce of bread or farinaceous pudding (never more than three ounces), three to six ounces of fruit, fresh preferred, for dessert. It is desirable at this meal to avoid taking fluids, but in hot weather, or in the absence of fruits, six to eight ounces of light wine may be taken.

Afternoon.—The same amount of coffee or tea as in the morning, with, at most, six ounces of water, an ounce of bread as an exceptional indulgence.

Evening.—One or two soft-boiled eggs, an ounce of bread, perhaps, a small slice of cheese. Salad and fruit, six to eight ounces of wine, with four to five ounces of water.

Such, briefly summarized, are the principles of this peculiarly German anti-fat regimen, for which, as Dr. Yeorightly affirms, the credit almost entirely belongs to Professor Oertel, the main features of it having for years been set forth in his writings. These principles seem to commend themselves as sound, though their practical application will require continued modification to adapt them to the stage of the affection, to the constitution and habits of the patient.

REPORTED MORTALITY FOR THE WEEK ENDING SEPTEMBER 8, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consump- tion.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	716	380	33.24	10.34	17.87	2.37	3.63
Philadelphia	1,016,798	365	161	23.56	11.78	9.86	7.39	4.11
Brooklyn	751,432	342	173	29.53	10.62	17.83	1.75	4.09
Chicago	760,000	291	163	33.33	8.24	17.52	4.81	7.90
St. Louis	449,160	205	95	23.41	5.36	8.78	2.44	6.83
Baltimore	437,155	177	82	27.12	7.91	12.99	5.08	2.26
Boston	407,024	175	69	18.85	12.60	13.71	1.14	2.86
Cincinnati	325,000	123	42	27.64	13.00	4.87	.81	65.0
New Orleans	248,000	—	—	—	—	—	—	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	83	45	36.14	12.04	16.86	3.61	1.20
Pittsburgh	210,000	70	29	25.71	8.57	4.28	10.00	7.14
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	19	6	36.84	21.05	26.31	—	—
Charleston	60,145	43	21	20.93	23.25	13.95	2.33	—
Portland	40,000	12	3	33.33	16.66	25.00	—	8.33
Worcester	76,328	27	14	51.85	11.11	40.74	7.40	3.70
Lowell	63,530	—	—	—	—	—	—	—
Cambridge	64,079	34	24	55.88	2.94	41.17	2.94	2.94
Fall River	61,203	24	12	37.50	20.83	29.16	8.33	—
Lynn	51,467	21	10	33.33	—	28.57	4.76	—
Lawrence	40,175	12	6	25.00	16.66	25.00	—	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36,228	13	9	38.46	—	38.46	—	—
Somerville	35,307	10	6	40.00	—	30.00	—	10.00
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	15	6	13.33	20.00	6.66	—	6.66
Chelsea	27,552	—	—	—	—	—	—	—
Haverhill	24,979	4	4	50.00	—	25.00	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	8	2	37.50	—	25.00	12.50	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	5	2	—	—	—	—	—
Malden	18,932	9	3	44.44	22.22	22.22	—	22.22
Fitchburg	17,534	6	3	50.00	16.66	33.33	16.66	—
Waltham	16,651	3	1	—	—	—	—	—
Newburyport	13,839	7	2	14.28	—	14.28	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 2,819; under five years of age 1,373; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 828, consumption 288, acute lung diseases 189, diarrhoeal diseases 436, diphtheria and croup 122, typhoid fever 100, whooping-cough 56, malarial fever 49, scarlet fever 32, measles 11, puerperal fever 11, cerebro-spinal meningitis eight. From whooping-cough, New York 23, Brooklyn eight, Washington seven, Chicago and New Orleans four each, Baltimore and Cambridge three each, Philadelphia and Pittsburgh two each. From malarial fevers, New Orleans 15, New York seven, St. Louis nine, Baltimore six, Brooklyn and Washington four each, Philadelphia two, Nashville and Charleston one each. From scarlet fever, New York 19, Brooklyn five, Philadelphia and Chicago two each, Baltimore, Boston, Nashville and Pittsburgh one each. From measles, New York eight, Philadelphia two, Chicago one. From puerperal fever, New York seven, Brooklyn two, Washington and Charleston one each. From cerebro-spinal meningitis,

New York three, Chicago and St. Louis two each, Haverhill one. From erysipelas, Baltimore two, Brooklyn one. No deaths from small-pox.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273 for the week ending September 1st, the death-rate was 17.5. Deaths reported 3,153: infants under one year 1,047; acute diseases of the respiratory organs (London) 130, diarrhoea 579, measles 53, whooping-cough 52, diphtheria 35, scarlet fever 22, fever 29, small-pox (Preston) two.

The death-rates ranged from 10.1 in Plymouth to 25.3 in Leeds; Birmingham 17.1; Bradford 15.2; Bristol 11.5; Hull 16.5; Leicester 21.0; Liverpool 19.7; London 16.4; Manchester 24.1; Nottingham 12.0; Portsmouth 20.6; Sheffield 18.3; Sunderland 20.6.

In Edinburgh 15.1; Glasgow 17.5; Dublin 20.4.

The meteorological record for the week ending September 8, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barometer.	Thermometer.			Relative Humidity.		Direction of Wind.		Velocity of Wind.		State of Weather. ¹		Rainfall.	
Saturday, Sept. 8, 1888.	Daily Mean.	Daily Mean.	Maximum.	Minimum	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration, Hrs. & Min. Amount in Inches.
Sunday, . . . 2	30.08	67.0	79.0	65.0	76.0	76.0	76.0	N. W.	N. E.	12	1	F.	C.	
Monday, . . . 3	30.27	63.0	77.0	57.0	62.0	87.0	76.0	N. E.	S. E.	10	6	C.	O.	
Tuesday, . . . 4	30.14	62.0	66.0	58.0	63.0	91.0	77.0	S.	E.	14	5	F.	C.	.04
Wednesday, . . . 5	30.13	62.0	77.0	67.0	85.0	92.0	64.0	W.	N.	12	15	C.	C.	
Thursday, . . . 6	30.53	51.0	55.0	43.0	57.0	55.0	56.0	N. E.	S. E.	12	4	C.	O.	
Friday, . . . 7	29.61	54.0	58.0	43.0	63.0	57.0	60.0	N.	S. E.	3	12	F.	C.	
Saturday, . . . 8	30.18	65.0	76.0	53.0	81.0	90.0	86.0	S. E.	S. W.	12	12	O.	R.	.22
Mean, the Week.	30.13	60.5	69.5	53.7			70.07							

† O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. A., FROM SEPTEMBER 8, 1888, TO SEPTEMBER 14, 1888.

JARVIS, NATHAN S., first lieutenant and assistant surgeon. Is granted one month extension of leave of absence, on surgeon's certificate of disability. S. O. 210, A. G. O., September 10, 1888.

CALDWELL, DANIEL G., major and surgeon. Is granted two months' leave of absence from September 14, 1888. S. O. 210, A. G. O., September 10, 1888.

BANISTER, JOHN M., captain and assistant surgeon U. S. A. Is granted two months' leave of absence, with permission to apply for an extension of one month, to take effect when his services can be spared. S. O. 211, A. G. O., September 10, 1888.

NORRIS, BAIL, lieutenant and medical director. Will proceed to Fort Klamath, inspect the medical department at that post, and upon completion thereof return to these headquarters, (Department of the Columbia, Vancouver Barracks, W. T.) S. O. 103, September 3, 1888.

PAGE, CHARLES, colonel, assistant surgeon general and medical director of the department. Will proceed to Forts Riley and Hays, Kansas, Post near Denver, and Forts Crawford, Lewis and Lyon, Col., and return on public business. The travel enjoined is necessary for the public service. Headquarters Department of the Missouri, Fort Leavenworth, Kansas. September 1888. S. O. 114.

AINSWORTH, FRED C., captain and assistant surgeon. Will, by direction of the Secretary of War, proceed to Kennebec Arsenal, Augusta, Me., on public business connected with the Medical Department of the Army, on completion thereof, will return to his station in this city, Washington, D. C. S. O. 211, A. G. O., September 11, 1888.

STRONG, NORTON, captain and assistant surgeon. By direction of the acting Secretary of War, will report in person at 11 o'clock, A. M., October 18, 1888, to Brig. Gen. John R. Brooke, president of the retiring board in session at Omaha, Neb., to give testimony in a case pending before the board. Upon completion of this duty he will return to his proper station. By paragraph 9, S. O. 212, A. G. O., September 12, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING SEPTEMBER 15, 1888.

LUNG, GEORGE A., assistant surgeon. Ordered to Receiving-ship "Vermont," Navy Yard, New York.

ERRATUM.

In the obituary notice of the late Dr. G. D. Townshend, it should have been stated that he was a graduate of the University of Pennsylvania, and received his degree in 1865.

BOOKS AND PAMPHLETS RECEIVED.

A Eulogy upon Cornelius Rea Agnew, read before the New York Academy of Medicine, by T. Gaillard Thomas, M.D. June 7, 1888.

Considérations Cliniques sur le Traitement du Catarrhe Chronique des fosses Nasales. Par le Docteur Léonée Lacoarret, a Salies-de-Béarn. Paris. MDCCCLXXXVIII.

Report of Ten Cases of Pleuritic Effusion with Aspiration of the Chest. Fourth Series—With a Case of Injection of Carbolized Loline into a Lung Cavity. By F. Peyre Porcher, M.D., one of the physicians to City Hospital, Charleston. Reprint. 1888.

A Case of Poisoning by Sulphate of Atropia; Recovery. By Blewelyn Eliot, M.D., Washington, D. C. Reprint. 1888.

New York State Board of Health. Eighth Annual Report to Legislature, February 27, 1888. Troy Press Co. 1888.

Therapeutics: Its Principles and Practice. By H. C. Wood, M.D., I.D.D., Professor of Materia Medica and Therapeutics, and Clinical Professor of Diseases of the Nervous System, in the University of Pennsylvania. A work on medical agencies, drugs and poisons, with especial reference to the relations between physiology and clinical medicine. Seventh edition of a Treatise on Therapeutics, rearranged, rewritten and enlarged. Philadelphia: J. B. Lippincott & Co. London: 10 Henrietta St. 1888.

Manual of Chemistry. A Guide to Lectures and Laboratory Work for Beginners in Chemistry; a Text-Book especially adapted for Students in Pharmacy and Medicine. By W. Snoon, Ph.D., M.D., Professor of Chemistry and Toxicology in the College of Physicians and Surgeons, Professor of Chemistry and Analytical Chemistry in the Maryland College of Pharmacy, Baltimore, Md. Second edition, revised and enlarged; plates and illustrations. Philadelphia: Lea Brothers & Co. 1888.

Pathogénie et Traitement de la Kérato-Conjonctivite Phlycténulaire (Ophtalmie des Serofuleux). Par le Dr. V. Augagneur, Agrégé à la Faculté de Médecine, Chirurgien en Chef (Désigné) de l'Antiquaille. Lyon: 1888.

Sur la Pelade: Nature, Transmissibilité, Origines, Modes de Propagation et de Transmission, Prophylaxie Publique et Privée. Par M. Ernest Besnier, Membre de l'Académie de Médecine, Médecin de l'Hôpital Saint-Louis, etc. Paris: 1888.

Original Article.

SHOCK.¹

BY DAVID W. CHEEVER, M.D., OF BOSTON.

THE operative surgery of our time has annulled pain temporarily, arrested hæmorrhage permanently; averted septic absorption. It has not prevented shock. This is still a cause of much fatality. It is the object of this paper to inquire whether modern surgical procedure has *diminished* shock; wherein it fails to do so; and to suggest improvements of its defects.

What is shock?

When any one gropes his way in a dimly lighted passage, and meets unexpectedly a strange person at some turning, he experiences a start, a mental apprehension, his heart turns over, flutters, but at once recovers its balance. Pursuing his path, if he now, in descending, misses a step in the dark, he has a greater shock to his nerves, he braces himself, flutters, sweats, or is chilled. If he falls and bruises himself moderately, he has vertigo, nausea, cold sweat, pain. If he falls and breaks open a joint, he has syncope, epileptiform convulsions, nausea, fluttering pulse, sweat, pain. If he injures himself more severely, he has unconsciousness.

This is a simple description of the degrees of shock:

Apprehension,
Fluttering,
Sweating,
Chilliness,
Pain,
Vertigo,
Nausea,
Faintness,
Convulsions,
Unconsciousness,
Collapse.

The phenomena of a fainting-fit are the phenomena of shock. Sudden, disagreeable, painful, destructive impressions produced on the surface or efferent nerves, and affecting the brain; thence the ganglionic system; then the heart, the stomach, the skin; and thus the brain, at last.

Moderate shock terminates in reaction. This is the *recoil* of the system. It restores the balance; but the pendulum which marks the nervous force, swings back beyond the normal line. We have temporary fever, flush, full pulse, excitement.

Severe shock is more lasting. The pulse vibrates, intermits, flags, rallies, flags again, is soft, compressible, uncertain; faintness is constant, but partial; vomiting occurs; cold extremities; dilatable pupils; pallor; imperfect reaction; very slow recovery; a condition where a feather turns the scale against the patient.

If now an operation is done, we have renewed shock, prolonged shock, secondary shock: a matter of days rather than hours; persistent nausea; exhaustion; lowered temperature; diarrhœa; imperceptible and gentle death. Or, if an old person, that state known as prostration with excitement; typhoidal delirium, a dusky flush over the malar bones, dull eyes, intermittent pulse, jactitation, exhaustion, death.

Primary shock, reaction; early and perfect; or slow and imperfect. Secondary shock: prostration, nausea, excitement, collapse. Loss of blood, from accident or operation, adds to the shock or complicates its symptoms.

Jar, crushing, mutilation, pain, cutting, bleeding, chilling, all act on the nervous centre; react on the ganglia, the heart, the power of breathing, the temperature, the consciousness, the life.

Given then the problem and the phenomena of shock, what particular influences have the operative procedures of *modern* surgery upon them?

They may be summed up in three points:

The effects of anesthetics;
The effects of the operations;
The effects of the dressings.

These all belong together and affect each other.

Anesthetics annul pain, but end in nausea.

Operations under anesthetics are needlessly prolonged and exhausting.

Modern dressings are tedious and chilling.

Have we lessened, or added, to shock by modern surgery?

Pain and bleeding are *less*. Slow cutting, nausea, exposure, low temperature are *more*. Primary shock is diminished: secondary shock is increased.

Formerly the time consumed in an operation was short. An amputation was hurried, now it is deliberate; an abscess was incised, now it is aspirated and curetted; a joint injury was cut off, now it is excised; the peritoneum was peeped into, now it is boldly explored; the bladder was cut for stone, now it is a prolonged crushing and washing; a breast was amputated, now the axilla is formally dissected. The old method was a matter of minutes; now it is one of hours.

Patients are frequently from one and a half to two hours on the operating table; and three hours in recovering consciousness so that they can swallow. Do we realize what this prolonged cutting, pinching and dissecting mean to the nervous system after anesthesia is past? Does not the long exposure of the great veins to the air, in dissecting tumors, increase coagulability and future infarction? Can the peripheral nerves be lacerated *seriatim* without exhausting their constitutional irritability? It is recognized that long continued and large dissections on the front and sides of the neck are especially fatal.

Operations of *secondary* magnitude are now so prolonged that I have repeatedly seen patients die of primary shock, or *repeated shocks*, where the patient was one to two hours under the knife. It is said that he had not the vitality to resist. He had not; but consider what a perineal section, scooping out a uterine tumor, curetting a bladder, removing glandular enlargements, sometimes involve in time, in exhaustion, in capillary oozing, in shock.

Equally unphilosophical and fatal is the practice of operating in cases of primary shock before reaction has come on. An amputation is begun in half-life, and ended in death. Especially difficult to decide are the cases where the patient reacts imperfectly, and relapses. These cases are easily made fatal, and only saved by quick amputations, slight exposure and short anesthesia. The golden moment of fairly established reaction must be seized, before traumatic fever sets in. This moment comes in from six to eighteen hours after the injury, or it never comes.

¹ Read before the American Surgical Association; at the First Triennial Congress of American Physicians and Surgeons, at Washington, September 20, 1888.

It should be considered an *axiom* that anaesthesia does not diminish existing shock, but only annuls the additional shock which the pain of cutting produces. It prevents the pain of an operation from increasing the shock which may be present from an injury. It prevents the pathological case from experiencing the shock produced by the pain of cutting out a tumor; it does not prevent the secondary shock of the mutilation; it adds to secondary shock if the anaesthesia is prolonged.

In feeble subjects the lack of nourishment which precedes an operation, desirable on account of safe anaesthesia, is much aggravated by their inability to retain food after the operation. This has an important influence in bringing about collapse.

Lowering of the bodily temperature is constant after an operation under anaesthesia. The thermometer frequently falls to 97°, to 96°, and after severe and prolonged operations, to 95° Fah. This is a very serious matter, and has a marked influence in delaying reaction from shock. This chilling of the vital heat is induced, first, by anaesthesia, which, if prolonged, ends in a dripping sweat; next, by careless exposure during an operation. Then also it is largely due to antiseptic irrigations, to vapor douches of similar agents, to applications of cloths wet in corrosive or carbolic solutions around the site of the operation. The axillae, the neck, the thorax and the abdomen are especially prone to deleterious chilling in this way.

Evaporation is a great factor in reducing heat; and this is constantly occurring on the body of the patient, in a warm atmosphere, during a prolonged operation. Especially is this dangerous when the peritoneal surfaces are exposed; evaporation then is very rapid and very extensive.

Warm douches and washes give as great a subsequence chilling as cold ones, as all experience who take a tepid bath.

The sufferer is frequently allowed to lie about too long, under an anæsthetic, waiting for his turn, in busy hospital practice.

The surgical toilette of wounds, in the modern modes of dressing, is depressing, exhausting, devitalizing.

Finally, comes the greatest evil of all, nausea. Nausea is one of the marked symptoms of severe shock, primary or secondary. Unfortunately, anaesthetics very frequently produce this as a secondary effect.

Persistent vomiting and retching mark the slow sinking and collapse of secondary shock after capital operations. Continued nausea is one of the worst of symptoms; begun in pain, and shock, it recurs after anaesthesia, and continues as the most dangerous factor in preventing reaction.

What can we do to prevent or diminish shock?

- (1) Wait for reaction.
- (2) Never neglect to calm those suffering mental shock by a cheerful word and personal presence.
- (3) Give alcohol, either spirits or wine, a quarter of an hour before the anaesthetic.
- (4) Make the anaesthesia short; never begin it until everything is ready; suspend it during the less painful dressings. Consciousness returns *tardily* . We keep up the anaesthetic longer than is necessary.
- (5) As rapid an operation as can prudently be done.
- (6) As short a dressing as is practicable.

- (7) As a cardinal point, avoid *chilling* the patient.

To promote reaction after the operation:

- (1) Persistent and *carefully* applied dry heat. (Be *over-careful* about accidental burns.)
- (2) Liquid nourishment, combined with a stimulant and a little laudanum, by enema.
- (3) Subcutaneous injection of brandy.
- (4) Aromatic spirits of ammonia by the mouth. Champagne is sometimes retained when other things are rejected.
- (5) Black coffee and brandy, the stimulant *par excellence*, when it can be retained on the stomach.
- (6) Quiet; a horizontal, or more than horizontal position; sleep; assurance that all is over, and doing well.

Modern surgery has won *three* great triumphs:

It substitutes sleep for pain.

It averts secondary hæmorrhage by the animal ligature.

It prevents fermentation by germicidal applications.

Can we add a *fourth*, by stilling the nervous system, and averting, or diminishing secondary shock?

Reports of Societies.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

THE First Triennial Meeting of the Congress was held in Washington, September 18, 19, and 20, 1888.

FIRST SESSION, TUESDAY.

The meeting to receive the report of the Executive Committee and for Organization was held at one P. M., Tuesday in the Grand Army building.

The meeting was called to order by DR. WILLIAM PEPPER, Chairman of the Executive Committee, who spoke as follows:

"On behalf of the Executive Committee I have to announce the manner in which we have discharged our responsible duty. The present meeting is the result of prolonged deliberation which began to take shape more than four years ago, before the attention of the medical profession became occupied with preparation of the meeting of the International Medical Congress, but all action was deferred in order that there should not be the semblance of interference with that important meeting. This delay has served to render more conspicuous the necessity for this organization.

"In order to produce the best scientific results, it is essential that the members in attendance shall be reasonably limited, and that as far as possible the same men shall attend successive meetings, securing a continuity of intellectual life and activity. A large proportion of those interested in the development of such an organization, are, as I am myself, warmly attached to the American Medical Association, and determined to exert their influence to maintain and promote the means of this great national organization.

"Your committee ventures to hope that their provisions will meet the unanimous approval of the Congress. We have recommended that the sessions shall be triennial. We have jealously guarded against the admission of parliamentary business, since the functions

of the Congress are designed to be absolutely or exclusively scientific. We have also guarded the independent sovereignty of each participating society.

"Lastly, the Executive Committee has reached the conclusion that the selection of the President of each Congress shall be entrusted to the Executive Committee then in office. Close study of the conditions of this Congress has led the committee to feel that if this organization were to have the effect of favoring the multiplication and subdivision of special societies, it would be nothing less than a calamity. We have therefore provided that the admission of new associations shall be secured only by the unanimous vote of the Executive Committee.

"It remains only to add that in exerting the privilege of selecting a President for the first Congress of American Physicians and Surgeons, we feel that we have been guided to the choice of a man, whose admirable personal character, whose high attainments, and whose illustrious services in the cause of literature, of science and of the entire medical profession mark him as entitled to this great honor and distinction.

"It gives us therefore the utmost gratification to present to you our President, Dr. John Shaw Billings, and to announce that the Congress of American Physicians and Surgeons is now duly organized."

President DR. J. S. BILLINGS then took the Chair, and responded in a brief address.

THE ADDRESS OF WELCOME

was delivered by DR. SAMUEL C. BUSEY, of Washington.

The consideration of

THE BY-LAWS

was next taken up.

(1) This organization shall be known as the Congress of American Physicians and Surgeons.

(2) It shall be composed of National Associations for the promotion of medical and allied sciences.

(3) It shall hold its sessions triennially in the City of Washington, D. C.

(4) The Officers of the Congress shall be a President, Vice-Presidents, a Secretary, a Treasurer, and an Executive Committee.

(5) The President shall be elected by the Executive Committee, of which he shall be *ex officio* member. He shall preside at the sessions of the Congress. He shall deliver an address.

(6) The Presidents of the participating societies shall be *ex officio* the Vice-Presidents of the Congress.

(7) The Secretary and Treasurer shall be elected by the Executive Committee. They shall be *ex officio* members of the Executive Committee.

(8) The Executive Committee shall be composed of one member from each participating society; and said members shall be elected by the various societies at the next annual meetings subsequent to the Congress. It shall be charged with all duties pertaining to the organization of and preparation for the ensuing Congress, including the election of all officers, and for a Committee of Arrangements. It shall superintend the publication of the Transactions of the Congress.

(9) The expenses of the Congress shall be divided between the participating societies in proportion to their membership.

(10) The admission of new Associations to participation in the Congress shall be by unanimous vote of the Executive Committee.

These by-laws were unanimously adopted.

EVENING SESSION, TUESDAY.

President, DR. J. S. BILLINGS, in the Chair.

THE MEDICAL RELATIONS OF ACUTE INTESTINAL OBSTRUCTION,

by REGINALD H. FITZ, M.D., of Boston.

The subject of this paper was the diagnosis and medical treatment of the acute internal, mechanical

varieties of intestinal obstruction. The only causes recognized were strangulation from adhesions, vitelline remains, peritoneal slits, pockets and rings; intussusception, twists and knots; abnormal contents, strictures and tumors. The evidence presented resulted from an analysis of 295 cases collected from medical literature since 1880.

The most constant symptoms of obstruction were shown to be pain, vomiting, tympany and tumor. Stoppage of the bowel was not regarded as the most essential symptom in diagnosis, since frequent loose stools characterize intussusception and may occur in other varieties of obstruction. Too much attention directed to this symptom leads to erroneous diagnosis, since it is of frequent occurrence in peritonitis and often results in irrational and injurious treatment.

The physician is called upon to decide whether the given case is one of acute obstruction; then where its seat and what its cause, and finally what is to be done. The evidence offered, showed that the diagnosis was to be made by excluding the various causes of peritonitis. Its seat in the large or small intestine was to be determined by injections under high pressure when necessary. The variety was for most practical purposes, an intussusception; or a twist of the large intestine and strangulation, or gall stones in the small intestine. The differential diagnosis depended on the relative frequency of these varieties, the age of the patient, the antecedents and immediate symptoms.

The treatment consisted in the attempt to relieve intussusception of the large intestine by forced injection under anesthesia with massage, and to treat obstructing gall stones by opium, possibly by the aid of laxatives and electricity. All the other varieties of acute obstruction require surgical treatment. The latter treatment is also necessary on or before the third day in cases of intussusception not yielding to forced injections and in gall stones when the symptoms become urgent.

THE SURGICAL TREATMENT OF INTESTINAL OBSTRUCTION,

by N. SENN, M.D., of Milwaukee.

He claimed at the very beginning that all cases of true intestinal obstruction are, in every sense of the word, surgical affections. Intestinal obstruction is present when from mechanical or from dynamic causes the intestinal canal becomes completely or partially imperforate, interfering completely or partially with fecal circulation. It is important that a distinction be made between the cases due to mechanical causes and those due to dynamic causes. In the former the surgeon is expected to modify the mechanical cause. In the other the surgical treatment is limited to diminishing intra-abdominal pressure. Cases of internal intestinal obstruction should be considered in the same light as cases of strangulated hernia. The time that such a case may safely be permitted to go without operation varies. In some, twenty-four hours will suffice for the occurrence of irreparable pathological changes; in others a much longer time may be allowed to elapse. Operation should be performed as soon as the diagnosis is made.

The surgical resources in the treatment of internal obstruction were taken up seriatim.

Irrigation of the Stomach was first referred to. All forms of intestinal obstruction, no matter what the cause, are aggravated by anything that increases the

hydrostatic pressure on the proximal side of the obstruction. Irrigation of the stomach relieves this, and also diminishes the intra-abdominal pressure. It not only empties the stomach, but evacuates the contents of a number of feet of the intestine. It, however, will not do to rely upon this as a radical measure, except when the cause of obstruction is of a temporary character. This measure should always be performed before operation, as it prevents vomiting. An antiseptic solution should be used in the irrigation.

Distension of the Intestine with Fluids. The mechanical effects of this measure are limited to the colon. The fluid does not pass beyond the ileo-caecal valve. Why should we not in these cases resort to the lightest possible substance known, hydrogen gas, which is harmless, readily obtained and aseptic. A pressure of one-fourth to two pounds to the square inch overcomes the resistance of the ileo-caecal valve, and forces the gas from the anus to the mouth. A pressure of eight to ten pounds to the square inch is required to produce palpable injury of any of the coats of the intestine. If perforation takes place there is at once a positive indication for opening the abdomen. The fact that perforation has occurred is known by the disappearance of the liver dulness.

Manual Exploration by the rectum is a useful diagnostic and therapeutic measure where the obstruction is below the sigmoid flexures, provided the surgeon has a small hand.

Taxis and Massage should be limited to cases where the obstruction is due to intra-mural causes, and to a few cases of invagination. Uniform uninterrupted equable pressure of the abdomen is useful in preventing hyper-distension in these cases, especially where dynamic causes are feared.

Enterostomy, so frequently practised in the past, he hoped, had become very nearly obsolete. It should only be employed where it is clear that the patient will not be able to pass through the ordeal of laparotomy.

Lumbar Colotomy. In cases where the operation was formerly employed we can often, by uniting the portion of bowel above the obstruction with that below by means of decalcified bone plates, avoid the necessity for colotomy. I have specimens showing that a dilated, congested bowel can be repaired when excluded from the faecal circulation in this way.

The author had in the past eight months performed gastro-enterostomy in four cases by this method. In all of these cases the operation was a success, although in one case the patient died because the operation had been postponed too long. In one case following, the advice of Leucæ had been followed, and the first presenting portion of the bowel had been fastened to the stomach. The patient continued in good condition for nine days, when symptoms of obstruction came on, and he died in three weeks. It was found that the connection with the bowel was eight feet below the pyloric orifice, and that the movements of the bowel had produced a sharp flexion of the intestine, causing obstruction. Gastro-enterostomy in incurable carcinoma is a safe operation, and one which the surgeon owes to all such patients.

[The time allotted to this portion of the discussion having expired, the speaker was unable to complete his remarks.]

DR. ARTHUR DURHAM, of London, had taken much interest in this subject. There is no class of cases

which are more serious or more dangerous than those of intestinal obstruction. I agree with Dr. Senn, that usually in these cases the sooner the surgeon is called the better. As soon as the diagnosis is made the operation should be performed. In some cases it should be done before a positive diagnosis is reached, and in order to clear up the diagnosis. Under such circumstances the surgeon must be prepared to meet the indications that present themselves. In trying to reach a diagnosis the probabilities in favor of this or that condition, based upon statistics, should not influence us; but the case should be studied on its own merits, and treated on the indications before you. In regard to the injection of hydrogen gas, he suggested the possibility of the formation of explosive compounds, and thought that atmospheric air might be substituted.

He recommended that in cases of acute obstruction in which there is reason to believe that the cause is in the small intestine, provided the symptoms are severe and urgent, the proper thing, even if an absolute diagnosis has not been made, is to open the abdomen and search for the cause and relieve it as best you can. On the other hand, where the cause is in the large rather than the small intestine, there is not the same degree of urgency. He strongly advocated lumbar colotomy in certain cases. In some cases after colotomy there has been a gradual restoration of the bowel and the patient has recovered completely.

DR. WILLIAM ORR, of London, admitted that there was often a great deal of difficulty in the diagnosis. He was in favor of the views of Dr. Fitz, and claimed a little time before resorting to operation. In some of these cases under the use of hypnotics and time the cause of obstruction had disappeared. Where, however, there is mechanical obstruction the case must sooner or later go into the hands of the surgeon. This time should be a short one. The operation is a serious one, especially in people over fifty years of age. I have often seen the operation performed, and frequently fail in those cases where there was the most reason to expect success.

MR. THOMAS ANNANDALE, of Edinburgh, said that these cases of obstruction should be divided into two classes, the acute and the chronic. In acute cases medical measures should be tried, but not continued too long. If the symptoms are urgent the surgeon should be called at the end of forty-eight hours; the sooner the abdomen is opened the better. In the chronic cases we may wait a considerable time, even until the symptoms become acute. The treatment should then be applicable to a case of acute obstruction. I have largely given up lumbar colotomy, which I have employed more particularly in rectal obstruction, and resort to inguinal colotomy as a simpler and not more serious operation in most cases.

DR. N. SENN, in closing the discussion, stated that there was not the least danger in the use of hydrogen gas. He had performed many experiments on animals and had used the procedure in man. In cases of intestinal perforation it aids the diagnosis, and allows the surgeon to determine whether or not all the openings have been closed. In a recent case of gunshot wound eleven openings near the ileo-caecal valve were closed, and a twelfth was revealed by the hydrogen gas at the point where the peritoneum is reflected from the bowel to the bladder. The patient is doing well one week after the operation.

THIRD SESSION, WEDNESDAY EVENING.

CEREBRAL LOCALIZATION IN ITS PRACTICAL RELATIONS,

by CHARLES K. MILLS, M.D., of Philadelphia.

In his introductory remarks, the speaker referred to the fact that from the clinical observation of practical physicians sprung the conceptions out of which developed the science and art of cerebral localization. Allusions were made to the discoveries of Bonilland and Broca on speech localization; to the announcement by J. Hughlings Jackson in 1864, that certain convolutions superintended the delicate movements of the hand, which were under the immediate control of the mind; and to Hitzig's researches having originated from his observing certain ocular movements during galvanization of the heads of his patients. Brief reference was made to the history of American work in localization; to the investigations, in 1874, of the New York Society of Neurology and Electrology; to Putnam's discovery that irritation of the white matter beneath definite cortical centres produced movements similar to those caused by irritation of the centres themselves; to the labors of Wood and Ott on the heat centres; and to the light thrown by these investigations upon the mechanism of fever and the action of drugs upon different forms of high temperature.

Before taking up the surgical aspects of the question, the speaker briefly discussed some of the practical results wrought by cerebral localization for psychological medicine and medical jurisprudence; for general symptomatology and diagnosis; and for medical therapeutics and technique.

Trephining for cases of insanity, particularly when guided by the rules of localization, was briefly considered. Two of the recent cases of brain operation reported by Bennett and Gould, and by Macewen, were cited as possibly opening a new field for surgical interference in insanity, the excision of cortical areas as a method of treatment when certain subjective phenomena, such as hallucinations of sight or hearing, can be given a local habitation in the brain.

In turning to the surgical aspect of cerebral localization in its practical relations, the author stated that his remarks would be chiefly concerned with questions of diagnosis. He considered, first, the forms of disease and injury in which cerebral localization is a valuable aid to diagnosis; and, secondly, the topographical diagnosis of the parts of the brain accessible to surgical interference, with some sources of error in such diagnosis. The forms of disease in which such diagnosis has been used are intra-cranial tumors, cysts, fractures, hæmorrhages, abscesses, and discharging cortical areas.

In considering the localization of brain tumors, Dr. Mills referred to twenty cases of autopsies occurring in his own personal experience, in about one-half of which the tumors were in surgically accessible areas, and in, at least, one-fourth of which successful operations might have been performed. He advocated from this experience the excision of old gunmata, and also, in special cases, of tubercular growths. The value of localization was shown in cases of fracture when the extent of the unseen damage could not be told by the position and character of the visible lesions.

Of the different forms of intra-cranial hæmorrhage, subdural, cortical, and intra-cerebral were most amenable to localizing diagnosis. The rules for the local

diagnosis of these forms of hæmorrhage were then given. Dr. Mills advocated the performance of trephining in exceptional cases of hæmorrhage into the ganglia and capsules, cases in which symptoms indicated that the bleeding had not broken into and inundated the ventricles. From the sections, the best site for operation in such cases, all things considered, would be in the anterior portion of the first or second temporal gyrus. He favored Hughlings Jackson's suggestion of excising localized cortical areas, even when coarse lesions could not be made out, in cases of spasm, beginning locally or deliberately.

The inaccessible areas had been narrowed down by the venturesome surgical explorer, and had become reduced to the middle regions of the base and its bordering convolutions, the corpora quadrigemina, and the pons oblongata.

The characteristics of localizing symptoms were described as phenomena of irritation, destruction, instability, pressure, invasion, and reflex action. Signal symptoms and the serial order of motor phenomena were discussed. Briefly, in certain regions of the brain, an accurate topographical diagnosis could be made with great certainty from positive localizing symptoms. These brain areas include the entire motor zone, in which are embraced the motor or emissive speech area, the region of Broca; the visual area in the cuneus, giving lateral hemianopsia, and the intra-cerebral visual tracts; possibly, also, the angular gyre and the lateral surface of the occipital lobe. In other regions of the encephalon the topographical diagnosis could be made with sufficient accuracy, even for surgical purposes, by the study of the positive symptoms, with, in addition, the application of processes of exclusion and successive differentiation. Particular stress was here laid upon the importance of pressure and invasion symptoms. These areas for approximately certain topographical diagnosis include the cerebellum, the pre-frontal lobe, the temporal lobe, and even certain cranial new districts, as the auditory and facial, when the lesion could be localized within the cranium, between the superficial origin of the nerves and their entrance into their foramina or canals of exit.

Motor localization has become almost an exact science. The latest physiological research bearing upon the subdivision of the motor area, and the light thrown upon the question by surgical operations, were discussed. It was held to be imperative for the neurologist and surgeon to have exact knowledge, not only of the anterior and the posterior limits, but also of horizontal subdivisions of the motor zone.

The old method of subdividing the motor zone into three elliptical or circular areas from above downward was considered insufficient; but the neurologist should be able to locate for the surgeon, from a study of motor phenomena, at least seven or eight positions for trephining; these positions being selected by a close study of the initial or signal symptoms, the serial order of movements, and also of the amount and character of the temporary paralysis after the seizure, and the method of extension of the persisting palsy. Reference was made to operations performed through accurate localization in these areas.

The view of Ferrier as to the localization of the centre for ocular and head movements in the second frontal gyre was concurred in, and observations were cited in its support; when turning of the head and

eyes was the starting point of the spasm, this localization was probably indicated. The fact that cortical oculo-motor palsies were not present as a persistent condition, even with definite lesions of the second frontal gyre, was explained by the intimate and peculiar connections of the oculo-motor nuclei at the base; they do not persist for the same reason that paralysis in the upper distribution of the facial nerve is so seldom permanent. He believed that there was a special centre for the orbicularis palpebrarum movements, probably below and adjacent to the oculo-motor centre.

Dwelling upon the sources of error in motor localization, the questions of reflex spasm, of unilateral convulsions due to uræmia, lead, and other toxic agents, and to hysteria and hystero-epilepsy, were briefly discussed. Sufficient diagnostic difficulties are still present to make it important, in the light of the tremendous impetus towards operation, to carefully examine all questions of differential diagnosis. In certain spasmodic affections the resemblance between those clearly of reflex origin and those as demonstrably central were very striking. Trigeminal epilepsy, whether dural, facial, dental, nasal, pharyngeal, laryngeal, or of whatever local origin, might cause unilateral convulsions, or even monospasm. Dural epilepsies are especially worthy of attention, as shown by the researches of Dupuy, Brown-Séquard, Burdon Sanderson, the New York Society of Neurology and Electrology, Duret, Bochefontaine, and Francois-Franck. Franck has made a careful comparison and contrast of cortical epilepsies with those which are reflex and toxic, including those which are due to irritative lesions of the dura mater.

The author referred to five cases in his own experience in which operations had been performed for epilepsies apparently reflex in character, two in which spicules of bone had been removed from the dura mater, one in which an old inflammatory lesion of the membranes and cortex from traumatism was present, and two in which scalp cicatrices were removed. While fearing, with Franck, that we are not always able to make a trenchant separation between reflex and cortical epilepsies, some points of separation were indicated. True Jacksonian epilepsy, Dr. Mills believed, was sometimes reflex in origin; that is, it was established by intense, persistent, peripheral irritation, and, even after the irritation had been removed, the cortical discharge continued. Herein, perhaps, lay the explanation of Jacksonian spasm without coarse lesion, and herein also, perhaps, was to be found the justification for the excision of cortical discharging areas. The author referred to a case in which epilepsy clearly of Jacksonian type was just as clearly due to a fibroma involving a nerve-trunk on the palmar surface of the hand, and in which the patient was cured by removal of the growth.

With reference to sensorial localization, cutaneous and muscular, the views of Horsley and Schäfer with reference to the limbic lobe, were accepted in part. The speaker believed that the evidence was becoming stronger every day in favor of the existence of a zone for the sensation or touch, pain and temperature separate from cortical motor areas. Collections of cases, such as those of Starr, Petrina and others, which were supposed to indicate that the sensory areas coincide largely with those of motion, were not regarded as overcoming the positive evidence of decided destruc-

tive lesions of the cortical motor zone without any sensory disturbance. From a study of his personal cases, he had concluded that they did not support the doctrine that the motor and sensory areas coincide. Notes of these cases were given, and also cases from other reporters. He believed with Bechterew, that the loss of sensation in animals who have had the motor area destroyed was apparent and not real. Some light had been thrown upon this disputed question by careful examination of patients after operation, particularly when certain definite dural areas had been clearly excised. Reference was made to the cases of Horsley, Weir and Seguin, Lloyd, Deaver, and others. The speaker believed that these observations and experiments pointed clearly to the theory that the motor zones were motor, alone in function. His view was that the region for general sensation including touch, pain, temperature and perhaps pressure, location and muscular sense could be divided into special areas for the various distant portions of the body and that these centres lay alongside and had close anatomical and morphological relations with corresponding motor centres, but that they were not identical with them. He located these sensory areas in the gyrus fornicatus, the hippocampal gyre, the precuneus and the lateral postero-parietal region.

The practical conclusion was that the neurologist and surgeon must depend upon motor symptoms alone in fixing the site for operation in cases where the motor lesions were definite. When positive sensory symptoms were present they might sometimes serve to aid in locating more exactly the position for operation, but the data were not sufficient for positive reliance.

The question of morphological peculiarities of the human brain was briefly alluded to as having some practical bearing upon the subject under discussion. The position of the so-called angular gyre and aberrations in the parieto-occipital region were more particularly discussed. Even the fissure of Sylvius, the central and parieto-occipital fissures sometimes present considerable variation, but as a rule, such aberrations were not confusing in operating on the motor region after the methods of Broca, Thane and others.

Dr. Mills concluded by saying that the discoveries in cerebral localization with the achievements in antiseptic surgery constitute the greatest triumphs which adorn the history of the noble science and art of medicine.

CEREBRAL LOCALIZATION IN ITS SURGICAL RELATIONS,

by ROSWELL PARK, M.D., of Buffalo, N. Y.

The essay was devoted purely to the surgical aspects of the subject, and omitted consideration of those cases in which operation is dictated by a study of the subjective rather than of the objective features.

Cerebral Topographical Anatomy. The areas which most concern the surgeon are those which cluster around the fissure of Rolando. A few bony prominences deserve attention in this connection: that of the point of the nose known as the glabella; the external occipital protuberance, known also as the inion, the point of the vertex half-way between these two, the bregma; the external angle of the orbit, the tip of the mastoid process, and the lower border of the alveolar process of the upper jaw. The fissure of Rolando has its upper end about five centimetres back of the bregma, but does not run quite in the middle line, its

lower end lies about one-half a centimetre behind the auriculo-bregmatic line and a little above an imaginary line projected backward from the superciliary ridge, thus the lower end of this fissure will be found about six centimetres above and a little behind the external auditory canal; or about one inch behind the bifurcation of the fissure of Sylvius. In regard to the convolutions, it must be stated that lesions of the dura mater overlying motor areas are not always to be distinguished from lesions in the cortex beneath. It is enough for the surgeon that a lesion of some kind can be located with reasonable accuracy. It matters not whether this is an old irritative lesion; an acute suppurative process between the bone and the brain, or an abscess or tumor of the brain itself. The indication for exploration is just as strong in either case.

When and Where can one Trephine with Safety? The safest rule is to first apply the trephine over those areas which do not overlie large vascular channels. Afterward the opening may be extended in any direction and to any required extent. The greatest hesitation is with regard to opening one of the sinuses. Two dangers attend such an accident; one, fatal air embolism, the other, profuse hæmorrhage. The former danger is almost a theoretical one, and the other may be overcome by plugging the sinus or closing its wound with a fine needle and suture.

Cerebral or Cerebellar Abscess. Bergmann has shown that abscess of the brain has but one result, death, and that the surgeon's knife offers the only relief. So far as we know there is no such thing as idiopathic abscess of the brain; it is always the result of some external wound of the head or some extension from diseased surrounding bone. The only exceptions to this statement are to be found in the case of pyæmic or tuberculous abscess. The symptoms of deep brain abscess may be divided into three groups according to causes.

(1) Those which are inseparable from indications of suppuration. Such are those disturbances which may follow any deep-seated foreign body. (2) Symptoms of increased intra-cranial pressure and of distended relations. (3) Special symptoms by which the locality of the disturbance may be ascertained.

As long as the gray matter is undestroyed, the collection of pus may assume large dimensions, and still no intense motor symptoms appear. Local elevation of temperature over the abscess is a symptom of importance when present, but its absence need not negative a diagnosis if made on other grounds. Wernicke has stated that there is a peculiar disturbance of speech which points to lesion of the temporal region. This is the confusion of correct with incorrect words. In the general diagnosis of cerebral abscess, it is to be remembered that there usually is a latent period which may continue for an indefinite period. The stage of active symptoms is usually ushered in by more or less headache; slight rise in temperature; local or motor symptoms can only be expected when the abscess is in the motor area of the brain.

In operating for abscess of the brain, operators until recently have satisfied themselves with incising the dura and doing nothing more. With the introduction of aspirating methods, the hollow needle came to be used for brain exploration. The dangers of this procedure are certainly small. The danger of hæmorrhage has been over-estimated. A temporary tampon will control deep hæmorrhage, while in bleeding from the pia mater the vessels may be secured

with ligatures or serefines. In brain abscess consequent upon middle ear disease the best point to trephine according to Bergmann, is above and behind the ear. Macewen proposes a second counter-opening on a level with the floor of the abscess.

Brain Tumors. The principal features of the growths which produce symptoms are, location, size, character, rapidity and manner of growth and extent to which they effect surrounding brain tissues. Considered in their surgical relations we may, with Bergmann divide them into (a) the circumscribed or encapsulated, and (b) the infiltrated or diffuse around which as a rule, there is a zone of softening. A third class may be mentioned; that is, those growing from the interior of the cranium, from the bone or dura.

If a reasonably satisfactory diagnosis can be made, it must be indeed an extensive growth of the cranial vault, which shall contra-indicate operation. The question of what and how many brain tumors are operable has been best answered by White. He found in one hundred brain tumors met with in the dead room of Guy's Hospital, that only nine could have been removed, — one tuberculous nodule, four sarcomas, two undetermined tumors, one cyst and one myxoma. Nine per cent. could have been attacked, providing a fairly accurate diagnosis had been made. Of these nine tumors, five were located in the cerebellum, one in the frontal lobe and one in the extremity of the occipital. It is doubtful whether these seven could have been recognized accurately enough during life to justify operation; while the myxoma was impossible to diagnose. It is thus seen that by no means all tumors which can be diagnosed can be deemed suitable for operation.

Operation for Intracranial Tumors. The head should be shaved two or three days before operation, washed with green soap and ether, and antiseptic compresses applied. Chloroform should be, as a rule, the anæsthetic on account of its contracting influence on the vessels of the brain. Morphia hypodermically and ergot may be resorted to for the same purpose. The author suggested that after localizing the lesion, a small, disinfected, headless tack be driven through the scalp into the bone at the point determined upon. After the dissection of the external flap, this will point out accurately the point to be first attacked. In order to prevent hæmorrhage, the author had found a spray of antipyrine solution (1:40) of service. The semilunar flap is the proper shaped one to raise. Its apex should be in such a position as to allow of drainage with the patient on his back. The periosteum should preferably be raised with the flap. The use of the trephine is preferable to the hammer and chisel. Since Macewen has taught us how to preserve the fragments of bone and restore them to their place, his method has been widely tried and universally commended. The dura mater should be incised around a large part of the area at a distance of one-eighth to one-fourth inch from the edge of the bone. The appearance of the dura is sometimes a guide to trouble beneath. In recent cases, it is sometimes highly vascular; in old cases, it may be yellowish or discolored, wherever adherent it should be freely excised. Horsley claims that marked protrusion of the dura indicates pathological intracranial tension. The color of the brain should be noted, remembering that the cerebellum has normally a different appearance from the cerebrum. Sometimes where there is uncertainty as

to which convulsion is the desired one, the battery may be employed. Where no indication of lesion is found, further exploration may be conducted with a small aspirating needle or a blunt probe.

Should a tumor be discovered, the incisions for its removal should be made perpendicularly to the cortex for the purpose of avoiding hemorrhage and division of the conducting fibres. Removal of a layer of cortex whether normal or abnormal does not leave, as one might fear, a prominent gap with vertical sides, since in a short time the depressed portion is made to bulge almost to the level of the intact parts surrounding. In addition the cut edges are also slightly everted and if less brain is removed than bone, the edges are extruded into the opening in the skull; thus there is a continual normal tendency to hernia; but Bergmann and others have shown that this tendency to hernia-cerebri is in inverse ratio to the area of bone removed. Experience has taught that it is wise to remove brain tissue to an extent greater than was at first considered justifiable. In all operations for epilepsy, the portions of cortex nearest the evident lesion should be freely removed.

The matter of drainage must be determined according to the circumstances of the case. An abscess must be drained as long as pus is discharged. After the antiseptic removal of a tumor, the cavity should seldom be drained for more than twenty-four hours. The provision for drainage may be removed on the second day, and the wound dressed with reasonable pressure over the flap. Exudation naturally collecting in this cavity, will be retained and will give rise to some pain and disturbance, but so long as the symptoms from this are not severe, the wound may be left with confidence that the fluid will be reabsorbed, and that the pressure will be the best check to protrusion.

Dangers of the Operation. The principal immediate dangers are two: hemorrhage and oedema. Hemorrhage from the pia or from the brain substance is usually readily controlled, but disastrous hemorrhage may occur from unexpected sources. When there is bleeding, a temporary tampon of iodoform gauze may be applied. The dural and skin flaps are laid over this and an absorbent dressing applied. At the end of forty-eight hours this may be removed and sutures inserted.

The second danger: that of acute brain oedema may be brought about either by increase of intra-arterial pressure or by obstruction of the venous channels of escape. Under this accumulation the brain becomes more sodden. Removal of a portion of the cranium is virtually a diminution of the pressure normally exercised on its contents and is often followed by reaction with production of excess of fluid.

The author had collected reports of sixty-three cases which were presented in summary and in tabular form. Seventeen of these terminated fatally although only five of these deaths could properly be attributed to the operation. Fifteen of the cases were abscesses, subdural or sub-cortical. In eleven cases the lesion was a tumor, exclusive of tubercular nodules. Of cysts properly speaking, there were twelve. The five other cases were of a miscellaneous nature. In three cases, the true character of the lesion was not revealed during the operation, and was only discovered at the autopsy. In two cases, in which no palpable or visible lesion was discovered at the time of operating, the symptoms which led to the performance of the

operation were nevertheless relieved, though nothing but careful exploration was practised.

Of the sixty-three operations, seventeen were performed by American surgeons. Those who have themselves operated more than once are, with the number of their operations: Macewen, twelve; Horsley, eleven; Bergmann, four; Weir, three; Keen, three; and Park, three.

GENERAL DISCUSSION.

DR. DAVID FERRIER said that he took special pride and satisfaction in the fact that this subject had been assigned such an important place in this great gathering of the profession in this country. He had long cherished the idea that the determination of the functions of the brain would in time lead to the successful treatment by surgery of some of the most distressing ailments or our fellow-creatures. When he first broached the possibility of this he received little encouragement, but now cerebral surgery had become a distinct branch of the art of surgery. There is a great future for cerebral surgery. We must, however, be cautious lest we do things which our better judgment and larger experience may not consider altogether justifiable. While there have been many successes, yet there had been some failures. He alluded more particularly to cases of Jacksonian epilepsy. The discharging lesion has been removed in many of these cases without permanent cure. Care must also be taken that in curing one affection we do not induce a greater evil. There is yet much to be learned in regard to the functions of the brain, and in regard to the diagnosis of cerebral disease.

MR. VICTOR HORSLEY described briefly the results of his experiments upon the motor region. He believed, however, three functions were clearly represented: (1) the representation of the so-called tactile sense; (2) representation of the so-called motor sense; and (3) the great representation of movement. It is found that morphologically the large cells in the fourth layer are concerned in the representations of movement, and he could not understand why we should not allot to the small cells in the upper layer the representation of sensation. He had divided the motor regions into minute areas, and studied the effect of irritation of these separate areas. He had found that the representation for any part was not limited to one minute portion of the brain, but that there was a focal point where it was strongest, and then it gradually diminished as we passed outwards. In his different experiments he had met with certain points of difference. These were attributable to the employment of different species of monkeys. He now uses only the bonnet monkey, and for all practical surgical purposes the results are perfectly applicable to man.

Experiments performed during the past summer had enabled him to prove that the convulsions of so-called Jacksonian epilepsy were solely due to the cortex, and not at all dependent upon the spinal cord or upon the bulbar spinal system.

In cerebral surgery we practice simply the ordinary rules of surgery. In cutting out the bone, a one inch trephine should be first used to determine the thickness of the skull. The surgical engine may then be used to cut almost through the portion of bone to be removed. The bone may then be removed with strong forceps. The dura mater should be first separated. If nothing is found, and the operation is an

exploratory one, the dura mater should be opened. If we propose to use faradism for the recognition of certain areas, it is important that the ordinary antiseptic solutions should not be applied to the brain, for they tend to prevent the response to the electric current.

Parenchymatous hemorrhage may be prevented by the use of morphia. The ligature must be always applied, if possible. Never pack the wound. In regard to the recurrence of epilepsy in operations performed for the relief of this affection, he considered that the recurrence was due to incomplete operation. In those cases in which he had removed to his own satisfaction not only the lesion but the surrounding brain substance for at least one centimetre, there had been no return.

He agreed with the previous speaker that there was danger of doing too much in certain cases.

CEREBRAL LOCALIZATION IN REFERENCE TO APHASIA.

by DR. M. ALLEN STARR, of New York.

It is evident from the statements just made that cerebral surgery has a great future, but is dependent on neurology for its guide. The burden of responsibility for future progress rests upon physicians, for diagnosis must precede operation. The great discoveries in cerebral localization, made in the past, have been reached by means of the collection and analysis of large numbers of cases of localized disease in man, rather than through physiological experiment. Future advance must be in the same line. Hence the importance, too much overlooked in this country, of recording carefully every case of cerebral disease. And to be properly recorded it must be carefully examined. This is especially necessary in the cases of disturbances of speech.

The history of aphasia presents three epochs: First, that of Broca, in which the fact was established that lesions of the third frontal convolution on the left hemisphere produced aphasia; secondly, that of Wernicke, in which a distinction between sensory and motor aphasia was drawn, and the former was shown in a few cases to be due to lesion of the first temporal convolution; thirdly, that of Charcot, in which the four mental elements of speech were carefully separated. Charcot says: "A word is a complexus; in it we can discover, in persons of education, four distinct elements: the auditory memory picture, by whose means we are able to grasp the sense of words heard, the visual memory picture, which enables us to comprehend the words written or printed; and also two motor elements, the motor memory of articulation, and the motor memory of writing, the first developed by the repetition of movements of the tongue and lips necessary to pronounce a word, the second by the practice of motions of the hand and fingers necessary for writing." Each of these memories being distinct can be lost. The result is disturbance of speech whose forms vary. The loss of visual memories produces verbal amnesia and word-blindness. The loss of auditory memories causes word deafness. The loss of motor memories of writing results in agraphia. The loss of motor memories of pronunciation produces motor aphasia. Individuals differ largely in the degree of cultivation of each of these memories, and hence suffer differently when affected by their loss; for example, the literary man presenting far more symptoms than a common laborer when his memories of

things read are lost. Another fact of importance is the independence of speech and thought. Aphasics may retain their musical faculties, and may sing when they cannot talk. Thinking, though largely done by the aid of speech, is not dependent upon it. We have memory pictures of the shape, form, sound and odor of objects independent of their names, and unless these are intact in the brain the perception of the object does not produce recognition of its nature or use, and does not awaken the memory of its name. The condition termed apaxia is found with aphasia in some cases, but not in all.

Turning from clinical distinctions to pathology, the localization of the various memories necessary to speech was discussed. Motor aphasia is produced by lesion in Broca's centre, or in the tract from that centre to the cranial nerve nuclei. If it is due to lesion in the latter it is temporary and accompanied by other local symptoms. The situation of the lesion producing motor agraphia is uncertain. Word-deafness is due to lesion in the first temporal convolution, and is associated with word-blindness when the lesion extends to the supra-marginal convolution and angular gyrus. All the cases of pure sensory aphasia in which the lesion was limited to these parts (forty-one in number) were collected, and a chart of the brain was shown to support the localization stated. The condition of apaxia was shown to accompany lesions situated in or beneath the angular gyrus.

The integrity of the connecting tracts between the various memory-centres is also necessary to the act of speech. These can be tested. Thus repetition after another, copying, writing at dictation, and reading aloud are acts involving two separate areas and their connecting tract. Lesions of these tracts produce disturbances of speech, some of which Lichtheim has described. But cases have not yet been sufficiently well tested to warrant any conclusions. The necessity of careful examination of all cases to detect various defects was dwelt upon, and the speaker closed by indicating how readily accessible to surgical interference the speech areas of the brain are.

DR. W. W. KEEN, Philadelphia, compared the head cavity to the other cavities of the body. The brain may be considered to be made up of a number of viscera having separate and distinct functions, and each of which has its own physical signs and symptoms. While we should be careful not to do too much we should not err in the other direction. The timidity with which the surgeon formerly approached the abdominal cavity was remarkable; the boldness with which we now attack the lesions of this cavity is almost appalling and the success equally gratifying. This history will be repeated in the case of the brain.

DR. ROBERT F. WEIR, New York, had since 1883 operated in ten cases of brain surgery. Three times for tumor; three for abscess; twice for hemorrhage into the cerebrum where there was no external injury to indicate its locality; once for epilepsy and once for cerebral pain. In the last case the tumor was so deep that there was nothing to indicate its presence after the brain was exposed. It was one and a half inches below the surface. The growth proved to be a sarcoma. The operation was done last November. The patient is still living but there are signs of a recurrence of the growth.

Bergmann says that operation should not be performed when the patient is in coma or where the

tumor is large. Dr. Keen has removed a tumor weighing over four ounces, with recovery, and Mr. Horsley has removed with success a tumor weighing four and a half ounces from a patient in a state of coma. Sometimes, although no tumor is found, the operation causes disappearance of the symptoms by relieving the pressure. This might be applicable in apoplectic hæmorrhage where the clot could not be removed.

I have gone over the brain to find what parts are accessible to surgical interference. We are able to strip up the longitudinal and lateral sinuses to a considerable extent. The dura mater may be separate for a considerable distance from the bone. He had been able to raise up the frontal lobe so as to see the anterior clinoid processes and he had been able to feel the foramen magnum.

Adjourned.

Thursday evening session was devoted to the Address of the President, DR. J. S. BILLINGS, on

MEDICAL MUSEUMS.¹

AMERICAN SURGICAL ASSOCIATION.

ANNUAL meeting, held in the main hall, Grand Army Building, Washington, D. C., September 18, 19, 20, 1888.

TUESDAY, FIRST DAY.—MORNING SESSION.

The Association was called to order at 10 A. M., by the President, DR. D. HAYES AGNEW, of Philadelphia.

The first business was the delivery of

THE PRESIDENT'S ADDRESS.¹

The next paper was that of DR. JOHN ASHURST, JR., Professor of Clinical Surgery in the University of Pennsylvania:

A CONTRIBUTION TO THE STUDY OF EXCISIONS OF THE LARGER JOINTS.

of which the following is an abstract:

The remarks which follow are based upon the records of 120 cases in my own practice, in which excisions of the larger joints have been required, and will refer particularly to the operative method, the after-treatment, and the functional value and limitations of applicability of excision in the case of each articulation. These 120 cases embrace 4 of shoulder-joint, 19 of elbow-joint, 40 of hip-joint, 51 of knee-joint, and 6 of ankle-joint excision.

Shoulder-joint.—My four shoulder-joint excisions have all terminated successfully. They all occurred in adults—three times in young persons, and once in an old person. The only case of special interest was that of a young married woman, aged thirty, admitted to the hospital in a very prostrate condition, with acute necrosis of the left humerus and consequent pyarthrosis of the corresponding shoulder-joint. The upper half of the humerus was removed at the first operation, and twenty-four days afterwards the entire remaining portion of the bone, including the condyles, the only osseous tissue left being a thin shell of small extent, which adhered to the periosteal sheath on the inner surface. The patient recovered rapidly and acquired a surprising amount of use of the affected limb, and

the increasing firmness showed that, at least, partial reproduction of bone was occurring. With the elbow supported, the patient could use her wrist and hand with considerable freedom.

In excising the shoulder-joint, or, more strictly speaking, the head of the humerus, for the glenoid cavity rarely requires more than superficial scraping or gouging, I have employed the method by a single longitudinal incision. I have endeavored to avoid wounding the tendon of the long head of the biceps, but when the parts are matted together by long-standing inflammation the tendon is difficult to recognize, and is often not seen until it has been severed.

In the after-treatment, I attach much importance to the use of the well-known cushion devised by Professor Stromeyer. It keeps the elbow out from the trunk, thus insuring the close application of the sawn humeral shaft to the glenoid cavity, and enables the patient to sit up or lie down at pleasure, without disturbing the dressings.

The functional utility of the limb after excision of the shoulder joint is, upon the whole, quite good. The operation, although seldom called for in civil practice, should be adopted without hesitation in suitable cases, such as those of suppurative arthritis, caries, and necrosis, in which the indication for the operation is found either in the pain or in the exhaustion from profuse purulent discharge. For plastic or rheumatoid arthritis, or for simple ankylosis, the operation is not to be recommended, for the mobility of the shoulder compensates measurably for the stiffness of the joint, and the gain which would be obtained by operation is not sufficient to justify the risk.

Elbow-joint.—Of the nineteen cases of excision of the elbow-joint, six have terminated fatally: two adults died within five days from traumatic gangrene following injuries so severe that amputation would have been the better operation; one died from delirium tremens, two from tubercular meningitis, and one, an old man, from exhaustion in the course of the fifth week.

In excising the elbow-joint I employ a longitudinal incision on the inner side of the articulation, taking care not to wound the ulnar nerve and to retain the attachment of the biceps. As a rule, all the articulating surfaces should be removed, and within reasonable limits; the more bone that is taken away, the better, since flail-like union is less to be dreaded than ankylosis.

For the after-treatment, I employ a somewhat obtuse-angled, internal splint (Physick's splint), well padded and protected by oiled silk. As bony union is to be avoided, it is not necessary to use a splint to render the part immovable. As soon as the external wound has become solid, the splint should be abandoned and the arm kept in a sling.

The functional result of a successful excision of the elbow is more nearly perfect than that of excision of any other articulation. Cases which justify this operation are those of destructive or gelatinous arthritis, caries, necrosis, compound dislocation, or fracture not so severe as to require amputation, and even simple ankylosis.

Hip-joint.—I have forty times resorted to excision of the hip-joint in thirty-seven patients. Twice have I excised, at intervals, both hip-joints in the same individual, and once have I had recourse to re-excision in a case in which recurrent caries and recontraction

¹ See page 271 of the Journal.

See page 205 of the Journal.

followed some months after the patient left the hospital. This case terminated fatally from suppurative osteo-myelitis and septic peritonitis at the end of a fortnight. Both cases of double excision did well. Of the forty operations, twenty-eight have been followed by recovery, eleven by death, and one is still under treatment. Of the thirty-seven patients, twenty-five have recovered and eleven died. Should the patient now under observation die, the mortality rate will be, as regards operations, 30%; as regards individual patients, 32.4% — a better showing than the results given by most statistical writers.

The incision employed begins with a straight cut in the direction of the fibres of the gluteal muscle, curves around and behind the trochanter, and terminates again in a straight cut corresponding to the axes of the femur. While affording free exposure to the joint, it necessitates but little transverse division of muscular fibres. The head of the bone may be made to protrude and removed with the chain-saw, or, under other circumstances, divided by a small saw *in situ*. It is my custom to remove both trochanters and round off the sawn end of the femur.

In the after-treatment I keep the limb well adducted with simple weight extension, with lateral support by sand-bags. As soon as the external wound has become solid and the patient can control the motions of the limb, he may be allowed to get about on crutches.

The functional result of hip joint excision must be somewhat differently judged from that of excision in the case of other articulations. In most instances the operation is performed only when death seems threatened by profuse suppuration or its consequences, and if the patient is relieved of pain and restored to a fair state of health and comfort the treatment is amply justified. At the Children's Hospital in Philadelphia, where twenty of the forty operations were performed, the rule is not to operate except in otherwise hopeless cases, and hence our recoveries represent so many lives saved, but in many cases excision not only saves life, but restores the patient to the active duties of existence. In thirteen of the twenty-eight cases the patient obtained a useful limb, and in two of these the utility is qualified as perfect. The condition which most often calls for this operation is "hip disease." I consider the operation suitable in certain cases of gunshot injury. For uncomplicated ankylosis it is not to be recommended, simple osteotomy being here a safer and surer method. Where ankylosis co-exists with extensive caries or necrosis, excision may properly be resorted to. I am afraid that the "age limit" for hip-joint excision must still be maintained. In the case of the knee, I have ventured to extend the benefits of this conservative procedure to adults and even to middle-aged persons, and with great success. But excision of the hip-joint becomes an operation of great and rapidly-increasing gravity when once puberty is passed. Thus, while I count twenty-five successes and only four deaths in persons under fifteen years of age, I have had only three recoveries and no less than seven deaths in those older. In adults the operation should only be undertaken with a clear understanding of the very great risks by which, under these circumstances, it is attended.

Knee-joint.—I have performed fifty-one excisions in fifty patients, once having employed re-excision for ankylosis with recurrent deformity in a case in which I had excised the joint nine years before. Once I ampu-

tated the thigh, ten weeks after excision on account of beginning failure of health, and a good recovery followed. Of the fifty-one cases but five have ended fatally, a death-rate of less than ten per cent.

In excising the knee-joint I have uniformly adopted the single transverse incision, and have invariably removed the patella. The bone sections are commonly made with a butcher's or bone saw. I take particular care to remove all of the diseased synovial membrane, as well as all patches of carious bone. In treating the large bursa beneath the quadriceps muscle I have endeavored to hasten the cure by making a long incision on the outer side of the limb, and either dissecting the bursa out bodily, or else scraping away its lining membrane with a sharp curette. If foci of softened and carious bone are found beyond the points at which it is safe to use the saw, I remove them with the gouge, and, if necessary, cut a channel through the osseous wall in such a way that the part may heal firmly without leaving a sinus.

In the after-treatment I employ a bracketed wire splint, which, while firmly fixing both thigh and leg, enables the limb to be dressed as often as is needful without causing the patient pain. I have left the limb on the splint as long as six or seven weeks. After bony union is well advanced and the external wound is almost healed, I substitute a simple posterior splint or gutter of pasteboard. I think it important to use means of mechanical support for at least six months, particularly with children.

The utility of the limb after successful excision of the knee is very great. The limb is stiff and slightly shortened, the foot is sometimes a little inverted, but the limb is strong, painless and enduring, and enables the patient to lead an active, useful life. As a substitute for amputation, and it is as such that I employ it, the merits of knee-joint excision cannot be gainsaid.

The cases in which excision of the knee-joint is indicated are chiefly those of arthritis, particularly of the variety for which years ago I suggested the name of gelatinous, of caries, of neglected epiphysitis, etc. The operation may properly be performed in ankylosis with deformity, and also in certain instances of wound of the articulation where the extent of the injury is limited. In most traumatic cases, however, I believe that when any operation is called for amputation will be found preferable.

Ankle-joint.—I have resorted to this operation six times, although about as often I have removed the astragalus without interference with the tibia and fibula. Two of the six cases proved fatal from phthisis, one four months and the other nine months after operation. My impression is that this operation in itself is attended with very little risk.

In excising the ankle-joint, I make an external incision curving around behind and below the outer malleolus, and carried forward as far as can be done without endangering the extensor tendons, and prolonged upward as far as useful in the line of the fibula. A second smaller incision is made longitudinally over the lower end of the tibia. It is usually desirable to remove the whole astragalus. This is perhaps the most tedious and difficult of all excisions, and the operation may be facilitated by rendering the part bloodless by the use of the Esmarch apparatus. The ankle-joint is the only joint, with the exception of the wrist, in the excision of which the use of this apparatus seems to me to be desirable.

Some years ago I devised a bracketed splint for the after-treatment of ankle-joint excisions. This answers a good purpose. If antiseptic dressings are used, however, the part usually requires so little disturbance, that a simple posterior gutter of pasteboard, supplemented by a fracture box, will be sufficient. The foot should be kept at right angles with the leg.

The cases which seem to me to call for ankle-joint excision are those of compound fracture and dislocation, less severe than to require amputation, and those of localized caries and arthritis in which there is no suspicion of general tuberculous infection.

The large majority of my excisions have been performed without any of the so-called "antiseptic precautions," and the wounds have been dressed with simple oiled lint, or with lint saturated with dilute alcohol. For more than a year past, however, I have employed the antiseptic method in almost all my large operations, using also antiseptic dressings in their after-treatment, and I think with benefit, though I am obliged to say that, as regards the ultimate welfare of the patients, I have not noticed any gain. My best series of consecutive successes have been obtained under old methods, and I have not obtained any diminution of mortality by the adoption of the new. At the same time I have seen no ill results which could be attributed to the use of antiseptic measures. Their use shortens the period of convalescence, and they have the merit on account of the infrequent change of dressings needed that they greatly lessen the surgeon's labor. I know of no cases which require more personal and unremitting attention than those of excision, and it is an unquestionable advantage to be obliged to dress a wound only once a week, or every other week, instead of daily or every other day.

What will be the future of the operation of articular excision? The brightest triumph of conservative surgery in the hands of Fergusson and his successors, will it keep its place? or as some of our more enthusiastic brothers prophesy, will improved methods of dealing with joint disease in its early stages, make excision a matter only of surgical history and of antiquarian investigation? It seems to me that as the introduction of excision did not enable surgeons to abandon amputation for articular lesions, so, improve treatment as we may, and educate the public as we may as to the necessity of being treated early, there will always remain a class of cases in which only by sacrificing a part can we hope to save the whole, and in which excisions of the larger joints will, therefore, still be resorted to by judicious and conservative practitioners.

DISCUSSION.

DR. LEWIS A. SAYRE, of New York: The paper of Dr. Ashhurst has so thoroughly covered the ground that very little is left to discuss. In excision of the hip-joint, I have been in the habit of using the wire cuirass, for the reason that it permits the carrying of the patient into the open air—an object not readily attained when the patient is kept in bed with the ordinary apparatus.

In regard to the antiseptic treatment, which I practice entirely, I think that I may claim that I have used it, without knowing it, from the time that I commenced practice of surgery. I think that my success has been largely due to the practice of pouring into the wound Peruvian balsam, which, from the creosote it contains, is an excellent antiseptic. I have, also, always ar-

anged for thorough drainage. When I practised my first excision in 1854, the operation was universally condemned. Some seem to now be going to the other extreme, and performing excision of the hip-joint too early, before a thorough trial of local and general treatment has been employed.

DR. R. A. KINLOCH, of Charleston: There is now no disagreement so far as to the general question of excision is concerned, but there are still some important questions to be considered. In the first place, the distinction of traumatic from pathological cases amenable to operative procedure, and, in the next place, as regards the joints, which are apt to do best in connection with excision for traumatism and for pathological processes. A consideration of the age and surroundings of the patients is of importance. Probably the best results follow excision in connection with shoulder-joint excision for traumatism. In connection with gelatinous inflammation of the elbow-joint, I have had satisfactory results, even where all the material could not be removed. I feel sure that if a few of the principles of so-called antiseptic treatment—cleanness, thorough drainage, and absolute rest—are adopted, many of the details may be omitted.

DR. T. F. PREWITT, of St. Louis, insisted on the necessity of getting cases of excision in broken-down children out-of-doors as soon as possible.

DR. F. S. DENNIS, of New York, called attention to cases of excision of knee-joint for disease beginning in abscess of the condyle. In these cases the abscess-cavity breaks down after recovery, leading to the production of deformity. In these cases he takes away all of the abscess-cavity, saws away a corresponding piece from the tibia, and brings the oblique surfaces together.

He has been in the habit of employing antiseptic dressings, removing the drainage-tube on the third day, allowing the first dressing to remain for five or six weeks.

In excision for injury, only enough bone to allow of free drainage should be removed.

SIR WILLIAM MACCORMAC, of London, said he had heard with some surprise that the tendency seemed to be to postpone excision of the hip-joint until all other measures had failed. This is not the routine practice in regard to any other joint. In England, the disposition is to perform the operation at an earlier period. Another point that he had not heard mentioned in the paper was in reference to the performance of operation in cases of old dislocation of the joint. He had performed this operation with success in old hip-joint dislocations, and reported the case of a sailor coming under observation three years after the occurrence of dislocation of hip-joint, which had not been reduced. After the operation he could use the limb perfectly. He had been much interested in the recommendation of Dr. Ashhurst, that a long incision be made to reach the subcutaneous bursa, a suggestion which he had not heard mentioned by any other surgeon.

DR. E. M. MOORE, of Rochester, expressed surprise to find a certain amount of indifference manifested towards the use of antiseptic surgery. He had found, in his practice, the greatest improvement follow the use of antiseptic dressing in these cases of excision.

DR. JOHN E. OWENS, of Chicago: He agreed as to the value of the wire cuirass, and referred to a modification of this apparatus, consisting in the substitution of a frame of gas-pipe conforming to the outline of the

body. On this the body is supported by means of flannel stretched between the two sides of the frame. Extension may be applied, if desired, by the use of adhesive plaster, counter-extension being provided for by elevating the foot of the frame. After keeping the patients in bed for thirty days, he tries to get them into the open air. He had found great advantage in keeping up a certain amount of extension after the patient was allowed to get up. By removing pain, this enables the patient to move the joint more freely, and thus tends to favor greater mobility of the part. He thought that there was no comparison between the antiseptic methods and those formerly employed.

Dr. FRED. LANGE, of New York, referred to a class of cases in which the disease of the hip began in the tissue outside of the joint, the articulation becoming involved at a later stage of the affection. In these cases he recommended early operation, with the hope that in this way necessity for opening the joint would be avoided.

AFTERNOON SESSION.

The Association was called to order, at 2 P. M., by PRESIDENT AGNEW. The first paper was entitled

THE RELATION OF MICRO-ORGANISMS TO INJURIES AND SURGICAL DISEASES.

by DR. NICHOLAS SENN, of Milwaukee.

The paper was so extensive, that in the limited time allotted to its consideration the author was able to refer to but few of the points which it contained. At the present time, no argument is required to show that many special conditions are due to the presence of bacteria. In regard to the so-called hereditary transmission of disease, the author held that the specific microbes of the specific diseases are transmitted directly from parent to child. In evidence of this, he referred to cases of so-called hereditary osteomyelitis in newly-born infants. In other cases, while this same origin may be inferred, we have as yet no direct evidence that such is the case. In regard to the question whether or not pathogenic micro-organisms exist in the healthy body, while the results of some observers point in this direction, the results of others are opposed to the existence of pathogenic organisms in the healthy body. The conclusion was that, under certain circumstances, pathogenic organisms might be present. There is proof of this in cases in which, after accidental injury, there is localization of these pathogenic organisms. Acute, suppurative, infectious osteomyelitis following slight injury or exposure was cited as an illustration of this fact. This localization is favored by certain anatomical conditions. The antagonism among micro-organisms was being considered when the time of the author expired.

DISCUSSION.

Dr. ROSWELL PARK, of Buffalo, had done some work in this direction. He had examined pus from fifty-two sources, and presented a table showing the number of cases in which pyogenic bacteria were found.

He had also prepared culture media with various antiseptics in different proportions, including carbolic acid, iodoform, iodine, naphthaline, hydro-naphthol, resorein, trichlorophenol, creoline, sulpho-carbolate of soda, boric acid, perchloride of iron, antipyrine, antifebrin, and quinine. Almost the only one of these antiseptic jellies, as thus prepared, which has prevented all

growths was hydro-naphthol, 1:100. This shows that hydro-naphthol can be relied upon as antiseptic. Many of the bacteria grow freely on iodoform jelly 1:100. Those which grew abundantly on iodoform jelly grow slightly on oxide-of-zinc jelly 1:100. Oxide of zinc was considered a better solid antiseptic than iodoform. The author thought that our present knowledge permitted us to associate certain bacterial forms with definite pathological lesions. In conclusion, he presented the report of a case of abscess of the face, in which he found the micrococcus tetragens. So far as he knew, this micro-organism had never before been found in phlegmon in man.

Dr. Wm. H. CARMALT, New Haven, remarked that there was only one point to which he wished to refer, that was reference to the alleged microbic origin of tumors. A great deal has been said in regard to the microbic origin of cancers and other tumors. He thought that the division of Virchow's class of granularomas into a class of tumors by themselves, known as infectious tumors, is correct. This class includes tubercle, syphilomes, lepra, lupus actinomycosis and myelitis. These growths should be taken out of the class of tumors and assigned to a class by themselves. He had been unable to convince himself that tumors proper have a bacteriological origin.

Dr. N. SENN in concluding the discussion, said that the diseases enumerated in his paper, included only those in which the specific cause had been isolated, cultivated outside of the human body, and in which the injection of this culture produced identical lesions. When these three things are done we have furnished positive proof that the disease is due to specific germs. Another class of diseases had been alluded to in the paper in which there was reason to believe from analogy that the affection was due to specific germs although the three conditions above referred to had not as yet been fulfilled. So far no one had been able to show that the supposed bacillus of syphilis was the specific bacillus. That it is a specific disease cannot be doubted; that it is due to a microbe cannot be doubted, but to establish this positively, experimenters must do what Koch did before he announced the specific origin of tuberculosis.

He was firmly convinced from his observations that tumors in the true sense of the word were not due to microbes. He had made tumor implantations for many years in animals, and in justifiable cases in man, both close to the original seat of disease and at remote points, without obtaining the least evidence of the *microbic origin* of disease.

Dr. W. W. KEEN, of Philadelphia, then read a paper entitled

THREE SUCCESSFUL CASES OF CEREBRAL SURGERY;

including (1) the removal of a large intracranial fibroma; (2) excision of damaged brain tissue; and (3) excision of the cerebral centre for the left hand; with remarks on the general technique of such operations.

CASE I. Large tumor in the cerebrum probably arising from an injury at three years of age; epilepsy and hemiplegia at twenty-three; tumor removed at twenty-seven. Hernia cerebri; recovery. Sent to me in May, 1887, by Dr. M. L. Davis, of Lancaster, Pa.

The young man, aged twenty-seven, at three years of age, fell several feet striking his head on some bricks. At five, following the measles, he had a discharge from the right ear which has continued at

times ever since, and has impaired his hearing. His mental development during childhood was probably somewhat imperfect. In February, 1885, epilepsy with intense pain in the head supervened. About April right-sided hemiplegia was complete with aphasia; the right pupil was largely dilated and irresponsive to light; vision imperfect.

Dr. Davis made a diagnosis of pressure on the anterior lobe of the left hemisphere from exostosis, tumor, or possibly only a thickening of the dura mater; syphilis excluded.

After treatment with iodide of potassium and arsenic, he improved so far that by the summer of 1885, he had recovered from everything except the epilepsy and the aphasia. Both eyes became blind during this summer, but they improved to such a degree that he could write a letter. Urine was normal.

May 30, 1887. When first examined by Dr. Keen, the only remnant of his former state was epilepsy, hesitation of speech and headache, with the utmost cerebral discomfort. In the attacks the eyes, head and neck turned toward the right, while his body was twisted to the left; right pupil larger than the left; convulsions general. With the right ear the watch was heard at four inches, and the membrane was partly destroyed; left side, watch not heard on contact, membrane thickened. Dr. Oliver found only right-sided fields of vision, arrow-head shaped, with only perception of form, and paresis of the right interni and left superior and inferior recti and post neuritic atrophy.

A small scar was finally settled upon as that resulting from the accident, a half inch above and in front of the left superior stephanion, two and one-quarter inches to the left of the middle line, and three inches behind the external angular process. The temperature on this side was one degree (C.) higher than on the right. Dynamometer recorded 30° for the right hand, and 35° for the left. Knee-jerk, left, normal; right subnormal.

Diagnosis was a probable tumor at the base of the frontal convolution, involving the centres for the leg, arm, face and speech. The operation was done December 15, 1887. The following was the method of preparation for this and all the other operations.

The room was uncarpeted and contained only necessary furniture. The walls and ceiling were carefully wiped the day before, and all the wood-work and furniture as well as the floor were thoroughly scrubbed with carbolic solution. New, clean, disinfected sponges with sublimate solution were used, the proportion being 1 to 1000. In the first operation all the instruments were boiled for two hours, but in the second and third they were placed in a solution of carbolic acid, 1 to 20, for half an hour, then were transferred to boiled water which had cooled sufficiently to permit of their being handled. No spray was used at the second and third operations, but at the first it was used in the room during the morning of the operation.

The day before the operation the patient's head was shaved, then scrubbed with soap and water, then with ether and covered with a wet sublimate dressing, 1 to 1000, which was retained in its place until the operation, when the ether and sublimate washings were repeated. The hands and finger-nails were carefully cleaned and disinfected with soap and water, then with pure alcohol and sublimate solution.

A tick was first made in the bone at the site of the scar, by means of which later the situation of the tumor was accurately determined. This was done by fitting the disk of bone to the surface of the tumor, making measurements to the edges of the tumor from the nick and transferring these to another skull. An inch and a half trephine was then applied and the opening thus made disclosed at once the tumor. The opening was finally enlarged until it measured three inches antero-posteriorly by two and one-half transversely.

The tumor was now readily enucleated by the finger. Its weight was three ounces, forty nine grains. It displaced two and one-half ounces of water. Its size was two and seven-eighths by two and one-half by one and three-quarters inches. The circumferences were seven and one-eighth and six inches. It extended from just above the fissure of Sylvius to within three-quarters of an inch of the middle line, and from near the fissure of Rolando forward into the bases of the three frontal convolutions. In a normal brain it would have reached to the lateral ventricle and the upper and outer half of the corpus striatum. Microscopic section showed it to be fibroma.

Hæmorrhage was quite abundant and was checked with difficulty, Kocher catgut being applied to most of the vessels. Hot water (115 to 120°) and direct pressure by sponges finally arrested it. Rubber and horsehair drainage and antiseptic dressings were used, and most careful antiseptics during the operation and subsequent dressing.

For a week he did very well, his temperature only reaching 100° F. A considerable clot disintegrated and was discharged by the drainage tubes. His mental condition was clear; no anaesthesia.

By the eighth day all but two of the sutures were out. His temperature, however, rose rapidly to 104.2°, with aphasia, hemiplegia and constipation, which was followed by diarrhoea with fetid stools. Fearing an accumulation of pus the wound was reopened to about half its extent disclosing a mass of tissue discolored and moderately vascular, resembling white brain tissue, but no pus existed.

In the next four weeks he had several attacks of fever, which were apparently caused by constipation, and by renewed discharge from the right ear. With each of these attacks of fever his aphasia and hemiplegia, which bettered with the fall of temperature, immediately increased. By the end of the fifth week, however, he had good movement of the right leg, and had nearly recovered the movement of the right arm. Finger flexion was slight; finger extension could be executed, but could not be repeated.

Reopening of the wound was followed by considerable hernia cerebri, for which, however, nothing was done save dressing it, at first daily, then at longer intervals, with corrosive sublimate dressing. The daily dressing at first was necessitated by a very abundant watery discharge oozing from two pin points, undoubtedly the cerebro-spinal fluid escaping from the lateral ventricle.

As the hernia showed no tendency to cicatrize, thirty-four skin grafts were successively applied. At the end of ten weeks cicatrization was complete, when immediately the state of the hernia changed from an elevation to a deep hollow. Nails on the right hand as shown by N.O. had only grown half as rapidly as those on the left. The temperature on the left side

was now 1.3° C. below that on the right. The dynamometer recorded 23° for the right side, and 30° for the left.

The tumor which proved to have originated from an injury at three years of age, and which, therefore, had been growing for twenty-four years, up to the time of its removal, gave no material signs for twenty years, when suddenly it caused epilepsy, hemiplegia and other phenomena as stated. The region involved in the normal brain can hardly be deemed an exact representation of the location actually involved, for undoubtedly the brain accommodated itself to the enlarging tumor, as they "grew up" together and the cortical centres, and, possibly, the great basal ganglia were displaced into regions that can only be guessed at.

The tumor histologically is very rare, only three fibromata appearing in the five hundred and eight intracranial tumors tabulated by Bernhardt and Hale White.

CASE II. Was a simple depressed fracture of the skull followed in four months by epilepsy; thirteen months later trephining and removal of damaged brain tissue; recovery in seven days; cure of epilepsy to date.

Dr. Keen pointed out that this patient should have been trephined immediately after the accident. Both the patients were present before the Association and examined with care. In the first case there have been several fits during the summer. In the second case there has been one very slight one since the operation, the result apparently of great disturbance from a death in the family.

The third case, involving removal of the centre for the left hand and wrist, followed by recovery, as well as a fuller history of two cases here briefly reported, may be found in the *American Journal of the Medical Sciences*, for October and November, 1888.

WEDNESDAY, SEPTEMBER 19TH.—SECOND DAY.—MORNING SESSION.

THE FORMATION OF AN ARTIFICIAL URETHRA FOR PROSTATIC OBSTRUCTION.

by DR. HUNTER MCGUIRE, Richmond.

It has been my lot to meet with a number of cases of hypertrophy of the prostate gland, which produce more or less obstruction to the passage of urine. These are conveniently divided into three classes.

(1) Cases where the obstruction was due to temporary congestion of an already enlarged gland which yielded to the ordinary treatment and did not return.

(2) A class of cases where the obstruction to the passage of urine was permanent but not great. Attention to the general health, the occasional introduction of the catheter and washing out the bladder were all that the cases required. These cases are, however, never free from danger from exposure, etc., and gradual enlargement may go on and bring about the condition met with in the third class.

(3) In these cases the obstruction is great and fixed, micturition is frequent and difficult, perhaps impossible without the aid of the catheter. The introduction of the instrument grows more and more difficult; offensive residual urine is always present, and the general health suffers greatly. Cystitis, localized or general, is a painful and pronounced symptom. Violent tenesmus of the bladder, provoked by the obstruction, injures the vesical ends of the ureters, possibly a reflex of stale urine is driven into these canals and ureteritis

follows, then pyelitis and pyelonephrosis, from which the patient dies.

The paper was devoted to a consideration of surgical interference in this third class of cases. He was led to resort to the measures described from the following circumstances: During the past eight months four cases of stone in the male required the suprapubic operation. Two because of organic stricture; one because of the large size and hardness of the two calculi the bladder contained; the fourth because the stone was large and hard and the patient too anemic to bear the shock and loss of blood which often accompanies section through the rectum.

In one of the cases of stricture, in a man sixty-five years of age, the patient had, two years before coming under observation, a second cause of obstruction. A well-organized stricture was found in membranous portion of urethra. Prostate was enlarged, more marked on the left side. Urine showed no evidence of renal disease. An oxalate calculus three-quarters of an inch in diameter was also recognized. The high operation for stone was performed. The bladder walls were found thick and unyielding, and contracted. The left side of the gland jutted into the bladder one and one-half inches further than the right side. The middle lobe was of the size of the thumb and almost completely closed the urethra. It was divided to retain a fistulous opening through which urination could take place. This tract was two and a half inches long and extended upward and forward. In its passive state it was closed by the pressure of the parts through which it passed. When the bladder became full and contracted, the urine was forced through the fistulous tract. He can now retain water for two or three hours, and has voluntary power both to retain and expel urine.

CASE II. Was a man sixty-nine years of age, who had been cut for stone in 1851. In 1883, I found the prostate enlarged and cystitis present. He was given a gum catheter and shown how to use it. In 1886, electrolysis was employed without success in trying to reduce the size of the prostate. July 4, 1888, an operation similar to that performed in the first case was done with equally good results. At times he is able to retain urine six hours. He never has any desire to empty the bladder, no matter how full the organ is.

Mode of Operation. The night before the operation the bowels are opened. On the day of operation fifteen to twenty grains of quinine are administered. Antiseptic precautions are adopted throughout. The bladder is washed out with a weak solution of carbolic acid in hot water. An empty gum-bag capable of holding twelve ounces is passed into the rectum. About twelve ounces of water are then introduced into it. This pushes the bladder above the pubes. The bladder is next filled with a hot solution of carbolic acid. The use of force should be avoided. The penis is tied with a piece of rubber tube to prevent escape of the fluid. A vertical incision is next made beginning three or four inches above the pubes and extending to the symphysis. This extends to the linea alba. The incision in the latter structure should be from three-fourths to one inch shorter than that through the skin. When the transversalis fascia is reached, it should be divided but not for more than two inches, but should reach to the pubic bone. The fat and cellular tissue between the transversalis fascia

and bladder, is separated with the handle of the knife. This tissue should be disturbed no more than necessary. The bladder is now drawn forward with a tenaculum and opened as low down as possible. The interior of the organ should be carefully explored with the finger. Sutures should now be applied extending down to, but not including the recti muscles. The opening left in the skin should be at the upper extremity of the wound, so that the fistula will be oblique and from two and one-half to three and one-half inches in length. A catheter is passed through this opening. If the catheter causes annoyance it may be at once removed, otherwise it is better to allow it to remain a few hours. The dressing consists of a pledget of absorbent cotton changed as often as necessary. In none of my operations have I met with the peritonæum.

In the after-treatment it is important to keep the urine acid, for acid urine is aseptic. In operating on these cases and in the high operation for stone, the amount of blood lost has not exceeded two drachms.

SUPRA-PUBLIC CYSTOTOMY,

by DR. JOHN H. PACKARD, Philadelphia.

The present paper was supplementary to one on the same subject read by Dr. Packard at the last meeting, and was intended to correct an accidental omission of the views of Dr. Henry Thompson. These were now considered extensive quotations from the works of this author being given. Two cases were reported, in one of which the operation was performed for the removal of a portion of silver catheter broken off in the bladder; and in the other for the removal of a piece of rubber catheter said to have been broken off several months previously. In this case a stone weighing 571 grains was removed, in the interior of which was found the *foreign body*.

DISCUSSION.

Dr. S. W. GROSS, Philadelphia, thought that Dr. McGuire was to be congratulated on having introduced a new operation based upon the mechanism of the bladder and the physiology of micturition; the formation of a artificial urethra in a new position. The various operations which had been performed for the relieve of prostatic obstruction were next referred to, the operations of Harrison, Mercier, Bartolini and McGill, were considered.

Dr. WM. T. BRIGGS, of Nashville, thought that perhaps in the cases reported by Dr. McGuire, a better result might have been obtained by lateral lithotomy provided the stone were not too large to be removed by that route, for he had noted that after incision into the prostate the gland diminished in size and after the wound had healed a catheter could be passed in cases in which its use was before impossible. The perineal operation allows of freer drainage. Under some circumstances the supra-pubic operation is a valuable one. This is especially the case where the stone is so large that its removal through the perineum is liable to produce serious injury to the soft parts. It is, however, often possible through an incision in the perineum to so break the stone as to permit its removal. Every case should be studied by itself; in some, one operation is the best, in others, another is most suitable. All the circumstances of the case must be taken into consideration.

MR. REGINALD HARRISON, Liverpool, said that there are two general methods of relieving obstruction

due to enlarged prostate, one by attacking the gland through the bladder, and the other through the perineum. In his operation he makes a median or lateral incision through the perineum according to circumstances. The obstructing prostate is next divided with considerable freedom and a drainage-tube of considerable size introduced; from this operation he gets good results. Perineal lithotomy is preferable to the supra-pubic operation because the lateral incision gives sufficient room for all manipulations. It gives an ample opening for the removal of a stone of considerable dimensions. It also permits of the more or less permanent drainage which these cases require. He had also through a perineal opening used the perineal lithotrite with success. All methods of operation should be remembered and each employed in those cases where it seems indicated.

PROF. THOMAS ANNANDALE, Edinburgh, had come to the conclusion that if an operation is to be performed for the relief of prostatic obstruction, the perineal operation is the best. This allows of examination of the bladder, permits drainage and probably causes a diminution of the hypertrophy. It enables you to occasionally remove a portion of the enlarged prostate when this assumes a pedunculated form. The speaker exhibited a rubber tube which he had found useful in cases of Harrison's operation, where a permanent tube is required.

DR. A. VANDER VEER, Albany, said that the testimony presented in his paper last year was in favor of the perineal opening so far as drainage was concerned. He had employed Harrison's operation in a number of cases and the results had been such as to impress him favorably.

MR. ARTHUR DERRHAM, of London, emphatically endorsed what had been said in regard to operation of stone; that no one operation is applicable to all cases. It is a great mistake to be men of one method, especially in surgery. When we hear a man say that he treats all his cases of fracture in such a way, all his cases of stone in such a way, and all his cases of prostatic disease in such a way, we may be sure that such a man has a very small practice and experience, or else is a very great fool. In cases in which stone in the bladder is complicated with enlarged prostate, the perineal incision seems to him to be better than the supra-pubic. He described a method of performing perineal lithotomy which is performed with satisfaction at Guy's Hospital. This consists in the use of a straight staff, the groove extending to within one-third of an inch of its extremity. A knife with a straight back is passed through the perineum until it reaches the groove, then carried along the groove to its extremity and the point of the knife being held in close contact with the staff, the two are carried forward into the bladder, thus avoiding many of the risks of the operation as ordinarily performed. In concluding, he referred to the great improvement of the Bigelow operation over the old method of crushing for stone. He had no doubt that this method rendered both lateral and supra-pubic lithotomy much more rare than they have been in the past.

PROFESSOR RINGSTON, of Montreal, believed that the supra-pubic operation was one to be performed only in exceptional cases. These he classified as follows: (1) In those cases of stricture in which the obstruction cannot be overcome in time to relieve the patient of great suffering. (2) In cases of prostatic

obstruction. (3) In cases of tumors of the bladder which would interfere with the lateral operation. (4) In cases where the stone is too hard or too large to be removed either by lithotripsy or by lateral lithotomy. He had himself removed without injury to the soft parts, a stone weighing five ounces and five drachms.

SIR Wm. MACCORMAC, London, had performed the operation of supra-cystostomy occasionally. He had never seen any untoward consequences and the operation seems to be devoid of all risks. He did not consider that drainage was necessary after this operation. The bladder empties itself freely and the drainage-tube is a source of irritation.

DR. HUNTER MCGUIRE, said that the only object of his paper was to describe the two cases in which he had made an artificial urethra to relieve prostatic obstruction. The various operations referred to were not applicable to all cases while the formation of an artificial urethra could be done in all cases. He was surprised to hear that supra-pubic cystostomy was considered dangerous. It had the advantage of avoiding some of the unpleasant consequences of the lateral operation such as dribbling of urine and impotence.

DR. J. H. PACKARD, did not want to be considered as an advocate of supra-pubic cystostomy. It had, however, been shown that the dangers attributed to this operation, did not exist. He considered that the operation was a valuable resource in certain cases. After this operation he had noted diminution in the size of the enlarged prostate. This he attributed to the rest afforded the bladder. It will take place in whatever way the rest may be obtained.

The President, DR. D. HAYES AGNEW, being called upon, said the ground had been so thoroughly covered that there was little to be added. He agreed with those who held that no single operation was applicable to all cases. The supra-pubic operation may be appropriate in certain cases, while in others the perineal operation is the proper one. In order to avoid the unpleasant consequences which occasionally follow the perineal operation in children where the prostate is small, I avoid the introduction of the finger into the bladder and remove the stone with forceps not much larger than the staff.

While there may be no danger in the supra-pubic operation in skilled hands, yet with the inexperienced operator there will be risk of opening the peritoneal cavity. He thought that a number of cases had been reported of rupture of the bladder following injection of the organ after dilatation of the rectum with the rubber bag.

A paper entitled

FORTY YEARS OF CHLOROFORM AND ETHER IN LOUISVILLE, KY.,

by DR. D. W. YANDELL, of Louisville, was read by title.

The following are the officers of the Association for the ensuing year:

President, DR. D. W. CHEEVER, of Boston. *Vice-Presidents*, DR. T. W. RICHARDSON, of New Orleans, and DR. JOHN B. ROBERTS, of Philadelphia. *Secretary*, DR. J. R. WEIST, of Richmond, Ind. *Treasurer*, DR. P. S. CONNER, of Cincinnati. *Recorder*, DR. J. EWING MEARS, of Philadelphia. Additional members of *Council*, DR. W. F. PECK, of Davenport, and DR. S. W. GROSS, of Philadelphia.

The next meeting to be held beginning the second

Tuesday of May, 1889, in Washington. Chairman of Committee on Arrangements, DR. J. S. BILLINGS, Member of Committee of Arrangements, DR. J. FORD THOMPSON, of Washington.

WEDNESDAY.—AFTERNOON SESSION.

THE SURGICAL MANAGEMENT OF TYPHILITIS AND PERITYPHLITIS,

by DR. W. T. BULL, New York.

The author reported seventeen cases operated on by himself. These he divided into three groups. The first, including ten cases in which abscess was opened by incision without opening the general peritoneal cavity, at periods ranging from seven days up to six weeks from the beginning of the attack. All of these cases recovered. The second group included six cases in which laparotomy was performed seven times for supposed perforation (one patient being operated on twice). The earliest operation was at the expiration of thirty-six hours, the latest on the fifth day. Death occurred in two of these cases, one from incomplete operation, and the other from imperfect technique. The third group contained but one case, but the author hoped that in the future more would be reported. In this case laparotomy was performed in the presence of threatening symptoms on the twelfth day of an attack of perityphlitis. No pus was found, and no signs of recent peritonitis. The appendix was surrounded by old adhesions. The diagnosis of this class of affections was then referred to.

The operations described were laparotomy and simple incision of the abscess. Antiseptic precautions should be adopted in both. The incision for laparotomy should begin a finger-breadth above the right of Poupart's ligament, and extend upwards four inches. The peritoneum should be divided at the lower angle of the wound. Adhesions are then separated and any pus found evacuated. The intestines should not be allowed to escape through the wound. The region behind the cæcum must be carefully examined. If there is perforation or gangrene of the appendix it should be removed at its junction with the cæcum. After thorough washing out of the cavity, a drainage-tube should be introduced, passing to the bottom of the iliac fossa.

For opening an abscess, the incision should start from the point before mentioned, and continue either parallel with the ligament or more vertical, according to the position of the abscess. Incision may be required above and parallel with the crest of the ilium if the maximum of tumefaction is found there.

A brief report of the cases operated upon was then given, and the following conclusions presented.

Our recent knowledge justifies the statement that both the cæcum and appendix may be the starting-point of an inflammation spreading to the peritoneum or to the peritoneum and cellular tissue of the iliac fossa, constituting a complicated lesion which, for convenience sake, we may call "perityphlitis."

This may be in its clinical course resolving or suppurative, each marked by definite symptoms in some cases, in others difficult to recognize.

Needle exploration is a justifiable and desirable method of diagnosis, though attended by some risks. These may be reduced to a minimum if care be taken to reserve the practice for cases where the symptoms have lasted several days, and where a distinct indication "tumor" can be made out.

Suppurative perityphlitis may be a spreading or limited (circumscribed) perityphlitis. Both begin with the same set of symptoms, and it is important to discriminate between them in the first twenty-four or forty-eight hours, or even on the third day.

The presence of any of the local or constitutional signs of general peritonitis justifies the diagnosis of a spreading or generalization, and calls for the performance of laparotomy and the repair of the lesions found.

The absence of these signs or their strict localization warrants delay of a varying length. Any time after a week the abscess may be opened by an incision which must reach the pus whether it be extra- or intra-peritoneal.

In doubtful cases the risk of the operation is less than the risk of the disease.

The propriety of exploring and removing the appendix in recurring cases must still remain *sub judice*.

THE PROPRIETY OF SURGICAL INTERFERENCE IN PERFORATING TYPHOID ULCER,

by Dr. J. EWING MEARS, Philadelphia.

The present state of our knowledge and our largely accumulated experience have enabled us to define with a degree of exactness the limits of surgical interference in certain affections of the abdominal organs. The researches of Senn have shown that complete extirpation of the pancreas is invariably followed by death, while partial excision is a feasible operation. We are also able to define the limits of operation in affections of the spleen and kidneys. We may venture to approach the discussion of operative interference in perforating typhoid ulcer with the feeling that here we may be compelled to define a limit to the employment of surgical measures, not without regret at our inability to overcome the barriers which oppose success, but with a desire to maintain always the good repute of surgical science and art.

A clear distinction must be made between the widely different conditions which precede and follow perforation in typhoid ulcer and in ulcerations of the intestinal canal due to other causes. In typhoid fever in addition to the intestinal lesions, there is a general degenerative process involving all the important organs. In traumatism the general condition of the patient may be good. In inflammatory conditions, while the general system may be profoundly impressed, the lesion may be regarded as local in its nature. In diseases of a chronic character, the system has accommodated itself to the impression made by the morbid affection, and the degenerative changes which may occur are not usually general in character.

The symptoms are usually quite distinctive. Death, as a rule, occurs on the second or third day, rarely the fatal result may be postponed two or three weeks, and instances are recorded in which recovery has taken place, adhesions having occurred between the edges of the perforation and adjacent parts.

A careful search of current medical literature reveals but four cases of surgical interference in perforating typhoid ulcers, in all of which a fatal result occurred. The reports of these four cases were given in detail. These cases were operated on by the following surgeons: Professor Kussmaul, of Strasburg; Mr. T. H. Bartlett, of Birmingham; Dr. R. B. Bontecou, of Troy, N. Y.; and Dr. T. G. Morton, of Philadel-

phia. In Professor Kussmaul's case the disease was severe and perforation occurred early, when the infective process was at its greatest height and the vital forces at the lowest point. In Dr. Morton's case the disease was mild, "a walking case." In both of these cases the shock consequent upon the perforation was prompt and profound. In the first case operation was performed within a few hours, but death, without reaction from shock, occurred in eleven hours. In Dr. Morton's case operation was resorted to twenty hours after the accident. Six hours after operation the patient sank into a collapsed condition and died. The operations in these cases were performed by surgeons of experience, under strict antiseptic precautions, and within a reasonably short time after the accident. We must, therefore, look for the cause of failure in the systemic condition; the degenerated and devitalized condition of the organs and tissues caused by the infection process in active progress, utterly deprived of the power to resist the shock of operation; or in the condition of these structures beginning to recover from the effect of the poison in milder form, extremely sensitive to any rude impressions, and wanting in tone and power of resistance. It is in the latter condition alone that the surgeon may hope to achieve success by surgical interference, and then only when such methods are adopted as will reduce to the lowest point the shock of operation.

The following propositions and suggestions were offered:

(1) Surgical interference is not justifiable, and should not be instituted, in cases of typhoid fever in which perforation occurs, when the infective process is at its height.

(2) In mild cases of the disease, in which the pyrexia has not been of high grade, and in which perforation occurs at the end of the third week, or later, when the stage of convalescence is fully pronounced, laparotomy may be performed. Surgical interference in cases of this character is advocated, with the hope that if the method of operation suggested by Lücke—laparotomy, with the creation of an artificial anus—be adhered to, success may be attained.

(3) Rapidity of operation will be an essential factor in the achievement of success, through which prolonged exposure of the cavity will be avoided, and shock greatly lessened.

DISCUSSION.

Dr. B. A. WATSON, of Jersey City: In cases where perforation has occurred, the sooner operation is performed, the better. He considered that it is safer to make an exploratory incision than to use the needle. In regard to the paper of Dr. Mears, it covered the ground completely. In those severe cases of typhoid fever where perforation occurs and life is about ebbing away, it would be folly to resort to operation; but in mild cases, where perforation occurs, the operation should be done early.

Dr. R. B. BONTECOU, of Troy, N. Y., had performed the operation in one case of perforation in the third week of typhoid fever. The patient, however, died. He thought that it would succeed in some cases, as in those in which perforation follows imprudence during convalescence.

Dr. C. B. NANCREDE, of Philadelphia, thought that the proper place for incision was two inches to the right of the anterior superior iliac spine. He had

operated in two cases. In the first there was no pus, but three or four perforations were found. This patient recovered. The second case was that of a child operated on four days ago. The patient had done well since the operation.

DR. GORDON, of Portland, referred to the absence of symptoms met with in these cases, and cited a case in which the symptoms were not distinct, but in which a pint of pus was found, with general peritonitis and perforation of the appendix. In this case an incision on the right side would not have reached the pus.

DR. D. W. CHEEVER, of Boston, reported a case in which strangulation of an old hernia occurred in the third week of typhoid fever, the patient not being seriously ill. A simple incision through the sac was made and the bowel replaced, but the patient did not rally from the shock.

DR. W. H. CARNALT, of New Haven, referred to a case which had come under his observation with symptoms of internal obstruction. Operation was suggested, but refused. The patient died, and the autopsy showed perforation of the appendix, extravasation of fecal matter. The appendix was attached deep down in the pelvis, where there was a small collection of pus. This was reached only with the greatest difficulty, and after turning the intestines out of the abdominal cavity. This abscess was inaccessible to any of the ordinary methods of operation. The careful exploration of the rectum in this case failed to reveal any sign of disease.

DR. JOSEPH RANSOHOFF, of Cincinnati, thought that the general impression that perityphlitis is necessarily associated with perforation was an error. There are two classes of cases: In one there is a distinct tumor, and in these early operation is by no means indicated. In these cases adhesions have formed, and there is a natural tendency to cure. In these cases the abscess finally perforates the abdominal wall, or is relieved by incision. The second class is that in which the symptoms of perforation develop suddenly. In these cases the incision should be median.

DR. T. F. PREWITT, of St. Louis, thought that there must be many cases of inflammation in the region of the cæcum that never suppurate. He recalled a number of these cases, only two of which had died: one from perforation, and the other, an old man, from exhaustion incident to an intestinal affection. In almost all of these cases the patients had had three or four previous attacks.

DR. REGINALD H. FITZ, of Boston, held that the appendix was the seat of disease in the great majority of cases. The symptoms usually enabled the physician to make a correct diagnosis. The use of the exploring needle was not considered advisable. The cæcum can always be readily found by remembering that it is attached to the colon.

DR. GEORGE W. GAY, of Boston, remarked that in the cases in which he had operated, recovery had followed in those cases in which offensive pus had been evacuated; while in those where he had found only serum and flakes of lymph a fatal result followed operation.

SIMULTANEOUS LIGATURE OF THE RIGHT CAROTID AND SUBCLAVIAN ARTERIES FOR ANEURISM OF THE INNOMINATE,

by DR. J. H. PACKARD, of Philadelphia.

The symptoms of aneurism followed a blow upon

the chest. The patient died three days after the operation with symptoms of suffocation. No autopsy could be obtained.

Adjourned until Thursday.

THURSDAY.—THIRD DAY.

MORNING SESSION.

THE COMPARATIVE MERITS OF TRACHEOTOMY AND INTUBATION IN THE TREATMENT OF CROUP,²

by GEORGE W. GAY, M.D., Boston.

Dr. Gay reached the following conclusions:

- (1) Intubation may be tried in all cases of croup.
- (2) It is preferable in young children and in cases in which the tube must be left entirely to itself.
- (3) It may be resorted to for euthanasia, provided the operator is reasonably expert, and can do it without producing collapse.
- (4) Tracheotomy is called for in those cases in which intubation cannot be done, or in which it fails to give relief, or in which the laryngeal tube is repeatedly ejected or requires frequent removal for cleansing. It may also be required in those cases in which sufficient food cannot be given while the O'Dwyer tube is in position. It is also preferable in cases situated at a distance from a surgeon capable of introducing the laryngeal tube.
- (5) The tracheotomy instruments should always be at hand in intubation in case of emergency.

DISCUSSION.

DR. H. H. MUDD, St. Louis, said that intubation had been done as a precautionary measure in many cases in which tracheotomy would not have been thought of. Some of the good results of intubation are to be attributed to this fact. In most of his cases of intubation where the patient survived he had found it necessary to resort to tracheotomy. Patients have recovered after tracheotomy where intubation has proved unsuccessful.

PROF. THOMAS ANNANDALE called attention to the value of the introduction of a tube through the glottis in cases of operations about the throat where there was risk of suffocation or of hæmorrhage into the trachea.

DR. HUBER, of New York, had performed intubation in ninety-four cases, with recovery in thirty-seven. He does not operate early. He considers the internal use of bichloride of mercury as of equal importance as the intubation. There is occasionally an advantage in using a small tube with the expectation that it will be coughed out, and with it a portion of the membrane, and affording an opportunity for feeding while the tube is out.

DR. T. F. PREWITT, St. Louis, in one case of diphtheritic paralysis, had, in order to avoid passage of fluid into larynx, passed a catheter through the glottis and plugged the larynx with a sponge. This permitted the fluid to go into the œsophagus without risk of entering the trachea. After feeding, the sponge and tube were removed.

DR. D. W. CHEEVER, Boston, advocated the disuse of anæsthetics in cases of tracheotomy, provided proper assistants can be secured. The operation is not accompanied with much pain. By avoiding the anæsthetic many of the risks of the operation are avoided.

² This paper will appear in full in this Journal.

The next paper was entitled
PREGNANCY AND OPERATIVE SURGERY: THEIR MUTUAL RELATIONS,

by DR. L. McLANE TIFFANY, of Baltimore.

The following conclusions were presented: (1) Pregnancy is a physiological condition, and does not contraindicate a surgical operation. (2) During pregnancy temporary strain may be exerted upon some organ, for example, kidney, inducing impairment of function. (3) A surgical operation upon a pregnant woman is to be conducted so as to avoid inducing abortion, in itself a serious accident. (4) The main cause of abortion after operation is sepsis. (5) The probability of sepsis after operation is increased if the patient is suffering from disease, either temporary or chronic. (6) Abortion may result from operation—shock perhaps. (7) Haemorrhage does not seem to induce abortion. (8) Union of fracture may be retarded by pregnancy. (9) Recorded cases show that the unborn child receives no evil impression when the mother is subjected to operation. (10) When a surgical operation upon a pregnant woman is under consideration, the function of all the patient's organs must be carefully investigated and regulated. An operation then conducted antiseptically may be expected to result as though pregnancy were not present.

DISCUSSION.

DR. J. EWING MEARS, Philadelphia, thought that, while pregnancy was to be regarded as a physiological process in the native woman, it could not be considered in this light in the society woman. Another important point to be considered was whether the operation required was one of expediency or of necessity. In the latter case the surgeon must do his duty, let the result be what it may, but whether or not operations of expediency were to be performed on the pregnant was a question only to be decided by further experience.

DR. P. S. CONNER, Cincinnati, reported a case of subcutaneous operation for ankylosis of the knee in a woman who, it was subsequently learned, was six weeks pregnant. The operation was followed by severe septic infection, but this did not interfere with the normal course of the pregnancy.

DR. WILLIAM HUNT, of Philadelphia, raised the question whether or not, in the case of inevitable fatal injury of the pregnant woman, as from burns, it was justifiable to run the risk of sacrificing the mother a few days sooner, when by so doing the life of the child might be saved, or must we wait until the last breath has left the body before making the incision?

DR. R. B. BONTECOC, Troy, reported the case of a rupture of an umbilical hernia in a woman seven months pregnant. The intestines were out four hours. They were then cleansed and replaced. The woman recovered, and a healthy child was born one month later.

DR. J. McLANE TIFFANY, of Baltimore, thought that in the case suggested by Dr. Hunt, there could be no question as to the propriety of operation. By so doing one life may be saved.

NERVE STRETCHING,

by DR. N. P. DANDRIDGE, Cincinnati.

The following conclusions were presented: (1) That nerve stretching should be condemned in all forms of

central disease, such as tabes, myelitis, etc. (2) That it offers little prospect of relief in tetanus. (3) That it should be regarded as a reliable method in cases of persistent neuralgia and peripheral paralysis of sensation in the extremities. (4) That stretching the facial is indicated in tic-convulsiva. (5) That further trial is justified in reflex epilepsy. (6) That stretching the lingual should be tried in painful affections of the tongue. (7) That resection should always be preferred to stretching in the spinal accessory, and in the branches of the fifth nerve except the lingual.

Adjournment.

AFTERNOON SESSION.

The first paper was that of Dr. Willard.

NEPHRECTOMY;

(1) Gun-shot wound of the kidney; (2) tubercular disease of the kidney; by DR. FOREST WILLARD, M.D., of Philadelphia.

CASE 1. Male, mulatto, aged seventeen, was shot July 10, 1887, at such close range as to burn clothing and skin. He was able to walk one-fourth of a mile to the hospital, and the shock was but moderate. Symptoms of internal haemorrhage steadily increased, and when seen by Dr. Willard, four hours after the injury, the signs of collapse were evident. The ball entered just above the eleventh rib, three and one-half inches from the spinous process. There was no wound of exit. Almost pure blood was voided from the bladder, and continued to flow freely. The entire left side of the abdomen was dull on percussion, and there was every evidence that there had been an escape of intestinal contents, as well as urine and blood, into the peritoneal cavity.

Abdominal incision was, therefore, chosen as best suited to arrest hemorrhage, repair injured organs, and remove clots. The bladder was found full of blood, but uninjured; ureters the same. The huge haematocoele was found to be retro-peritoneal, filling all the tissues in the loin and downward into the pelvis. The left kidney was traversed by the ball from the centre of the rim to the infundibulum, and the renal artery and vein cut. Aseptic silk ligatures were applied and the organ removed. The ball had passed behind the peritoneum without injuring other organs, and could not be found. No blood or faeces were found in the peritoneal cavity. The site of the extirpation was thoroughly mopped with sublimate solution, 1:10,000, made with boiling distilled water, and the abdomen irrigated with hot distilled water. The utmost precautions were taken to prevent infection, and all the dressings were thoroughly antiseptic. The temperature, during the next four days, varied from 99.4° to 101.4°. About twenty ounces of slightly albuminous urine were secreted daily. The skin was kept active, and no signs of uraemia at any time made their appearance. The patient, however, died of loss of blood, shock, and exhaustion eighty-six hours after the injury. At the post-mortem no blood or pus was found in the peritoneal cavity, and the adhesions between the serous surfaces were very slight. There was no pus at the site of the nephrectomy, and the haematocoele was perfectly aseptic. The ball had grazed the eleventh rib, passed just below the pleura, without entering it, had perforated the diaphragm, left kidney, the renal artery and vein, and the sheath of the aorta just at the origin of the renal artery, being found lying directly upon the aorta. The right kidney was healthy.

In his remarks, Dr. Willard dwelt upon the advantages of abdominal incision, where the probabilities of other organs having been injured were so great, as hæmorrhage could be arrested, perforations repaired, and escaped fluid removed. Drainage through the loin or abdomen was not advisable, provided urine had not escaped into the peritoneal cavity before the operation. The hæmatocèle, if large and retro-peritoneal, could not be thoroughly removed, and should, therefore, be allowed to remain undisturbed. All fluids in the abdominal cavity should be removed.

The three primary nephrectomies for gunshot wounds thus far reported have all been done by Philadelphia surgeons. Keen (*Trans. Amer. Surg. Assoc.*, Vol. V. p. 193) removed the left kidney of a girl of eighteen, in whom the ball had perforated the stomach, liver, spleen, and kidney. This patient died on the fifteenth day. Price (*Trans. Penn. State Society*, 1888) removed the right kidney in a girl of fourteen, in whom the liver was also perforated. His patient recovered after multiple abscess of the liver. Dr. Willard's case died on the fourth day. In none of these cases was there anuria.

CASE II. Female, aged thirty-two, married eight years, but had never been pregnant. Tubercular history of ancestry was uncertain. Failing in health for ten months. Seven weeks ago, first noticed tumor in right side of abdomen. Has had increasing pain in this region. This is now very severe at times. Has emaciated rapidly, temperature varying from 99° in the morning to 101° in the evening. Diarrhoea quite constant. Passed large amounts of pus in the urine. Urine one-sixth albuminous, but contains no casts and no distinctive cell elements. Tumor rounded in form, occupies the space from the right renal region forward to linea semilunaris, and vertically from lower margin of liver to line of anterior superior spinous process. Indistinct dullness extending into pelvis. Resonance between liver and tumor. Tumor movable.

Diagnosis uncertain as to purulent kidney or sarcoma of kidney. The size of the tumor and its projection forward determined the selection of the abdominal median incision. The right side of abdomen was found filled with thick sac, giving rise to indistinct sense of fluctuation. From it extended downward two elongated masses, one evidently a pus-filled ureter, and the other a mass extending down from the external iliac vessels and passing under Poupart's ligament. Puncture evacuated only a few drachms of pus, and did not diminish its size. Tearing open the sac, the kidney was found riddled with multiple abscesses. The vessels and the ureter low down were tied with silk ligatures and the kidney removed. The abdominal cavity was irrigated with distilled water, drainage-tubes inserted behind the uterus and into the site of the nephrectomy, and the wound closed with one set of sutures. The woman was exceedingly low during the operation, but rallied so that the temperature rose to 99°, and she became perfectly conscious. Two hours after operation she suddenly sank and died.

Post-mortem showed that behind the suppurating kidney and in a separate sac, divided from it by a wall two lines in thickness, was another pus sac. This sac was three inches wide, and the pus had worked its way down the aorta, common iliac and iliac arteries to Poupart's ligament. If nephrectomy had been attempted, this sac might have been drained and the kidney never reached at all. No hæmorrhage

after operation. Death from shock. The other kidney was enlarged, but not diseased.

DISCUSSION.

DR. W. W. KEEN, Philadelphia, believed that blood exuded between the folds of the peritoneum was not a source of danger and that it might be left without interference. If we could make out that the kidney alone was injured the lumbar incision would be the proper one. Where there is a probability of injury of other structures the abdominal incision is the best.

DR. JAMES McCANN, Pittsburgh, reported a case of nephrectomy for multiple abscess in which the patient died suddenly six hours after operation.

DR. L. McLANE TIFFANY, of Baltimore, held that in simple gunshot wound of the kidney the proper plan was to drain the kidney through the lumbar region and not to perform nephrectomy.

DR. CHAS. T. PARKES, Chicago, reported a case of gunshot injury of the abdomen, in which in addition to a number of perforations in the bowel the ball entered the kidney. The intestinal wounds were closed. No operative procedure was performed on the kidney. The patient died from hæmorrhage from the kidney twenty-four hours later.

DR. KEEN thought that in the condition referred to by Dr. Tiffany, the proper plan was to drain, but where there is much injury of other parts, the patient will stand a better chance if the wounded kidney is removed.

DR. ROBERT F. WEIR, New York: If there is simply a gunshot wound of the kidney, the organ should be thoroughly exposed in order to ascertain the extent of the injury. Then thorough drainage should be employed, and to guard against hæmorrhage the wound should be tamponed with iodoform gauze.

DR. H. H. MUDD, St. Louis, reported a case of lacerated wound of the kidney in which drainage was adopted. Irregular fever and loss of strength supervened and fifty-one days after the injury the kidney was removed. The whole organ was in a state of parenchymatous nephritis.

DR. C. B. NANCREFE, Philadelphia, had in his paper last year recommended that in gunshot wounds of the abdomen involving the kidney, an attempt should be made to save the organ when that was possible. He had also suggested packing of the kidney to prevent hæmorrhage.

DR. R. N. ISHAM, of Chicago, considered hæmaturia a pathognomonic sign of injury of the kidneys. There are two forms of laceration of the kidney, those in which the capsule is involved in the injury and those in which it is not. In the first, operation will probably be required. In the second, no operative procedure may be required.

SHOCK.⁸

by DR. DAVID W. CHEEVER, Boston.

DISCUSSION.

DR. G. W. GAY, Boston, dwelt upon the importance of preserving animal heat. He is in the habit of using a small dose of morphia hypodermically ($\frac{1}{2}$ to $\frac{3}{4}$) before beginning a capital operation. If the operation is a severe one, the patient is not removed from his bed and is given only a few whiffs of ether to obtund the pain of the first incision.

⁸ This paper will be found in full on page 295.

DR. C. B. NAXCREDE, Philadelphia, was in the habit in cases where it was doubtful whether or not the patient had recovered sufficiently to bear an operation of employing the "ether test." If after the administration of the anæsthetic is commenced, the pulse and the general condition improves, the patient will stand the shock of the operation. If, however, the respirations increase in rapidity and the pulse becomes frequent and weak, the ether is removed. These patients never react. Shock is often kept up by a crushed limb. In these cases the condition often rapidly improves where the limb is removed. In order to favor the flow of blood to the head, and to overcome the consequence of its collection in the abdominal vessels he had employed elevation of the limb and the application of the Esmarch bandage.

DR. LANGE, of New York, thought that the influence of loss of blood in the production of shock, was underrated. He could not recall an instance of prolonged operation in which shock followed, provided extreme loss of blood was prevented. In operations where loss of blood is apprehended, he employs large rectal injections of hot water.

DR. B. A. WATSON, of Jersey City, referred to the experiments which he had made showing the influence of ether and of chloroform on temperature.

DR. DAVID PRINCE, of Jacksonville, recommended the use of small doses of morphia with tincture of digitalis hypodermically to guard against reflex action and against depression. He considered reflex action an important cause of shock. He also advised that the temperature of the part operated upon should be maintained.

The paper was also discussed by DRs. WEIR, BONTICOT, TIFFANY, WILLARD, and MOORE.

DR. B. A. WATSON, Jersey City, moved that a vote of thanks be extended DR. C. H. MASTIN, of Mobile, for his efforts in introducing and perfecting the plan of organization of the Congress of American Physicians and Surgeons. This motion seconded by DR. E. M. MOORE, of Rochester, and by DR. WM. H. PAN-COAST, of Philadelphia, was unanimously adopted.

After extending to the retiring officers a vote of thanks, the Association adjourned to meet in Washington, the second Tuesday of May, 1889.

Recent Literature.

Manual of Operative Surgery. By JOSEPH D. BRYANT, M.D., Professor of Anatomy and Clinical Surgery, Bellevue Medical College, etc. With 800 illustrations. New York: D. Appleton & Co. 1887.

In many respects this is an admirable book, for the author has shown a wise discrimination in excluding the special subjects of the eye and ear, and more elaborately considering the subjects that come to the general surgeon. The author presents his subject in a lucid style, all parts of the book being thoroughly up to date. It is less comprehensive than Stephen Smith's work on the same subject, yet it will rarely be turned to for information without satisfying the surgeon. It is thoroughly progressive, and yet, withal, very judicious. The book is replete with excellent anatomical cuts, which add greatly to the text. There are very few minor faults, and in all respects it may be fairly classed as one of the best text-books on the subject.

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THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

The Congress, according to all accounts, was a marked success. Its component societies were all well attended, and the general meetings of the evenings were full and enthusiastic. If it were possible to find any fault, it would be that too much work was attempted. The various societies vied with each other in the number of papers, and held two long sessions each day, so that when evening came many were already exhausted with the close attention paid to the proceedings of their own societies. One of the advantages to be gained from such an assemblage lies in the possibility of attending other societies than one's own. If fewer papers were read, and the meetings did not always coincide, the mutual advantages might be greater. To attend three long meetings on three successive days is exhausting.

MEDICAL NOTES.

— The yellow fever record in the south for the past week shows no amelioration. At Jacksonville the daily average of new cases has been about as it was last week, and the total up to the evening of September 23d was 1878 cases, with 212 deaths. McClenny and Gainesville report few or no new cases. The breaking out of the disease in Decatur, Ala., and Jackson, Miss., has caused a panic which has led to many unreasonable and absurd acts. Some 150 towns in the Mississippi valley, along the line of the Illinois Central Railroad, have established "shot-gun" quarantine against all points south. The embargo is so complete, it is said, as to shut out mail, medicines and physicians. Traffic on the railroad is, of course, practically suspended. The city of Chattanooga, for instance, has offered a reward of \$25 for the detention of any refugee from any infected district, with the effect of making every person in the city a detective, and has excluded all trains, traffic, or freight upon any of the railroads, county dirt roads, or any other modes of entrance into Hamilton County, Tennessee, except passengers and freight

from the Cincinnati Southern Railroad, and even the passengers and freight received by this road from south of the Kentucky State line share in the exclusion. Northern cities continue to subscribe liberally for the sufferers. Boston's contribution up to the present time being considerably over \$10,000.

— One of the meritorious forms of charity, which deserve to be encouraged, is the sending of sick children from their unhealthy city homes, that they may breathe the fresh air of the country for a few weeks. An innovation in this work has been introduced by the Germans, which is worthy of note. The Berlin society which interested itself in the good work, finding that the means at its disposal were not sufficient to send a large number of children a long way into the country, economized by erecting large tents near the city, in places where the two requisites of pure air and water can be found. In this way the cost of transportation was largely reduced, and consequently about five times as many children as formerly can be accommodated. — *Sanitary Inspector.*

— What an almost universal vaccination of a people can do in diminishing the small-pox death-rate is shown by recent statistics for the German Empire, in which the practice of vaccination and re-vaccination is compulsory. For the year 1886, the small-pox death-rate for the whole empire was only .03 to each 100,000 of the population. In the larger cities it ranged from .07 in Berlin, to 3.6 in Hamburg. Compared with the German cities, the rates in other European cities ranged from .06 in London to 4.9 in Liverpool; Paris, 9.0; Brussels, 11.4; St. Petersburg, 15.3; Moscow, 34.1; Vienna, 26.2; Venice, 51.6; Rome, 134.3; Genoa, 153.8; Budapest, 368.7; Marseilles, 545.3, to the 100,000. More than two-thirds of the deaths from small-pox in Germany were in cities like Hamburg, which have a large foreign shipping trade, and in those districts which lie immediately along the Russian and Austrian borders.

— The beneficial influence of the sea-side air for sick school children of the poorer classes was first appreciated in Italy, and the idea was there first put into practice by the establishment of hospices, or sea-side resorts, for this class of little ones. Since the establishment of the first in 1856, twenty of these stations have been built, thirteen on the Mediterranean and seven on the Adriatic coast. More than one hundred special committees send thousands of suffering children to the sea-side every year. According to the report of the general secretary of the Italian Public Health Society, 25,000 sick and scrofulous children have been received and treated at the Mediterranean stations. Of these, 25 per cent. were cured, and 62 per cent. improved. At the stations of the Adriatic the number of the little patients has been 20,000, with 27.5 per cent. of cures and 61.3 per cent. improvements. At the present time these sea-side stations for scrofulous children exist in almost all civilized countries. — *Sanitary Inspector*, from the *Zeitschrift für Schulgesundheitspflege*.

— In the *Bull. Gen. de Théor.* for August 30, 1888, a letter from a Dr. Fort, of Montevideo, furnishes an account (from the pen of an eye-witness) of the painless removal of a wen while the patient was in the hypnotic state. The wen was situated on the forehead, and an incision of five centimeters in length was necessary to extract it. All was done without the slightest sign of pain, and the patient assisted the operator by movements of the head, etc. Questioned afterward, the patient remembered nothing of what had gone on.

— *A Terrible Mistake.* "Man Peter," said a Scotch quack doctor to his apprentice, "ye maun aye be awfu' cautious in pharmacy. Even I ance made a terrible mistake." I was attending Mrs. Kittlebody, who was sair fashed wi' tickdolaroo, an' I was called upon by John M'Fikert, wha's croon was sae thin o' hair — as weel as sence — that he was ashamed o't, especially as he was coortin' a strappin' young widow that had a fine public hoose; an' I mixed up baith portions at the same time, an', losh sake, man, I happened tae gie them ilk idler's medicine. So pair John, rubbing Mrs. Kittlebody's preparation for her tickdolaroo on the tap o' his head, declares he's had a bee in his bonnet ever since; an' Mrs. Kittlebody, rubbin' her jaws wi' the ointment intended for John's bald pow, in less than a fortnicht had a pair o' whiskers the envy o' a' the young men o' the village. — *Chemist and Druggist.*

— According to observations made by Dr. Sweeting, Medical Superintendent of the Western District Hospital, London, the proportion of albuminuria in scarlet fever has been steadily increasing in that institution for the past four years, rising from 19.1% in 1884 to 34.9% in 1887. Inasmuch as the same test (picric acid) was employed, with the same frequency and by the same officer, under his personal supervision, the increase he is forced to think real, and not apparent. Specially made statistics showed him that the season had no influence, and special experiments that the ventilation was not to blame. Dr. Sweeting's explanation finds its basis in the overcrowding of the wards which has been necessary, and, amongst other confirmations of this, a strong support attaches to it from the fact that in the London Fever Hospital overcrowding has invariably been followed by an increase in the number of patients showing albuminuria.

— A reported claim for a special pension is that the applicant got cold in the drafts of 1864.

— In the *Practitioner* for August, 1888, Dr. Samuel West gives a fresh set of figures for the frequency of heart complications in rheumatism. The cases admitted to St. Bartholomew's Hospital during a period of six years furnishes the basis for these statistics. These were 1,137 in number, and the heart was affected in 70.86%. Only cases of "rheumatic fever" were selected, a disease which West believes distinct "from what is ordinarily called rheumatism," and the test was the persistence of a distinct murmur till the patient left the hospital. The pericardium was affected alone (?) in 6.48%, and with the endo-

cardium in 7.5%. Referring to the much lower percentages of other writers, especially German, West expresses his belief that many cases are included which do not come under the heading of rheumatic fever.

—Dr. T. E. Satterthwaite, a short time ago, showed the New York Post-Graduate Clinical Society a new stethoscope that he had used for some time with great satisfaction. The bell-shaped pectoral piece of hard rubber, and measuring about one and one-quarter inches in either dimension, is divided into two chambers, of which the inner one only communicates with the ears through the two regular tubes. In the outer chamber, however, the air is exhausted by a rubber bulb connected with the chamber by a tube, and in this way the walls of both chambers adhere tightly to the chest. Naturally, sound from without is effectually shut off at that point, and as the instrument is said to be very easy to manage, and especially useful when the patient is in bed, it may be found an improvement on the old. The stethoscope is made by P. W. Soule, a dentist of Woonson (Monson?), Mass.

—The Lee pure food bill, ordered, as we learn from the *American Analyst* of August 1st, to be reported by the House Committee on Agriculture, provides that "any person, persons or corporations causing to be made, manufactured, sold or offered for sale, or transported from one State into another, or into any territory or reservation of the United States, or into the District of Columbia, or exporting from the United States, or any transportation company transporting from one State into another, or from or into the United States any adulterated or misbranded articles of food, liquor or drugs, shall be deemed guilty of a misdemeanor, and upon conviction shall pay a fine of not less than \$100 nor more than \$1,000 for each offence, and upon conviction a second time may be imprisoned at the discretion of the court." The bill also provides for the creation in the department of agriculture of a division to be known as the food division, equipped with a chief and corps of assistants. In addition, a chemist shall be appointed by the President with assistant chemists in New York, Boston, Philadelphia, Charleston, Savannah, Mobile, New Orleans, Galveston, St. Louis, Chicago, Cincinnati and San Francisco. The President shall also appoint one food inspector for each State and territory and the District of Columbia, and two assistants may be appointed by the inspector when necessary, whose duties shall be to sample any article of food, drink or drug, and have the same properly verified and analyzed by the food chemists. They shall inspect slaughter houses, and have microscopic and analytical tests made of slaughtered animals, and when they find adulterated articles of food, drink or drugs, or tainted or diseased meat sold or offered for sale in violation of this act, they shall present the facts, properly verified under oath, to the district attorney, who shall immediately proceed to prosecute all violators of this act in the courts of the United States.

—The final results of operations are not always known to surgeons, and great care is often necessary to find out the later history of the subjects of serious operations. As a contribution to our knowledge of the post-operative life of a serious case, the following from the *Chicago News*, July 23d, is given for what it may be worth:

A nice-looking, well-dressed young man walked into a Washington Street barroom about ten o'clock last night, and, proffering the requisite nickel, ordered a glass of beer. The beverage was placed on the bar, and then the young man calmly proceeded to paralyze the barkeeper and a crowd of thirsty theatre-goers who had dropped in between acts. He first took from a clasp on his vest one end of a slender rubber hose, the other end of which was hidden by his clothing. He removed a plug or cap from the end of the hose, and inserted in it a small silver funnel which he took from his side pocket. He then proceeded to pour the contents of the schooner into the funnel, accompanying the performance with a series of long-drawn breaths. When asked for an explanation, he coolly said he had poured the beer into his stomach. Everybody was amazed, and hinted at trickery, but the stranger quietly bared his body and displayed the spot where the hose was inserted into his stomach.

The only explanation he gave for the strange appliance was that a year ago he was taken with a cold, which so affected his throat and stomach that he could no longer take food in the regular way. Surgeons could not relieve him, but they rigged up the funnel and hose, made an incision in his bread-basket, and ever since he has lived on milk, beef-tea, and such other liquids as his fancy dictates. He enjoys good health, and expects to live indefinitely. He said that while, of course, he could not distinguish one kind of nourishment from another by means of taste, he could feel the effects of liquor the same as other people. In fact, he claimed the ability to get as drunk as any lord, if he felt inclined.

"Why don't you go into a dime museum?" was asked. "Because I've got a better scheme right here," was his answer, and he drew from his pocket a bundle of his photographs illustrating his novel mode of taking food. He had no difficulty in disposing of his stock on the spot, and after the crowd had treated the funnel to several more glasses of beer, he hurried away.

NEW YORK.

—A conference, at which the Rev. Dr. Wm. R. Huntington, rector of Grace Church, presided, was held at Grace Chapel, September 11th, in the interest of the Church of England Burial, Funeral and Mourning Reform Association, of which a local branch has been established in New York. The principal address was made by the Rev. Frederick Lawrence, secretary of the parent Society, who came to this country to promote the objects of the Association here, and one of the points upon which most stress was laid was that the coffin should be made of some perishable material.

During the course of his remarks he exhibited a miniature casket of pulp as a specimen of what is now being used to a considerable extent in England. The coffin, he said, was the immediate proximate cause of all the evils which it was the object of the Association to remove, and early interment would have a sanitary as well as an economical effect.

—Dr. Cyrus Edson, Chief Inspector of the Division of Contagious Diseases in the Health Department, has recently caused the arrest of an undertaker for exposing persons in a tenement-house to a contagious disease by his neglect to comply with the requirements of the sanitary code regarding such affections. On the evening of September 4th two young children died in the tenement-house referred to, of scarlet fever, and the next morning an inspector of the Board of Health found the bodies exposed on a table in the apartment in which they died, instead of in sealed caskets, as prescribed by law. The inspector, Dr. Dillingham, then went to the undertaker who was in charge of the funeral and warned him that he was disobeying the sanitary code, when the latter expressed contempt for the law. He was accordingly arrested and held for trial, and it is to be hoped that he will be duly punished, so that his case may serve as a much-needed warning to others.

—The twenty-fourth annual meeting of the United States Veterinary Medical Association was held at the Rossmore Hotel, September 18th, when the following officers were elected for the ensuing year: President, Dr. Rush Shippen Huidekoper, of Philadelphia; Vice-President, Dr. W. B. E. Miller, of Camden, N. J.; Secretary, W. B. Haskins, of Philadelphia; Treasurer, James F. Robertson, of New York. Among the subjects discussed was tuberculosis, and a resolution, offered by Dr. L. McLean, of the New York College of Veterinary Surgery, was adopted, to the effect that, as there was reason to believe that bovine tuberculosis may be transmitted to man by the ingestion of the meat and milk of animals affected with this disease, the attention of the National Government should be directed to the prevalence of the disease, particularly among milch-cows in the Eastern States, and the danger likely to result therefrom. A Committee was then appointed to proceed to Washington and lay the matter before the National Congress of Physicians and Surgeons.

—As there seemed to be little question of the correctness of the diagnosis in the case of the late Professor Proctor, no autopsy was made at the time of his death. On the 16th, however, at the request of Mrs. Proctor, made at the suggestion of a friend who accompanied her from the South, and who expressed the opinion that her husband had died of malarial, and not yellow fever, a post-mortem examination was made at the hospital on North Brother Island by Drs. T. Mitchell Prudden and H. M. Biggs, pathologists to the Board of Health, in the presence of Dr. Cyrus Edson, Chief Inspector of Contagious Diseases, Health Commissioner Joseph D. Bryant, and others. The

preliminary report of the examination, presented to the President of the Board of Health, is as follows:

“Decomposition was so far advanced that it was impossible to arrive at a definite conclusion as to the cause of death. The organs presented no evidence whatever of pernicious remittent fever or other form of malarial disease, such as, even in the condition of decomposition presented by the body, would ordinarily be apparent. The only positive change due to disease which could be made out was in the kidneys, which showed the appearances of old, though not advanced, disease. The alterations produced in the body by yellow fever are usually of such a character as to be nearly or completely obliterated by advanced decomposition. We are, therefore, only able to say in this connection that there was no other evident cause of death, and nothing which could be incompatible with that disease. The final conclusion as to the cause of death must, therefore, in our opinion, be largely based upon the clinical history.”

—The corner-stone of the new St. Joseph's Hospital at Yonkers was laid by Archbishop Corrigan on Sunday, September 23d. The site of the Hospital is on a high cliff overlooking the Hudson, and the buildings will be substantial and thoroughly equipped. The estimated cost is \$140,000.

—Mrs. Rachael Stillwagon, of Flushing, Long Island, celebrated her 103d birthday on September 17th. She was born at Tarrytown, on the Hudson, in 1785, was married in 1811, and has been a widow since 1825. Of seven children born to her, three are still living, all of them being over 70 years of age. She comes of Dutch ancestry, and her grandmother is said to have lived to be 106 years old.

Miscellaneous.

THE ARREST OF HÆMORRHAGE FROM WOUNDS OF THE PALM OF THE HAND.

Dr. R. J. LEVINS, writes as follows in the *Medical and Surgical Reporter*:—

“My experience with hæmorrhage from wounds of the palmar arches is that it is usually controllable by maintaining extreme elevation of the hand. This is most thoroughly effected, and with the least discomfort to the patient, by vertical suspension of the limb, the attachment being made along the palmar and dorsal surfaces of the forearm by adhesive strips, after the ordinary manner of making extension in the treatment of fractures. A cord from the adhesive strips may be fastened to the top of a bed-post or other convenient elevated point.

“If posture alone should not arrest the hæmorrhage, the most effective compression can be made by placing in the palm of the hand an India-rubber ball or a ball solidly made of cotton wadding, and on this the fingers and thumb should be closed and bound tightly with a roller bandage.

“Using these expedients I have never been obliged to ligate arterial trunks for the arrest of hæmorrhage from the palm of the hand.”

CHINESE "NERVELESSNESS."

THAT China is at least in some respects the moral antipodes of America as well as its geographical one, is shown by a writer in the *North China Herald* of Shanghai, who has lately been devoting a series of articles to the discussion of Chinese characteristics, referring to what he calls the "nervelessness" of the Chinaman, this author observes that, although the nerves of the Chinaman as compared with those of a European, may be what geometricians call "similar and similarly situated," nothing is plainer than that the two sets of nerves are wholly different. It seems to make no particular difference to a Chinaman how long he remains in one position. He will write all day, like an automaton; he will stand all day in one place from dewy morn till dusky eve working away at his weaving, gold-beating, or whatever it may be, and do it every day without any variation of the monotony and apparently without any consciousness of the monotony. Chinese school-children will undergo an amount of confinement, unrelieved by recesses or changes of work, which would drive Western pupils to the verge of insanity; even Chinese infants remain as impassive as "mud gods." It appears a physiological fact that to the Chinese exercise is superfluous; they cannot understand why people should go through athletic performances when they might hire coolies for the purpose. In the matter of sleep there is the same difference. The Chinaman, generally speaking, is able to sleep anywhere. No trifling disturbances annoy him. With a brick for a pillow he can lie down on his bed of stalks, or mud bricks, or rattan, and sleep the sleep of the just, with no reference to the rest of creation. He does not want a darkened room nor does he require others to be still. The "infant crying in the night" may continue to cry, for all he cares; it does not disturb him. In some places the entire population seem to fall asleep as by a common instinct during the first two hours of summer afternoons, no matter where they may be. In the case of most working people at least, and also in that of many others, position in sleep is of no sort of consequence.

REED & CARNRICK'S SOLUBLE FOOD.

In the JOURNAL of August 2, 1888, was published an analysis of Carnrick's Soluble Food, copied from, and credited to, the Report of the New Jersey Dairy Commissioner.

Dr. Newton, the Commissioner, has forwarded to us a circular, recently issued, bearing upon the same subject, to which it is necessary we should, in common honesty, give equal publicity to that given the first quotation. The circular is as follows:

STATE OF NEW JERSEY.
OFFICE OF THE DAIRY COMMISSIONER.
PATERSON, N. J., Sept. 19, 1888.

IN the report of this department to the legislature for the year 1887, an article by Prof. A. R. Leeds, entitled "Foods for Infants and Invalids," was published.

Messrs. Reed & Carnrick have, in a communication to this office, taken exception to some of the statements therein made, claiming that the amount and character of the ingredients of their food preparations

were misrepresented. In order that these gentlemen might receive full justice, I offered to have the analytical work revised by a chemist of reputation, who had never had any business or professional relations with either the State or Reed & Carnrick; and it was also stated that the results of this series of analyses would be published by this office.

Accordingly, Prof. Elwyn Waller, Professor of Analytical Chemistry at the School of Mines, Columbia College, New York, was requested to purchase a package of "Carnrick's Soluble Food" in the open market, analyze the contents thereof, and report the results to me. Below is a copy of his report.

"I examined a sample of 'Carnrick's Soluble Food,' (purchased by myself from Eimer & Amend). I find that 38.26 per cent. of the albuminoids which it contains are in the soluble form.

"The sample also gave readily, the biuret reaction for peptones. I failed to detect in the food, when moistened, any of the 'hard, unchanged particles of casein' which it has been asserted that it contains.

"My results lead to the conclusion that the casein in the preparation has been partially rendered soluble by the action of the digestive ferment as claimed by the manufacturers."

(Signed) ELWYN WALLER, Ph.D.

I append herewith a letter on this subject that I have received from Prof. A. A. Breneman, S.B., formerly Professor of Chemistry at Cornell University, now analytical chemist at 97 Water Street, New York.

WM. K. NEWTON, Commissioner.

NEW YORK, September 18, 1888.

DR. W. K. NEWTON, State Dairy Commissioner of New Jersey.

Dear Sir,—The report of your department for the year 1887, refers to certain preparations made by Reed & Carnrick, of New York, in a way which, from my knowledge of their work, seems to do them injustice.

The statements to which I especially refer are:

(1) That the milk solids in the preparation known as Carnrick's Soluble Food contains merely the dried casein of the original milk, neither changed nor modified by any process of digestion.

(2) That the analysis of this food given in the Report of the State Board of Health of New Jersey for the year 1885 correctly represents it, giving as it does only 10.25 per cent. of total albuminoids.

(3) In the analysis of the preparation known as Liquid Peptonoids (New Jersey State Dairy Report, 1887) the proportions of alcohol and albuminoids there given are made the basis of comments which are extravagant in language, and unnecessarily severe.

On February 20, 1888, I made, at the request of Reed & Carnrick, a test of the peptonized milk received in good condition from their factory. Of the albuminoids of the original milk 46.6 per cent. were found to be rendered soluble (that is, no longer precipitable by boiling or by acids). Through the process of digestion such soluble nitrogenous matters must, under the circumstances, consist of peptones, albumoses and caseoses, products of the modification of the original albuminoids of the milk by digestion.

Having made many analyses of this food during the past three years, I have never found the proportion of albuminoids to run below 16.5 per cent. as determined by combustion with soda-lime. The average of fifteen analyses, made since January 1, 1887, shows 18.96 per cent. of albuminoids. These results also agree well with the analyses of the same food made by Stutzer and other well-known chemists.

As to the liquid peptonoids, the proportion of albumi-

noids is limited only by the quantity which can be kept unchanged in solution. 16 per cent. of alcohol is necessary to prevent decomposition of the albuminoids and no quantity greater than three per cent. of these can be held in solution in this liquid. Many attempts have been made to accomplish a better result, but in all cases the excess of albuminoids was deposited after a time, or (with reduced proportion of alcohol) decomposition of the albuminoids occurred.

Very respectfully,

A. A. BRENNEMAN,
Analytical and Consulting Chemist.

Correspondence.

THE RECENT MEDICAL CONGRESS.

WASHINGTON, September 21, 1888.

MR. EDITOR, — You were good enough to ask me for my observations on the Congress; and I have written you this short account of the affair, telling you what I saw, and what I thought about various questions. I have written in the first person, for I propose to tell you what I saw without being so egotistic as to say that things looked to everybody as they did to me.

The dinner that preceded the Congress does not seem to have differed very much from similar dinners on previous occasions. The night was too hot for the highest degree of comfort. If any one failed to find pleasure in it, it was not the fault of the Washington officials, who certainly did all that could be done to make everything connected with the Congress the success it certainly has been.

The various societies worked hard, and a good audience was nearly always present at every paper. Special interest was felt in the general meetings, and the audience in the Grand Army hall on both evenings was very large, and must have embraced, not only nearly every doctor in the Congress, but many outsiders also.

There was a very considerable curiosity to see and hear Dr. Senn. He has been an original and untiring worker, and has contributed not a little to our knowledge of what may be done with the intestines of animals as a preliminary study to what may be done with human intestines. There were obscure rumors of distinguished and extraordinary professorships within his grasp. He was billed, not only for this meeting, but for a paper on Bacteriology in the Surgical Association, the title of which paper filled over a page in the programme. He was the author of a series of letters which were published in the *Journal of the American Medical Association* not long ago. These letters dealt very frankly, even bluntly, with men who showed him politeness in Europe. His own criticisms were so frank that over-delicacy in describing the man himself seems out of place; and, moreover, he has done such good work that he can afford to have disagreeable things said of him.

He mounted the platform with a thick pile of manuscript, and preceded by various anatomical preparations in the hands of others. Laying down the manuscript on the table, he found little further use for it. He began his talk with an attack upon the paper which had preceded, which was hardly called for. His talk was exceedingly diffuse, his manner theatrical; and when it was already half-past nine, and our chairs had grown hard beneath us, Dr. Billings passed him a paper, which he read with some surprise, evidently. He then said, "The chairman tells me I can have but ten minutes more. Why, gentlemen, I have hardly begun!" which, without doubt, was true; for he had really made no advance toward telling his audience what he really had to tell, and what we were anxious to hear. That he should be surprised and disappointed was not strange; but that he should go on to say "I shall not stop until I have shown what I came here to show," showed him to be too straightforward and honest to conceal a rebellious heart beneath a polite acquiescence. He then went on to tell something about his bone tubes, his anastomoses

of the intestines, and his injections of hydrogen gas, but it was hard work to condense all into so short a time, and he overran the ten minutes. His audience was good-natured, but tired; and they applauded the speaker liberally, but in a way to assist him to a conclusion.

It was not easy to explain exactly why Dr. Senn failed to present his experiments and his conclusions more acceptably. One explanation was that his results had cost him months of work, and he did not mean his hearers should be spared an equal amount of labor. Another was that he was suffering the effects of previous adulation.

Other gentlemen were on the programme to discuss these two papers, but they voluntarily requested that their time should be given to some of the foreigners present. The chairman called upon Mr. Arthur Durham, of Guy's Hospital, London, who rushed upon the platform, and addressed his audience in a very spirited manner. With an excited manner and exuberant gestures, he said he must express his pleasure at the handsome manner in which he had been entertained. He then went on to say what he had to say on the subject of intestinal occlusions; and notwithstanding a manner which was not impressive, his little speech seemed to me one of the most successful I ever listened to.

He was followed by Mr. Ord, in a quiet statement of his own opinion, in simple, polished language.

Dr. Billings then called upon Mr. Annandale, of Edinburgh, who ran up the steps as though it was the great pleasure of his life to address us, though he told us he had not been half an hour in the city, and was but just off the steamer. He had not heard what had gone before, and gave us simply a brief statement of his own views.

The Englishmen who were present at these meetings gave me personally great pleasure. They were everywhere, always interested, always ready to say they were interested, and always ready to add their own opinions and experience to any discussion when called upon to do so. They were noble specimens of our race and our profession, — picked specimens I ought to say.

Washington has great advantages as a meeting place. It is distinctly a medical centre, but its ways and its hotel ways in summer are not particularly agreeable to the Northerner, — I mean to myself. Something did not agree with our digestive tracts, and many had fearful tales to tell of sleepless nights and still more anxious days. The trouble was not distinctly ascribed to the drinking-water, but the water was very distinctly shunned after the first day. Some of the men were actually sick in bed, and started early for home.

Doctors are not a very enthusiastic class of men; yet nobody who went out to Arlington Heights and gazed on those 10,000 nameless graves escaped a new emotion.

The reception tendered the Congress by President and Mrs. Cleveland was a graceful attention on their part, which was duly appreciated. It was the only break in the close attention to business that the hard-working doctors indulged in. The reception on the evening of Tuesday was an exceedingly pleasant meeting.

Boston seems to have received a full recognition this year in the societies. Three have chosen Boston men for presiding officers for the ensuing year; while two others have chosen Boston men for Secretaries, and three societies have chosen Boston as their place of meeting next year.

— *A Terrible Diagnosis.* A certain fashionable Indianapolis lady visited an old friend, a Cincinnati doctor, accompanied by her daughter. "There is something the matter with Jenny's voice," remarked the anxious mother. After a careful examination the doctor solemnly said, "Madam, your daughter has a mezzosoprano." "What!" exclaimed the mother bursting into tears. "Then she is incurable; that's what carried the Emperor William off, according to MacKenzie." Fee paid, and doctor smiled.

REPORTED MORTALITY FOR THE WEEK ENDING SEPTEMBER 15, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consump- tion.	Diarrhoeal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	736	354	28.70	13.16	16.94	2.60	2.80
Philadelphia	1,016,758	358	147	19.04	14.56	5.88	8.12	2.52
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	700,000	—	—	—	—	—	—	—
St. Louis	449,160	205	95	21.60	4.95	8.10	2.25	6.30
Baltimore	437,155	—	—	—	—	—	—	—
Boston	407,024	212	95	22.56	14.57	15.98	1.41	3.29
Cincinnati	325,000	90	—	15.54	6.66	8.88	—	4.44
New Orleans	248,000	—	—	—	—	—	—	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	108	46	34.96	12.88	15.64	10.12	4.60
Pittsburgh	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	17	5	5.88	17.64	—	5.88	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	27	10	18.50	7.40	14.80	—	—
Charleston	60,145	—	—	—	—	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	76,328	37	21	32.40	10.80	27.02	5.40	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	—	—	—	—	—	—	—
Fall River	61,203	43	28	30.29	20.97	20.97	—	2.33
Lynn	51,467	17	—	29.40	23.52	23.52	—	5.88
Lawrence	40,175	13	6	—	15.38	—	—	—
Springfield	39,982	14	3	28.56	14.28	14.28	—	14.28
New Bedford	36,298	7	7	50.00	—	35.71	14.28	—
Somerville	33,307	12	7	50.00	8.33	25.00	8.33	8.33
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	10	5	20.00	—	—	10.00	10.00
Chelsea	27,552	11	4	9.09	27.27	—	—	—
Haverhill	24,979	10	3	10.00	—	10.00	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brocton	24,784	5	5	40.00	—	40.00	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	5	2	40.00	20.00	20.00	—	—
Malden	18,932	6	2	16.66	—	16.66	—	—
Fitchburg	17,534	6	3	50.00	—	16.66	—	—
Waltham	16,651	2	0	—	—	—	—	—
Newburyport	13,839	3	2	33.33	33.33	33.33	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 1,954; under five years of age 850; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 485, consumption 238, acute lung diseases 127, diarrhoeal diseases 202, typhoid fever 75, diphtheria and croup 64, whooping-cough 28, scarlet fever 24, malarial fever 16, measles 10, small-pox one, yellow fever one. From whooping-cough, New York 13, Boston and Washington four each, Philadelphia three, Cincinnati two, Chelsea and Fitchburg one each. From scarlet fever, New York 17, Philadelphia three, Fall River two, Washington and Nashville one each. From malarial fevers, St. Louis nine, New York six, Philadelphia one. From measles, New York eight, Philadelphia and Fall River one each. From small-pox, Philadelphia one. From yellow fever, New York one.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273 for the week ending September 8th, the death-rate was 17.8. Deaths reported 3,205: infants under one year 1,984; acute diseases of the respiratory organs (London) 148, diarrhoea 141, whooping-cough 66, scarlet fever 53, measles 41, fever 34, diphtheria 28.

The death-rates ranged from 12.7 in Bristol to 25.1 in Norwich: Birmingham 17.8; Bradford 16.1; Hull 15.5; Leeds 24.4; Leicester 22.8; Liverpool 22.4; London 16.0; Manchester 22.6; Nottingham 15.1; Sheffield 20.6; Sunderland 15.4. In Edinburgh 16.9; Glasgow 18.5; Dublin 21.7.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING SEPTEMBER 22, 1888.

CAEELL, A. G., passed assistant surgeon. Ordered to the Naval Hospital, Chelsea, Mass.

BAKER, J. W., passed assistant surgeon. Detached from the Naval Hospital, Chelsea, Mass., and to the "Palos."

LEACH, PHILIP, passed assistant surgeon. Detached from "Palos" and granted six months' leave abroad.

SIMONS, M. H., surgeon. Detached from Naval Academy and wait orders.

HARMON, G. E. H., surgeon. Ordered in charge Naval Academy.

PICKRELL, GEO. M. C., assistant surgeon. Detached from the "New Hampshire" and to the "Ossipee."

ARNOLD, W. F., assistant surgeon. Ordered to the "New Hampshire."

HENRY, C. P., assistant surgeon. Detached from the "Ossipee" and granted sick leave.

CORDEIRO, F. J. B., assistant surgeon. Promoted to passed assistant surgeon.

SPEAR, J. C., and RHOADES, A. C., medical inspectors. Placed on the retired list September 14th.

SOCIETY NOTICE.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.—At the meeting of the Society on October 3d, at 12 M., in the hall of the Boston Medical Library Association, a series of papers on Poisoning by Arsenic will be read by Dr. S. W. Abbott, Prof. W. E. Hills, Prof. F. W. Draper, Drs. A. F. Holt, F. A. Harris, T. M. Durell and others. Discussions will be held by Prof. E. S. Wood, Prof. R. H. Fitz and others. As it will be impossible to complete the subject in one meeting, the papers will be presented until all are read, and the stated meetings of the Society, which occur at the same place and day as the Councilor's meetings of the Massachusetts Medical Society. The profession are cordially invited to attend.

W. H. TAYLOR, Recording Secretary.

DEATH.

Died in Ipswich, Mass., September 24, 1888, Verick Gordon Hurd, M.D., M.M.S.S., aged sixty years.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the State Medical Society of Arkansas. Fort Smith, 1888.

Cellular Digestion; Its Utility in Pathological Processes. By N. S. Davis, Jr., A.M., M.D., of Chicago, Ill. Reprint.

Original Articles.

NEW FORM OF POSTERIOR COLPORRHAPHY.

BY J. H. KE LOGG, M.D., OF BATTLE CREEK, MICH.

THE necessity for some relief from the distressing inconveniences attending complete procidentia and extreme cases of prolapse of the vaginal walls, has led to the origination of a great variety of operations for the purpose of diminishing the size of the vagina, a procedure commonly known as colporrhaphy. As each new method has been brought forward by its originator, it has been advocated as obviating the defects of methods previously employed. But, one by one, the various methods thus far introduced have proved wanting. The difficulty experienced with all methods alike has been that however much the vaginal canal might be narrowed by the operation, the wedge-shaped uterus, steadily acting in a downward direction, has in time succeeded in reproducing the original condition. The one exception to this history of failure has been the median colporrhaphy of Lefort. But this procedure admirable as it is in the cases to which it is adapted, is evidently justifiable only in the cases of women who have passed the menopause, since the strong median raphe produced by the operation necessarily presents an insurmountable barrier to parturition. There are also cases in which this operation might be considered objectionable upon other grounds. After making thorough trial of the various approved forms of colporrhaphy for the relief of subinvolution, cystocele and procidentia, I some five or six years ago adopted a method of operation which, so far as I know, is novel, and which it is the purpose of this paper to describe.

This operation is especially adapted to the posterior wall of the vagina. The operation consists in the removal of a longitudinal strip of mucous membrane from the posterior vaginal wall, the form of which is indicated in the accompanying cuts. The peculiarity of this part of the operation consists in the bifurcation of the denuded surface at its inner extremity, the cornua being made to converge and extend upward on either side of the cervix so as to include about two-thirds of the circumference of the vaginal canal. The purpose of this form of denudation is to create, by uniting the edges of the wound, a pouch to receive the cervix uteri, the advantages of which will be presently explained. The surfaces of the wound are united in such a manner as to produce not simply a superficial line of union, but, in addition to this, an artificial thickening of the posterior vaginal wall subjacent to the superficial line of union, for the purpose of strengthening the relaxed and weakened structures. The following is a brief description of the operation:

The operation consists of four steps—

(1) *Mapping out the area to be denuded.*—The patient being placed upon her back in the lithotomy position, the vaginal orifice is enlarged by means of retractors so as to bring the cervix uteri into view and enable the operator to determine the amount of narrowing required. I mark out the area to be denuded by means of traction sutures ten or twelve inches in length, which are introduced thus: Seizing the mucous membrane in the median line about one inch in front of the cervix A (this suture is not shown in the cut) a needle armed with a piece of suture silk about two feet in length is passed through the fold of membrane

held by the forceps, and the two ends tied. The hold of the seizing forceps being now released, the mucous membrane is seized

at another point to the right or left, one-third of the circumference of the vagina. A traction suture is introduced as before, and another upon the opposite side in like manner, B and C, Fig. 1. Other traction sutures are introduced at points marked D, E, F, G, H and I. Finally, the external points J and K are fixed, and indicated by a slight incision, or a snip with the point of the scissors.

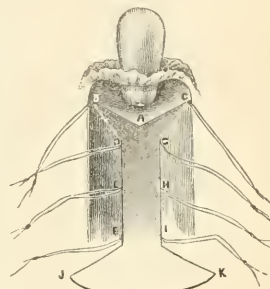


FIG. 1.

(2) *Denudation.*—Starting at K, remove a strip of mucous membrane along line of union between the skin and the mucous membrane reaching to J. A similar strip is removed along the line K I, and another on the line J F. The space included between the points K I and J F may now be rapidly denuded by dissecting off narrow strips from right to left. Now drawing down the traction sutures attached to the points I and H, a fold of membrane is raised up, along the crest of which a strip of membrane may be dissected up, reaching from I to H. In a similar manner dissect up a strip on the opposite side. Now denude the surface up to the points E H in the same manner as before. Then make taut



FIG. 2.

the traction sutures H and G so as to raise a fold, and proceed as before. In like manner the sutures G C, D B, A C and A B, are successively drawn down, and the spaces enclosed between the points G C A and D B A are denuded. Hemorrhage during the process of denudation is usually controlled by a stream of hot water sterilized by corrosive sublimate in proportion of one to four thousand, which is kept constantly flowing. Any troublesome bleeding points are secured by means of small snap forceps, which are allowed to remain in position until the edges are brought to gether in closing the wound. Ligatures are seldom required.

(3) *Introducing the sutures.*—We are now ready for the introduction of the sutures, Fig. 2, one of the most important parts of the operation. Two lines of sutures are introduced in the vaginal portion of the wound; (a) continuous deep suture; (b) a continuous superficial suture. Beginning at the apex of one of the cornua, a medium-sized catgut suture about fifteen inches in length is secured and the sides of the denuded surface carefully brought together by a buried suture from B to A. The needle should be slightly curved, being made to dip as deeply as possible without involving danger of wounding important structures. By this means the line B D is made to approximate closely to the line B A. By means of another suture,

which should be about eighteen inches in length, the edges of the mucous membrane defined by the lines B D and B A are now united by superficial sutures. When the closure of the edges of the triangle is complete, the suture should not be cut off, but should be saved to complete the closure of the superficial portion of the remainder of the vaginal wound. The cornua A G C is now treated in like manner, only that the deep suture is left long to serve as a deep suture for uniting the sides of the vaginal wound. The cornua being closed, the portion of the wound having parallel sides is next closed in like manner. I find it advantageous to carry the two lines of sutures down together, making the deep suture superficial at intervals of an inch, so as to closely unite the mucous membrane with the underlying tissues. The perineal portion of the wound is closed in the usual manner, only I do not use silver wire. If the sphincter has been torn, I employ a form of suture pin having an eye near the point, which I described in a paper published in the proceedings of the American Medical Association for 1887. I have continued the use of these pins, and consider them a great advantage over wire or any other for of suture for perineal operations, at least in most cases.

(4) *The dressing.* This is the final step in the operation, which I endeavor to make as antiseptic as possible. The vagina should be thoroughly cleansed from any remnants of clots. Pure iodoform is applied with a powder-blower, afterwards a quantity of antiseptic powder, consisting of equal parts of subnitrate of bismuth, iodoform, and tannin, is thrown in. A quantity of iodoform wool or charpie is placed against the perineum. Pads of sublimate cheese-cloth are applied and secured by proper bandage, and the patient is put to bed. The urine must be passed through a catheter.

I have performed this operation, or some modification of it, twelve times in all, and have always secured immediate union, and, with only two exceptions, without rise of temperature of more than one degree. In each of these cases the temperature reached 101° the second day after the operation, but came down to normal the next day, and remained thus.

What I suppose to be the novel and original features of this operation are: (1) the bifurcated form of the denuded surface at its inner end; and (2) the use of the buried suture for approximating the deep surfaces of the wound. The buried suture I have employed only during the last year, but the bifurcate form of denudation I adopted several years ago.

As to the results of this operation, I find that it accomplishes what it is designed to do. The cervix, being caught in the pouch formed between the cornua, is held high up, so that the fundus is tilted forward. By this means the two chief causes to which failure in other forms of colporrhaphy is due are eliminated; namely, the wedge action of the uterus in dilating the vaginal canal, and the forcing outward of the vaginal wall from the weight of the pelvic organs, the last-named difficulty being obviated by the forward position of the uterus. I find, also, that the disposition to prolapse of the vaginal walls is greatly lessened by the peculiar result obtained through the use of the buried suture. As will be readily seen, the approximation of the sides of the wound by the buried suture has the effect to produce a thick fold of tissue in the recto-vaginal septum. This fold projects into the rectal space and forms a thick and strong pillar of tissue,

forked at its upper extremity. In this fork the cervix uteri rests, and is held backward, thus tilting the fundus forward. I can hardly see what more could be desired in an operation of this sort.

The value of this operation in cases requiring it can hardly be over-estimated. In the cases in which it is the most essential the condition of the vagina is usually such that pessaries, with the exception of those having an external support, are of no avail, unless, indeed, we except the inflated ball-pessary, which only gives temporary relief at the expense of ultimately creating a condition still more deplorable. Indeed, the patients upon whom I have performed this operation have, almost without exception, been those who had abandoned pessaries of every description, after having tried everything in this line their medical advisers could suggest, and their uniform testimony has been that their condition had been in the end aggravated by pessaries, instead of being helped.

I do not wish to be understood as claiming that every case of procidentia, rectocele, or subinvolution of the vagina can be radically and permanently cured by this operation alone, but I consider this operation as a fundamental procedure for the proper treatment of these cases. Cases of retroversion and procidentia require Alexander's operation. Cases of extreme anteversion connected with protrusion of the vaginal walls may be relieved by the same means. In sixty cases of Alexander's operation I have found this procedure of exceedingly great service as supplementary to the operation for shortening the round ligaments, and consider it a necessary procedure to insure success in this operation in cases where there is great laxity of the vaginal walls.

RECENT PROGRESS IN ANATOMY.

BY THOMAS DWIGHT, M.D.

THE EFFECT OF OCCUPATION ON THE SKELETON.

MR. W. ARETHNOT LANE¹ has added to his studies in this line that of the body of a shoemaker, which is extremely curious. It would be beyond our limits to follow him in detail, and much of the paper is necessarily so technical that we fear few readers would follow us if we did. That occupation does have an effect on structure is at first sight a truism, but when we come to study *how* it acts the question becomes a very important one. We see, on the one hand, purely mechanical changes, such as the distortion produced by excessive pressure; and, on the other, distinctly vital changes, showing the tendency of the organism to adapt itself to new conditions. The front of the chest of this shoemaker is a striking illustration of both of these processes. The lower part of the sternum was very deeply pressed in. The lower end of the body of the sternum, where the ensiform cartilage (turned to bone) joined it at an angle, was only one inch and a half from the spinal column when the body was lying on the back, and but half that distance from it when placed in the sitting position. Here is the mechanical process; now for the compensation: "The anterior surface of the gladiolus, and especially of its lower half, was covered by a *thick layer of dense fibrous tissue*. This was evidently produced by the blending of the *enormously hypertrophied*

¹The Anatomy and Physiology of the Shoemaker. Journal of Nat. and Phys., Vol. XXII, July, 1888.

anterior chondro-sternal ligaments with those immediately adjacent on the same side, and with their fellows across the middle line." The joint between the manubrium and the gladiolus was much strengthened by a strong anterior ligament, which became very tense during pressure on the gladiolus. "The strain sustained by the first costal cartilages resulted in their very complete ossification, and, though it was necessary that some joint should develop in the rigid cartilage, yet this joint was placed very obliquely, its outline was remarkably irregular, and the movement permitted in it very limited." With regard to the ossification of the costal cartilage, we must remark that, useful as it may have been, it perhaps needs no explanation beyond the age of the individual, which was seventy-three. It is evident that the respiration with such a thorax must have been chiefly abdominal, and, in fact, "the proportion which is normally borne by the muscular and tendinous constituents of the diaphragm to one another was materially altered in this subject. The muscular portion was remarkably thick, and encroached very considerably upon the area which is normally tendinous. Thick bundles of muscle-fibre projected prominently from the under surface of the muscular layer."

As we have said, we cannot go into the many interesting points in this paper. We have written this much chiefly to show the scope and character of the investigations Mr. Lane has engaged in.

We shall now allude to a supposed law concerning which, we must confess, we have some doubts, though these concern Mr. Lane's application of it even more than the law itself:

"It is that, in proportion as a muscle is exposed habitually to a constant and considerable strain, in the same proportion do its muscular fibres tend to retrocede to tendon, and the bony surfaces into which it is inserted tend to grow in the direction of the traction which the muscle exerts upon them." The use of the word "strain" is ambiguous. If it means that a certain muscle frequently and suddenly put on the stretch by the action of other muscles tends to become fibrous, we are inclined to accept it; but it appears from Mr. Lane's application of the law that it is to apply to a muscle producing the strain by its own contraction, and this we are not prepared to admit. He shows in illustration of this law, or rather, of his interpretation of it, the shoemaker's scapula, which is broad and irregular in the posterior border, besides presenting a broadened spine; the former of these characters he traces to the action of the rhomboids, and the latter to that of the trapezius, both of which muscles come into play in drawing the thread. He contrasts this scapula with one from a laborer who had apparently carried loads on his right shoulder, in which, beside other peculiarities, the superior angle, along the back of which the levator anguli scapulae is inserted, is prolonged upward. Mr. Lane intimates that he shall return to this subject. We hope he will, for it is one of great interest. We by no means always agree with Mr. Lane, but we give this fragmentary report that the readers of the JOURNAL may have, at least, a general idea of the nature of his investigations.

THE RECONSTRUCTION OF THE SKELETON FROM THE LONG BONES.

Dr. John Beddoe² read a very valuable paper on

² Journal of the Anthropological Institute of Great Britain and Ireland, February, 1888.

this subject last winter. He approached the question from the anthropological side, but it evidently has also important medico-legal bearings. Dr. Beddoe, in certain investigations, had used Humphry's formula as follows: multiply the length of the femur by 4, subtract $\frac{1}{4}$ of the product, and add for the soft parts, according to Topinard, 35 mm. (1.4 in.); but he points out that it is unsatisfactory, owing to the different proportional length of the legs in persons of low and high stature. Further, the length of the legs in tall men appears to depend on a greater relative length of the tibia. He mentions, also, two methods given by Thurman. The former, which is pretty accurate for persons of about middle height, consists in striking off one inch from the length of the femur, together with half of any excess there may be over eighteen inches, and then multiplying by 4. The other is to add one inch to twice the combined length of the femur and tibia. Beddoe states that this gives too small a result for low statures, but is otherwise fairly correct. We would say in reply to this that the relative height of the trochanter and the top of the symphysis varies with the breadth and with the inclination of the pelvis.

Dr. Beddoe proposes the following plan, which, the reader will perceive, depends on a sliding scale and differs according to sex. To obtain the height of the male, *including the soft parts*, "take away from the length of the femur one-quarter of the excess over 13 in. up to 19, and thereafter only one-eighth, and then multiply by 4." He then gives the algebraic formula and continues: "Thus, more simply, add to thrice the length of the femur in inches 13 in. and one-half of any excess over 19 in. In women, for 13 and 19 read 12.5 and 17.5; or, on the metric system, add to thrice the length of the femur 33 cm., together with one-half of the excess over 48 cm. In women, read 32 and 44 or 44.5. The reason for making these allowances in the case of women is as follows: though the average proportion borne by the lower extremities to the stature is, if anything, rather smaller in women than in men, yet, as the middle stature in the former corresponds to a low stature in the latter, it seems probable that the height about which women pass from dwarfish to average proportions of trunk and limbs must be somewhat lower than in the case of men."

Topinard,³ in a recent article, reviews Beddoe's paper, and, having somewhat modified his previous figures, gives his method of obtaining the height by the proportions. He objects to the plan above given that it seems complicated, as the reason for the figures are not at once evident. He himself neglects the different proportions of individuals of different stature, believing them due to too small series of observations and too great discrepancy of conditions in the subjects. We do not think him justified in this view, but time will show. His present mean proportions are the following: the height being 100, the length of the humerus is 20, that of the radius 14.3, that of the femur 27.3, and that of the tibia 22.1. Thus, if we have any of these bones, it is easy by a simple formula to work out the height of the skeleton, to which Topinard adds 35 mm. to get the height in the flesh.

THE RELATIONS OF THE CEREBRAL ARTERIES TO BONY CANALS.⁴

Professor Rüdinger has written an interesting paper

³ Revue d'Anthropologie, Juillet, 1888.

⁴ Archiv. für Anat. und Physiol. Anat. Abtheil., 1888.

on the relations of the internal carotid in the temporal bone and in the cavernous sinus, and on the vertebral artery in the foramina of the transverse processes. He shows that the carotid is far from filling the canal, and that the walls of the vessel are not united with the periosteum lining the latter. He points out that such an arrangement would be far from desirable, as it would necessarily abolish the pulsatory movements of the artery. That it could not dilate if it filled the canal is self-evident, and even if its connections were loose enough to allow contraction, what would fill the resulting void around the vessel? Rüdinger finds that the vessel is surrounded by a rich plexus of veins, an arrangement admirably adapted to compensate for its varying size. The size of the artery he finds much smaller than that of the canal. The diameter of the latter varies from 5 mm. to 7 mm., that of the artery from 3 mm. to 4.3 mm.; thus there is a considerable space to be filled by the veins. The artery in the sinus cavernosus is in contact neither with the bone nor the dura, though situated at one side of the cavity. It has already been shown that in the fetus the sinus cavernosus is essentially a venous plexus. There is not much to say about the relations of the vertebral arteries in the transverse foramina. It was well known before that they do not fill the foramina, and that at least one vertebral vein accompanies them. Rüdinger shows that they are surrounded by a network of veins. The paper is beautifully illustrated.

THE ESCAPE SYSTEMS OF THE RENAL VEINS.

Dr. Lejars⁵ has studied on some eighty subjects the arrangements by which the blood can escape from the kidney in cases of closure of the inferior cava, or in the very common cases of its engorgement. As he well says: "Even under physiological conditions the blood in the renal veins must be arrested, though but for an instant, just before the systole, when there is a wave backward from the heart, and this obstacle must be exaggerated in tricuspid lesions and hypertrophy of the right side of the heart." In some animals, as the horse, sheep and rabbit, valves guard the mouths of the renal veins. MacDonnell some thirty years ago claimed that this valve occasionally exists in man. Dr. Lejars has not found it. "Two or three times only the angle at the junction of the renal veins with the cava, which is always a well-marked spur, was raised into a slight lid, (*opercule*) but very thin and incomplete, quite unfit to do the work of a valve.

The want of protection by valves is made up for by anastomoses of the renal veins and other "escapes" which Dr. Legars has studied very thoroughly. He finds that these safety arrangements may be divided into three classes. First, emerging veins which leave the kidney at other places than the hilus, and empty into neighboring trunks. Lejars found them only six times in eighty subjects. They run either into the cava, the lumbar veins, or the spermatic plexus. Second, the veins of the capsule which communicate with parietal and diaphragmatic veins, with those of the portal system, especially those of the meso-colon, with the veins of the ureter, and with the spermatic or ovarian veins. These communications are usually small, but become developed under favorable circumstances. Third, and chiefly, a venous canal, which Lejars names the *reno-azygo-lumbar*. He found it sixty-two times in seventy subjects, but, curiously enough, only six

times on the right. The following description, applies, therefore, solely to the left. A branch leaves the lower and posterior border of the renal vein, crosses the aorta, and divides into two. The lower branch runs downwards into a lumbar vein in which it ends, with a dilatation which is often very large even in the child. The ascending branch, usually the larger of the two, keeps close to the vertebrae going under the psoas. It ascends by the heads of the tenth, ninth and eighth ribs, and then, turning forward, ends in the lesser azygos. It communicates by a large branch with the spinal plexus.

THE DISTRIBUTION OF THE CUTANEOUS NERVES ON THE DORSUM OF THE HAND.

In our last report we alluded to the well-known difficulty of reconciling the clinical phenomena following the section of nerves with the standard anatomical descriptions of their distribution. Hartmann, whose work we quoted, attempted to account for the discrepancy by anastomoses of nerves, and by the occasional transference of bundles of fibres from the nerve trunk to which they properly belong to another. We are inclined to consider this view a good one, but it does not follow that there is no other explanation. Dr. H. St. John Brooks read a paper on the nerves of the back of the hand before the Section of Anatomy and Physiology at the January meeting of the Royal Academy of Ireland.⁶ He removed the skin from the back of the hand, and dissected the nerves under water. He found that there is a tendency on the part of the nerves to encroach on their neighbors' territory. In one case the radial and ulnar nerves overlapped on three fingers and a part of the dorsum. The amount of overlapping varies considerably. This accounts very simply for the occurrence of areas of diminished sensibility beside those in which sensation is wholly lost.

With regard to the share the palmar nerves are supposed to take in supplying the dorsal surface of the ends of the fingers, Dr. Brooks found that the dorsal nerves extend, in the case of the thumb and little finger, as far as the nails, in the index and ring finger as far as the second inter-phalangeal joint, and in the middle finger as far as the first one. Dr. Brooks mentions some cases of paralysis which may be accounted for by the double nerve supply. Thus, after section of the ulnar nerve, not only was sensation lost over the little finger, one-half the ring-finger, and a corresponding part of the back of the hand, but it was clearly lessened over the dorsum as far as the back of the index.

As we have already implied these observations throw no discredit on the theory of anastomoses of nerves, except that it does not account for everything. The two explanations rest on undoubtedly correct observations. Recently M. Killar⁷ has read a paper on anastomoses of nerves of the upper extremity, which, no doubt, are much more frequent than is generally believed. He treats of, first, the arrangement of the musculo-cutaneous and the median in the arm, second, anastomoses of the median and ulnar in the arm and forearm, and third, the anastomoses of the radial and ulnar in the arm. The details of the paper are too technical to be of interest to most of the readers of

⁵ Bulletin de la Société Anatomique de Paris, Mars, 1888.

⁶ Dublin Journal of Medical Science, July, 1888. The paper is published in full in the Internationale Monatschrift für Anatomie und Physiologie, Band V, Heft 8.
⁷ Bulletin de la Société Anatomique de Paris, Juin, 1888.

the JOURNAL. In the discussion that followed, Hartmann restated the main fact very neatly: The origin of the nerve from the spinal cord is constant, the end is constant, but the course of the fibres between these points varies. We are inclined to question whether it is really established by a sufficient number of observations that the origin from the cord is always the same.

THE POSITION OF THE FEMALE PELVIC ORGANS.*

Professor Karl Bardeleben read a most valuable paper on this subject at the recent meeting of the *Anatomische Gesellschaft*. He had apparently been appointed to study the question and to make a report that should be authoritative. He has presented a very full review of the literature of the subject, and has given his own views, determined by study of the living as well as of the dead body. It would be absurd to hope that all questions in dispute had been set at rest, and, of course, Professor Bardeleben is not infallible, but we think that his account may be accepted as the standard description of these very important relations.

First. The uterus is normally inclined forward when the bladder is empty or nearly so. Besides this anteversion in children and virgins there is also some ante-flexion. With greater distension of the bladder the uterus is pressed upward and backward and at the same time straightened, so that under normal circumstances it may lie behind the axis of the pelvis. The uterus is usually placed unevenly, being more frequently turned to the right. The cause is the distension of the rectum and the sigmoid flexure. The *os externum* is touched by a straight line which runs from the upper border of the symphysis to the lower end of the sacrum. Bardeleben then discusses the causes that determine the anteversion of the uterus. We pass over those depending on development and some alleged ones from comparative anatomy, to consider the mechanical ones. These are the intra-abdominal pressure, the influence of the ligaments, especially the round ligaments, but chiefly the peritoneum which is firmly attached to the fundus, and opposing stretching by means of its unstripped muscular fibres, holds the uterus closely applied to the bladder. Besides this, when the body is in the upright position the weight of the uterus comes into play, tending to turn it forward on a transverse axis.

Second. Our author finds the female bladder of the most varied forms and does not describe any one as particularly characteristic, but points out that the uterus makes an asymmetrical impression which can be seen on the separated bladder when inflated.

Third. The connection between the bladder and the cervix is of variable extent, ranging in the middle line from a few millimetres to two centimeters. It consists of loose connective tissue. Far from being one of the causes of the anteversion of the uterus, it to some extent hinders the swinging back of the cervix and the swinging forward of the fundus. The point that the bladder and cervix are attached by loose connective tissue is an important one as it would appear to permit some movement between the two viscera. The statement was made by Rokitsky in 1859, and by Kohlrausch in 1854, but appears to have been disputed.

Fourth. The remarks on the rectum do not call for

repetition, but our author dwells on the effect of the sigmoid flexure when enlarged. "It hangs frequently in a long loop filled with feces from the edge of the left psoas down into the upper and posterior part of the true pelvis, forcing the uterus and directly or indirectly the left ovary to the right. The bladder then extends more to the left."

Fifth. With regard to the ovaries the statements are not quite so clear. The author accepts the views of Schultze, Hlis and Waldeyer. The ovaries lie at the sides of the pelvis with their flattened surfaces looking in and out, the long axis vertical, the free border behind and the hilus in front.

Sixth. The Fallopian tubes run outwards from the uterus, then backwards in an arch over and around the ovary. Bardeleben calls particular attention to a kind of peritoneal pouch in this region.

[It is evident that displacements of the uterus must effect both the tube and the ovary, the latter most directly through the ligament of the ovary. Further, it is apparent that in its normal condition the ovary presents the least possible surface to pressure from above, but let it be drawn from its place of shelter and it is hard to say theoretically where it may not ultimately be forced.]

Seventh. The author follows Holl concerning the course of the ureters, but we have failed to find the reference. Professor Bardeleben mentions that when he was preparing this paper he had the opportunity of making examinations of living women which he justly considers most valuable. Almost all the contents of the pelvis can be felt by combined internal and external manipulation. The ovaries can be felt, the amount of fluid in the bladder very accurately estimated, the psoas major, pyramiformis, obturator internus, and (when contracted) the levator ani made out. The finger in the vagina can be met not only through the abdominal walls but through the sacro-sciatic notch, though not in all cases. He does not refer particularly to what can be felt from the rectum though we imagine he must have used it as well as the vagina.

In this connection we may mention that Dr. Weiss⁹ has compared the perineum of white and black women and found that in the latter the vulva is situated further back than in the former.

Clinical Memorandum.

SPONTANEOUS FRACTURE OF A RIB.

BY SAMUEL A. FISK, A.M., M.D., DENVER, COL.,
President Colorado State Medical Society.

Mr. X, thirty-two years of age, was sitting after luncheon sideways on his chair, with his legs crossed, and with his right arm over, and his hands clasped on the back of the chair, when, on giving a sudden violent cough, he heard something snap, and felt a sharp, piercing pain in his side. He was put to bed, and an examination revealed a transverse fracture of the tenth rib on the right side, situated about one-third of its length from the spine. There could be no doubt of the existence of a fracture, for the ends of the bones could be felt grating over each other, and the patient could feel the same himself on taking a deep inspiration, or on motion.

* Anatomischer Anzeiger, July 28, 1888.

⁹ Revista de Ciencias Medicas. Havana. Abstract in the Lancet, Vol. 1, 1888, No. 18.

In speaking of spontaneous fractures of the ribs the writers quote the eight cases cited by Malgaigne, all of which were on the left side and produced by muscular action; and the six additional cases collected by M. l'antel, where the fractures were on the right side. Three of these latter were caused by coughing.

"It is believed, however, that in all of these cases," says Hamilton, "the ribs had previously become atrophied, and perhaps undergone other changes in their structure, rendering them liable to fracture from the action of trivial causes."

Of Malgaigne's cases, five were in people between forty-seven and sixty-three years of age, and one in a young man.

It seems difficult to believe that, in the present case there could have been any atrophic wasting of the rib which would render it liable to fracture. The patient is a young man, vigorous and active. To be sure he has had serious lung trouble, for which he came to Colorado. For the past five years he has been the subject of diabetes insipidus, voiding some twelve quarts of urine per day; and in the same time he has had two severe attacks of acute inflammatory rheumatism. He is, nevertheless, in good flesh, actively engaged in his life's work, and is, to all appearances, in perfect health. It seems more reasonable to attribute the fracture to a sudden violent muscular strain put upon a rib which was fixed by the tension of the muscles of the back, from the position in which the patient was sitting, than to attribute it to any atrophic wasting or change in structure.

For the first twenty-four hours the pain was intense whenever the patient moved or coughed, but as the ends of the bones softened the pain diminished, and the greatest inconvenience came from the flannel bandage which he had to wear, and which was kept on day and night. This bandage was worn two weeks, the patient all the time going about his work. With this exception the treatment was *nil*, although more pain was probably experienced from the fracture of this rib than would have resulted from that of any other, because it received no support from the adjacent ribs, and so had freer play. The case is more curious and rare than instructive, and it is simply for this reason that I record it.

Reports of Societies.

AMERICAN NEUROLOGICAL ASSOCIATION.

FOURTEENTH ANNUAL MEETING.

FIRST DAY, TUESDAY, SEPTEMBER 18, 1888.
MORNING SESSION.

THE President, DR. JAMES J. PUTMAN, of Boston, called the Association to order, and made an address. He said that the time had come when neurologists could look to one another for support in their work and, although he had no definite plan of co-operation to offer, still, co-operation in some form had incontestable advantages. It might be possible to use one another's plans in hospital work, in arranging facts, and in verifying and testing the work of others. Thus scanty observations might be combined in pathology and therapeutics, to increase our knowledge, and this thought might relieve the drudgery of much of our

daily work. He suggested a uniform system of case-taking for some of the commoner affections. The more as statistical facts could be secured only by collaboration. Co-operation is not a new thing, for the British Medical Association, and the New York Therapeutic Society have tried it, and other societies have recommended it. Individual work may be better, unless with great leaders like Charcot who have apt pupils to follow them, and there is more vitality where only a few are interested. Still, co-operation may be of service, and the Association can aid the individual by money and by moral support. Thus, if a member wishes to investigate a subject he can notify the Association, which can, if it sees fit, appoint others to aid him. Among subjects suggested were heredity in nervous disease, the degeneration, regeneration, and transformation of types of disease, the action of iodide in non-specific brain tumors, racial peculiarities in neuroses, cranial measurements, etc. He, himself, had been much interested in the question of lead as a causal factor in disease. In patients with nervous disease lead was present in the urine in a large percentage of the cases, while in healthy persons the percentage was very small; his data, however, were not large, and others could aid in the work. Another object worthy of attaining was to have a joint collection of specimens that could be lent or consulted in private laboratories.

DR. PHILIP COOMBS KNAPP, of Boston, then read a paper

ON NERVOUS AFFECTIONS FOLLOWING INJURY. ("CONCUSSION OF THE SPINE," "RAILWAY SPINE," AND "RAILWAY BRAIN").

DR. PUTMAN, said that in these cases an exact diagnosis was more important than elsewhere, not only for the patient, but for the corporations.

DR. E. C. SEGUIN, of New York, agreed with the reader's conclusions. There was a common aetiology, but the pathology was different, and each case should be studied separately. There were two great sources of error; first, that symptoms were often attributed to the accident which had existed before it; and second, that the patient has many subjective symptoms which are due to unintentional deception, and thus deceives the physician. Bernheim has shown that hypnotized patients can give themselves suggestions, and certain symptoms in these cases, but in only a minority of them, must be regarded as auto-suggestions, the result of a firm belief on the part of the patient. There was no doubt that hysterical symptoms might exist with organic disease, as the speaker had shown in a series of non-traumatic cases published in 1875. The reality of the neurasthenic state of which the writer spoke was undoubted, but it existed in many cases not the result of trauma. In railway cases the objective symptoms were few and far between.

DR. LANGDON CARTER GRAY, of New York, said that in these cases we have to demonstrate to a jury what we cannot demonstrate to ourselves. In many cases it is almost impossible to decide on which side to testify. When a patient is injured in a city the lawyers come down upon him and impress upon him the danger to which he has been subjected. This process continues, the case drags on, and the patient cannot afford to get well for fear of being sued for conspiracy. This causes a set of psychical irritations much greater than any hypnotic suggestions that are

employed in France. If cases are settled promptly, the neurasthenic states recover promptly, but, if not, they last because the patient cannot break the habit. Neurasthenic symptoms do not usually come on with organic disease; the contrast between the unstable nervous bearing of a patient in the neurasthenic state and the calm, quiet demeanor of a patient with severe organic disease is very great. It is a question whether the neurasthenic symptoms may not be the result of the attendant circumstances of the injury.

DR. WILLIAM ZENNER, of Cincinnati, said that no class of cases was more difficult to decide upon, and the difficulty will persist until we know more about functional diseases. It is important to note that hysterical symptoms may be present in organic disease, and they are not uncommon in toxic affections, such as lead poisoning. Deception in regard to symptoms may be very considerable, even with actual disease, and it should not lead to a diagnosis of no disease. Actual malingering, except in prisons or in the army to escape temporary duties, is a very rare thing.

DR. PUTMAN said that hemianesthesia was of value as showing that the patient was not a malingerer, as it was difficult to simulate it.

DR. KNAPP said that he had spoken of the neurasthenic state rather as an indication of the patient's condition than as a sequel of injury. In the cases reported there was as a rule, no question of damages, the patients were dependent on their own earnings and anxious to get back to work, and therefore there was little cause for deception.

DR. ISAAC OTT, of Easton, read

ON HEAT-CENTRES IN MAN.

Experiment had shown the existence of heat-centres in the lower animals, and the reader cited various cases to show that there were similar centres in man. Certain cases of injury to the cortex near the fissure of Rolando were reported where the temperature rose to 104° and where other causes of high temperature seemed to be absent. Other centres probably existed in the corpus striatum, the optic thalamus, the pons, and the medulla.

DR. HARK, of Philadelphia, said that it was not correct to destroy a cell and say that its function is to cause high temperature; if the facts are true it is an inhibitory centre whose functions is to cause a fall of temperature.

DR. GRAY, of New York, asked if cerebral thermometry was of any assistance here. The normal variation in cerebral thermometry was so great that there had to be a difference of at least three degrees before it could be looked upon as pathological. Why, with a lesion of one centre, should there be a rise of temperature on one side in some cases, and both sides in others? Why, with so many possible causes, should a rise to only 102° or 104° be regarded as due to a lesion of the centre; it might be so with a rise to 106° or 110°. Cases were also on record where these centres were involved and the temperature remained normal.

DR. J. H. LLOYD, of Philadelphia, spoke of a case of meningeal tumor near the Rolandic centre with a subnormal temperature, and asked what that proved.

DR. OTT said that it was not yet certain whether the centre was excitomotor or inhibitory. Irritation of an inhibitory centre would explain Dr. Lloyd's case.

DR. E. D. FISHER, of New York, read a paper

ON A CLINICAL REPORT OF CASES OF EPILEPSY FOLLOWING CEREBRAL HEMIPLEGIA.

This paper was based on the report of a series of cases of cerebral infantile paralysis attended with convulsive attacks. The paralysis was usually spastic and the growth of the parts was involved. There was imbecility or idiocy and epilepsy. If the lesion be in the cortex, as is usually the case in children, it is attended with imbecility and convulsions; if it be lower down there are rarely if ever, convulsions. Idiopathic epilepsy may simulate the Jacksonian type. When the hemiplegia is congenital it is due to meningeal hemorrhage with parencephalia; the acquired form is due to venous thrombosis (Gowers), or, in older children and after acute infectious diseases, to embolism. Hemorrhage and polioencephalitis are rarer causes. The atrophy was slight, from disuse, and never so great as Knapp reports, not so great as in spinal infantile paralysis. There was often ataxia rather than loss of power, and other disturbances of motion from incomplete lesions of the pyramidal tract.

In most cases the average duration of life as given by Henoch, twenty years, was much exceeded. The nature, onset and course of the seizures was described. Loss of consciousness was the chief feature, and, even in the Jacksonian type, the consciousness was often involved. The intellect was less affected by the attacks, although the attacks were more like those of idiopathic epilepsy than like Jacksonian epilepsy. The writer agreed with Luciani that localization from convulsive seizures, without paralysis, must be approximate.

DR. KNAPP, of Boston, said that two years ago at a meeting of the Association, Dr. Sachs had called attention to the value of convulsions as a focal symptom distinguishing between lesions of the cortex and lesions lower down. A year later, in reporting a series of cases, the speaker had divided them in the same way. It seemed, however, a little uncertain whether the presence or absence of convulsions could be regarded as a focal symptom of absolute significance, and it would be extremely valuable to get autopsies of cases of intracerebral lesion where convulsions were present, if such could be found. In regard to atrophy he had seen and had reported with photographs and measurements, cases of cerebral infantile paralysis where there was greater atrophy than in most of the cases of spinal paralysis that came under his observation, and he was disposed to accept (Quincke's) hypothesis of a trophic centre in the cortex.

DR. G. L. WALTON, of Boston, said that convulsions, as rule, were focal. He mentioned a case where he saw the convulsion. The head went to the left, all the facial muscles twitched, but there was no loss of consciousness. There was some facial paralysis. An operation was under consideration, but the centre for movements of the head in man, were not accurately localized as yet.

The following new members were elected: Drs. Wm. Noyes, S. B. Lyon, and F. B. Peterson, of New York; Drs. H. R. Siedman, Morton Prince, and W. N. Bullard, of Boston; Drs. E. N. Brush and Wm. Osler, of Philadelphia; Dr. C. H. Hughes, of St. Louis; Dr. L. B. Baker, of Baldwinsville; and Dr. S. Ayres, of Pittsburgh.

FIRST DAY.—AFTERNOON SESSION.

DR. R. T. EDES, of Washington, read a paper opening a discussion on

THE RELATION OF RENAL DISEASES TO DISEASES OF THE NERVOUS SYSTEM.

The action of renal diseases upon the nervous system was the only portion of this subject considered. A close relation has long been observed, and the various symptoms have been regarded as uræmic, although they may better be divided into uræmic, urotoxic, and uroseptic; the latter division coming chiefly under the notice of the surgeon. In addition there are vascular symptoms, which may be divided into angioneurotic and angiothentic. Among the various nervous symptoms attributable to renal disease are headache, nervousness, convulsions, coma, paralysis, numb tingers, spontaneous gangrene, etc. Not all of these symptoms are urotoxic. Uræmia is due to the retention of something in the blood which is not eliminated, and possibly to new agents formed, perhaps ptomaines. As uræmic symptoms do not appear until eight or nine days after anuria is produced by artificial means, it is a question whether there may be a gradual accumulation of the urinary constituents. In nephritis there may be a diminished amount of urea, but our normal standard is too high. The amount varies from day to day and a single observation is of slight value. The culmination of symptoms is often called uræmia. Somnolence, insomnia, and other milder symptoms are common, but convulsions are much rarer. Death may come on very quietly, or in the classical manner with sopor and coma. Headache and a feeling of pressure are also common symptoms. The poison is slow in its action, and the milder symptoms last a number of days. These uræmic symptoms are noted toward the close of chronic Bright's disease, being then urotoxic; at other times they are seen when the urinary symptoms are slight. Sometimes the urinary products and the urine are diminished, at other times the symptoms come on suddenly, when there has been no change in the amount of urine. This also points to a slow accumulation of the poison, a slight brief oliguria acting as the final source of explosion. Various mild uræmic symptoms occur with a considerable flow of urine. Latent Bright's disease is the interstitial form, and not the form where the epithelium is degenerated. The forms of mental disturbance that are seen before there is much diminution in the elimination are not uræmic, the later delirium is urotoxic. The symptoms of a localized cerebral lesion, formerly termed "serous apoplexy" and now "uræmia" are not due to any actual lesion like a hemorrhage or to uræmia, but to a serous effusion in any condition where the bloodvessels are effaced. Cerebral hemorrhage is, of course, common in contracted kidney. The headache preceding it is not urotoxic, but is due to vascular disease either angioneurotic or angiothentic. Uræmia ought not to cause unilateral trouble, but œdema may. Cerebral œdema may exist without any symptoms, or it may cause hemiplegia, owing to the slight difference in the amount of œdema in the two sides, as has been noted at autopsies. This theory is corroborated by the existence of localized œdema elsewhere. Suppression of urine for a few hours preceding attacks of apoplexy are the result of the apoplexy and not the cause. The causes of the various

nervous symptoms in renal disease are due to the complicated interaction of various causes:

- (1) Degeneration of the blood, hydræmia, anæmia, etc.
- (2) Poisoning of the blood, uræmia, ptomaines (?) etc.
- (3) Disordered vaso-motor action, spasm, dilatation.
- (4) Vascular degeneration, aneurism, etc.

A table was given showing the probable combination of these causes in producing the individual symptoms. In regard to treatment diaphoresis helps, but rather by its action on vascular tension than by the amount of water or urinary constituents it carries off. The same may be said of bleeding. In cases of high arterial tension nitro-glycerine and possibly the continued use of morphia may give relief.

DR. F. X. DERGUM, of Philadelphia, said that we cannot assume that the presence of urea in the system is not injurious. The slow onset of symptoms in artificially-produced anuria shows that other channels are active. The cause of uræmic symptoms is the retention of urinary constituents, although we cannot say which they are. Convulsions are often due to organic changes, such as œdema or vascular disease. In uræmia we may get focal symptoms without any gross lesion. In many cases the diagnosis was difficult, and œdema and hemorrhage were hard to differentiate. In uræmia the temperature was usually low, but with convulsions there was usually some rise. He should try morphia.

DR. SEGUN, of New York, said that nervous symptoms, headache, paræsthesia in the head, high arterial tension, etc., were not uncommon in the prealbuminuric stage of chronic Bright's disease. He spoke of a patient with typical migraine for some time, with later daily headache of the occipital form; here casts were constant, but albumen was seldom seen. Certain symptoms of pressure, confusion and semi-vertigo, due perhaps to high arterial tension, form the picture of cerebral hyperæmia. In parietic dementia the arterial tension is also high, and here there is almost always contracted kidney. In doubtful cases albuminuric retinitis or choked disc may enable us to decide between renal disease or brain tumor. It is hard to differentiate between angioneurotic and angiothentic conditions, as the two go hand in hand. In regard to treatment, he did not oppose morphia.

DR. GRAY, of New York, said that deviations from the type were the hardest to diagnosticate. He described several cases with anomalous symptoms where examination showed renal trouble. In uræmic headache there is at times a quasi-periodicity which suggests malaria, and the headache is often localized and characterless; quinine also relieves these headaches. In hemiplegia in cases of coma the reflexes are often a valuable aid in diagnosis. In treatment one of the main things is to avoid any strain on the cutaneous vessels; the patient must be kept in bed for a long time, and then carefully guarded from changes in temperature when he gets up.

DR. DERGUM thought that the ophthalmoscope was often of negative value in diagnosis.

DR. ZENNER, of Cincinnati, said that it was hard to believe in the theory of a localized œdema in the cases of paralysis without any lesion. Might there not be the temporary plugging of a vessel?

DR. EDES, in conclusion, said that urea was clearly not the poison in uræmia, and it seldom had any in-

fluence except when injected in very large amounts. Very little urea was eliminated by diaphoretics. The "prealbuminuric" stage of Bright's disease does not precede the lesion, but the classical symptoms belong to a later stage. He did not advise the continued use of morphine in cases of high arterial tension, but merely suggested that its cautious use might sometimes be of benefit.

DR. C. L. DANA, of New York, read a paper on

THE CORTICAL LOCALIZATION OF CUTANEOUS SENSATIONS.

The question was whether there was separate sensory centres, or whether the sensory centres were combined with motor centres. He reported four cases in his own practice, and had tabulated one hundred and thirty-three others. From these data he concluded that the situation of the sensory centres coincided with that of the motor centres, but that they were larger and more diffuse, and it required a deep and sudden lesion to affect them. A total decussation of the sensory nerves was probable. Cutaneous anaesthesia of cortical origin was local and incomplete; total anaesthesia was either functional or sub-cortical. The muscular sense was probably located in the inferior parietal lobule. These conclusions had no bearing on Munk's sensori motor views. The cases of lesion of the motor centres without sensory disturbance are growing rarer, and may be due to incomplete or slowly-developing lesions. In opposition to Ferrier's views of separate centres, eighteen cases of lesion of the hippocampus and gyrus fornicatus had been found without anaesthesia, and no anaesthesia had been noted in cases of tumor of the corpus callosum. The gyrus fornicatus very possibly contains the centre for smell, as it is very small in anomic animals whose tactile sensibility is good.

DR. C. K. MILLS, of Philadelphia, thought that the reader's conclusions were not made out, and that his own cases were not conclusive. He adhered to Ferrier's views, and believed that there are probably sensory centres in the region back of the retro-central fissure, the precuneus, the limbic lobe, and the superior and inferior parietal lobules. It is impossible to get over the cases of lesion of the motor centres where there has been absolutely no loss of sensation. Moreover, cases of lesion of the gyrus fornicatus with anaesthesia have been reported, one of them by the speaker. Lesions of the median fissure were formerly overlooked. Furthermore, association fibres from the sensory centres probably go to the motor centres, and if these are injured it may give rise to sensory disturbance.

DR. M. ALLEN STARR, of New York, said it was still an open question. Tracts which are made out in the fetus cannot be detected in the adult. In the fetal brain there are tracts going from the posterior portion of the internal capsule to the parietal and posterior central convolutions. Embryology favors Dr. Dana's views. No fibres in early fetal life are found curving upwards toward the limbic lobe or the gyrus fornicatus, but all go to the convexity. Comparative anatomy is also important. Meynert has shown that in the gyrus fornicatus is probably the centre for smell. If not, why is it so large in osmic animals and so small in anomic animals. In pathology, many of the cases are unsatisfactory. There are no cases to support Ferrier's hypothesis. Lesions of the gyrus fornicatus

have not been overlooked, but have been carefully sought for. The corpus callosum is singularly free from disease. Lesions of the hippocampus are suspicious, because it lies on the crus, and the sensory tract in the crus can thus be easily involved. This would vitiate Ferrier's conclusions. We must also distinguish between irritative and destructive lesions. One of the most constant signal symptoms in cortical epilepsy is parasthesia, which ought to show a connection between the sensory and motor centres. He believed, however, that the tactile area of each half of the body was represented on both sides of the brain, just as the eye was.

DR. SEGUN, of New York, favored the theory supported by Dr. Dana. The older experiments in extirpating motor centres also favored this view, as did the marked sensory aura as a signal symptom in cortical epilepsy. The results of removal of portion of the cortex in man will give valuable information. In a case of his own, where a tumor in the motor region was removed, the man has anaesthesia in the cheek and hand on the opposite side, which has been more marked since the operation.

DR. DANA said that he started in with a bias in favor of Ferrier's views, but a study of the cases made him abandon them.

SECOND DAY.—WEDNESDAY, SEPTEMBER 19, 1888.

MORNING SESSION.

DR. F. X. DERGUM, of Philadelphia, read a paper on

A SUBCUTANEOUS CONNECTIVE TISSUE DYSTROPHY OF THE ARMS AND BACK, ASSOCIATED WITH SYMPTOMS RESEMBLING MYXEDEMA.

The case was one of a woman of forty-five, who, without known cause, began to have pain in the arms, which was followed by the development of huge, pendulous masses, elastic, lobulated, and not pitting on pressure. This enlargement was subcutaneous, and had no connection with the muscles. There was some anaesthesia, and later attacks of pain, followed by the formation of nodulated swellings, which at times persisted. Harpooning showed mucous tissue, large fusiform cells, and a little fat. For two or three days the speech was a little thick. The skin was not involved, and the intellect was not impaired.

DR. MILLS, of Philadelphia, had seen similar swelling of the face, followed by sudden death.

DR. W. A. HAMMOND, of New York, said that one or two of the essential features of myxedema was lacking, the skin remaining unaffected, and there being no mental impairment. Myxedema was unknown in this country until the speaker called attention to it. There is usually slowness of speech and of thought. The fingers are often clubbed, unlike Dr. Dergum's case. The thyroid did not seem to be involved. This case seemed a little analogous to those of enlargement of one half the body. If this were myxedema we must revise our ideas of that disease.

DR. PUTNAM, of Boston, said that transition cases were always of interest. He had seen a case where one arm was much enlarged. This case seemed pathologically the same as myxedema, but clinically it was unlike it.

DR. DERGUM said that the fluid in the meshes of the subcutaneous tissue may have been lymph instead of a denser fluid. Neuritis and angiectasis were prom-

inent in the case. Mental impairment was not always seen in myxœdema, and the thyroid was often wanting — a point difficult to determine during life, especially with a stout person.

DR. G. W. JACOBY, of New York, read a paper on
SUBACUTE PROGRESSIVE POLYMYOSITIS.

The patient was a man of thirty-five, who, two and a-half years before began to have pain, tension and tenderness in various muscles. Incisions were made, thinking it cellulitis, but no pus was found. The muscles were swollen, hard and tender, but the nerves were not tender. There was no mechanical irritability, no fibrillary twitching, and no RD. The knee-jerks were much diminished. Portions of muscle were excised, and showed very small fibres, an increase in the perimysium externum, with new connective tissue myxomatous or fibrous. There were some fat globules in the perimysium externum, with a little waxy degeneration of the connective tissue. The muscular fibres were not much involved. The writer thought there was a relation between this and the primary myopathies.

DR. B. SACHS, of New York, read a paper, opening the discussion, on

MUSCULAR DYSTROPHIES.

The writer defined the dystrophies as muscular wasting with or without pseudo-hypertrophy, and without nervous change. The history of the different theories was reviewed. Progressive muscular atrophy of the Aran-Duchenne type was a spinal affection. Pseudo-hypertrophic muscular paralysis was also attended with atrophy, but was unquestionably not of spinal origin. Erb's juvenile form was not identical with pseudo-hypertrophy. The distribution of the atrophy ought not to be made a distinguishing factor; therefore the writer did not believe that Leyden's hereditary form or Landouzy and Dejenne's form should be regarded as special types. In the primary myopathies there was progressive wasting with hypertrophy, no fibrillary contractions, no RD, and no changes in the spinal cord. Charcot and Marie's peroneal type had RD and fibrillary contractions, and was therefore regarded as a variety of progressive muscular atrophy, type Aran-Duchenne, of spinal origin. Mixed forms of primary myopathies also existed. In the history of the dystrophies the only distinguishing point was the hypertrophy of fibres which was not found in the spinal forms. The results of harpooning were misleading. Hitzig believed that in Erb's form the changes in the fibre were primary, but that in pseudo-hypertrophy the changes in the connective tissue were primary. The following conclusions were reached:

(1) Progressive muscular atrophy, type Aran-Duchenne, is of spinal origin, and Charcot and Marie's peroneal type is similar to it, thus affording a hand and leg type.

(2) Pseudo-hypertrophy is not of spinal origin, the lipomatosis being incidental.

(3) Pseudo-hypertrophy is related to Erb's type, but is not identical with it. They differ in distribution and history. There are no fibrillary contractions or RD in either. Lipomatosis is sometimes present.

(4) All forms may show heredity.

(5) Landouzy and Dejenne's type is identical with Erb's.

(6) Pseudo-hypertrophy and Erb's form are the two representative types of dystrophy.

(7) The primary myopathies are distinguished from the spinal forms by the cardinal symptoms, absence of fibrillary contractions and RD, and presence of true or false h. hypertrophy.

The following classifications were suggested:

(a) Progressive spinal amyotrophy; (a) arm type (Aran-Duchenne); (b) leg type (Charcot Marie, Tooth).

(2) Progressive primary dystrophy; (a) pseudo-hypertrophy; (b) Erb's type.

DR. KNAPP, of Boston, agreed with the reader's conclusions. Pseudo-hypertrophy and Erb's type were distinct chemically, but histologically they were alike. The primary myopathies differed histologically from the secondary spinal forms only by the presence of hypertrophied fibres. Clinically, the distinction must be made by the absence of fibrillary contractions and RD. Histologically he believed that in both forms of dystrophy the process began by atrophy of the muscular fibre, and that the changes in the connective tissue, the lipomatosis, etc., were secondary. He saw no reason to regard it as an inflammatory process.

DR. JACOBY questioned the propriety of a distinct division into types, for there are many mixed forms which could not be differentiated. It seemed fallacious to make the presence of hypertrophied fibres the sole test, for primary forms were reported without hypertrophied fibres. Acute inflammatory changes may give rise to changes like those in the myopathies, so that it seems plausible to regard part of the cases at least as inflammatory. That is the only hypothesis by which we can explain the reported recoveries from pseudo-hypertrophy.

DR. GRAY, of New York, thought pseudo-hypertrophy probably peripheral, but there were cases where there was legitimate reason for doubt. In other forms we cannot be certain whether they are peripheral or central, as he did not regard fibrillary contractions and RD as distinguishing symptoms.

DR. W. A. HAMMOND, of New York, objected to certain criticisms made on his work by Dr. Sachs. The statements in the last edition of his book were up to date, and certain cases of pseudo-hypertrophy, like Barth's could not be explained away. We cannot yet say what we believe. The harpoon is certainly of great value.

DR. WALKER, of Boston, spoke of a case of the peroneal type which he believed to be a primary myopathy.

DR. PUTNAM, of Boston, showed specimens from a case of hereditary dystrophy.

DR. SACHS thought we ought to bring some order out of chaos, and regarded fibrillary contractions and RD as extremely important. It was better, however, not to set up too many types.

DR. DAVID INGLIS, of Detroit, was elected to membership.

— *Young Doctor.* Busy? I should say so! There never was any one more pressed for time than I.

Old Doctor. Oh, yes, there was; he is at the museum.

Young Doctor. Who is he?

Old Doctor. An Egyptian mummy. — *Chicago Medical Journal.*

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

SECOND annual meeting, held at Willard's Hotel, Washington, September 18th, 19th and 20th.

DR. EDWARD L. KEYES, President.

DR. ROSWELL PARK, of Buffalo, read a paper on

PYÆMIA AS A DIRECT SEQUEL OF GONORRHOEA.

The history of a case admitted to the hospital in 1882 was given, that of a man who about a month previous, had contracted gonorrhœa of ordinary severity, the discharge ceasing after about two weeks. A few days afterward one knee swelled and his physician treated him for gonorrhœal rheumatism. When the patient entered the hospital both knees were swollen, one to such an extent that it was tapped, and cloudy serum escaped. The patient's condition was typhoidal, evidently due to sepsis, and after some days death ensued. The autopsy revealed a collection of pus and erosion of bone at the sterno-clavicular articulation, pus in several other joints, enlarged mesenteric glands, etc.

Pyæmia as a direct sequel of gonorrhœa was extremely rare. That it could be caused by the gonococcus had not been proven. The author had made many cultures of discharges from the urethra of persons who had a slight gleet on up to a severe gonorrhœa, and in every case had found the bacteria of sepsis. These he thought might easily have caused the pyæmia in his case, but the wonder was that more patients did not become infected.

DR. BRYSON, of St. Louis, thought it was important to know whether this was the patient's first gonorrhœal attack. If he had had a previous discharge which had been lit up by sexual or other excess, the case would not be unusual.

DR. PARK could not say whether it was the first attack.

CLINICAL OBSERVATIONS ON GONORRHOEA, WITH SPECIAL REFERENCE TO ETIOLOGY, DURATION AND TREATMENT.

by Drs. JOHN P. BRYSON and EDWIN C. BURNETT, of St. Louis.

The observations were based upon 1394 cases of urethritis in the male. The difficulty of making cultures of the gonococcus, and the impossibility almost of getting human subjects to resort to experiments upon themselves, rendered accurate clinical observation very desirable. The more widely their observation had extended and the more accurate it had been, the more thoroughly they seemed to accord with the doctrine of the special nature of gonorrhœa. The whole clinical course of a gonorrhœal urethritis differed from that of a simple inflammation of the urethra. Several cases had convinced them of the justice of the claim of a period of incubation. The gonococcus had been present in large numbers in cases which had run a course of high inflammation; no case in which it had not been found had shown a high state of inflammation. The average duration of the gonorrhœa had been from six to eight weeks. All appearance of a urethral discharge might be absent for some time, and yet some excess or irritating cause light up the inflammation in a severe degree; it was, then, difficult to say when a positive cure had been effected. A large number of cases became chronic, and the disease

might continue even eight or sixteen years. Local parasiticide had been of little benefit, at least not until the third stage, when the most effective had been astringents; balsam of copaiba and oil of sandal wood administered internally, perhaps also acted as germicides.

DR. CHISMORE mentioned the case of a doctor who had not had a gonorrhœa for fifteen years, yet the passage of a clean sound was followed five hours afterward by a creamy discharge which disappeared without treatment after twelve hours, yet it contained the gonococcus in large numbers.

DR. R. W. TAYLOR warned against basing a diagnosis of true gonorrhœa on the presence of the gonococcus.

THE PRESIDENT thought the continued absence of the gonococcus from the discharge was evidence of a simple urethritis, but the presence of the germ did not determine the certainty of a gonorrhœa.

DR. E. R. PALMER, of Louisville, then read a paper on

RETROJECTIONS IN GONORRHOEA.

The observations of Drs. Brewer, Halsted, Curtis, Wily, and others, on the marked value of retrojections of hot water, weak solutions of bichloride of mercury, etc., were discussed, and the author's own results in recent cases were given. He had found that, notwithstanding several physicians had claimed that gonorrhœa could commonly be cured by such irrigations in from perhaps seven to eighteen days, the majority of cases would continue five or six weeks. An apparent cure might take place after a few days, but the discharge was likely to recur. He had found better results from additional local treatment with salicylic acid or boric acid.

Those who discussed the paper had failed, as the author had done, to cut short the gonorrhœal attack in the length of time claimed by the more enthusiastic advocates of free irrigation.

THE USE OF NITRATE OF SILVER IN THE LOCAL TREATMENT OF CHRONIC URETHRAL DISCHARGES.

DR. F. R. STERGIS, of New York, read the paper, the first part of which was devoted to a description of the appearances seen through the endoscope in these cases, by the aid of which instrument of a modified form he had been able to make local applications of nitrate of silver with much satisfaction.

The treatment by nitrate of silver, as was well known, was not new. But hitherto he had found the objection to it to consist in pain and unpleasant results following contact with other than the diseased part. He was now able to make the applications and limit them with great exactitude. Strong solutions could be employed, even sixty grains of nitrate of silver to an ounce of water.

A paper entitled

THE DIAGNOSIS AND TREATMENT OF CHRONIC URETHRITIS, WITH DEMONSTRATIONS OF INSTRUMENTS,

was sent by DR. OBERLÄNDER, of Dresden, Germany.

The endoscope was described, and by its use every change in the mucous membrane of the urethra became manifest. The different degrees of inflammation with the accompanying changes in the lining

membrane of the canal were pointed out. Papillomata were not as uncommon as usually supposed. As a rule he preferred dilatation to all cutting operations in stricture. He had discarded local applications of galvano-cautery and sulphate of copper. Solutions of nitrate of silver had been useful.

The President, DR. TAYLOR, and others present thought the value of the endoscope was somewhat overrated.

FIRST DAY. — AFTERNOON SESSION.

DR. SAMUEL W. GROSS, of Philadelphia, read a paper on

THE CONNECTION BETWEEN MASTURBATION AND STRICTURE OF THE URETHRA.

Tables of cases which had come under his observation in addition to those which he first published in 1877, were read. In all there were about 331 cases of masturbators whose urethra were examined with the result of finding one or more coaptations in eighty-eight per cent. The examinations were made upon patients who had never had gonorrhoea nor injury to the perineum. As a rule, the stricture was of large calibre, single, and situated near the orifice.

DR. R. F. WEIR admitted the frequency of coaptations in the urethra of masturbators, but he did not think the conclusion was justified that the masturbating habit was a common cause of the stricture. Strictures of large calibre were found even in the urethra of babies, and in the newly born. He regarded these urethra as normal.

DR. CABOT, of Boston, did not regard the diagnosis of stricture as opposed to spasmodic contraction as settled without the administration of ether.

MR. REGINALD HARRISON, of Liverpool, had not heard the paper read, but stated that he had not been able to satisfy his mind that masturbation led to any permanent contractures of the urethra such as we knew under the term organic stricture.

DR. GROSS directed attention to the extreme sensibility of the urethra to the passage of instruments in masturbators, the endoscopic appearances, etc., in evidence of the existence of hyperæmia and irritation which would naturally lead to organic stricture, and this could be demonstrated to the eye when division of the cicatricial tissue was made near the meatus.

THE CURABILITY OF URETHRAL STRICTURE BY ELECTRICITY; AN INVESTIGATION.

DR. E. L. KEYES, of New York, read the paper. Confidence in the treatment of stricture by electricity had lately been growing throughout the land. Therefore he had determined to study the method, and had received the kind co-operation of Dr. Robert Newman.

Six cases were selected, two being treated by Dr. Keyes, one by Dr. Newman under the observation of Dr. Fuller (Dr. Keyes's assistant), and the remainder by Dr. Fuller, who received instructions from Dr. Newman. A full description of Dr. Newman's methods and results, and the results claimed for it were given, followed by a detailed account of the six cases treated. In brief, the results in all the cases had been unsuccessful, not excepting the one treated by Dr. Newman, although Dr. Newman's account of it was somewhat different. He concluded that the claims for the treatment of stricture by electricity had not been demonstrated.

The paper was discussed by Drs. F. S. Watson, Bangs, Sturgis, Tilden Brown, whose experience had not been favorable. With apparently one exception, Dr. Chismore's experience had been unsuccessful.

NOTES UPON THE PROGNOSIS OF ORGANIC STRICTURE OF THE URETHRA.

E. HURRY FENWICK, F. R. C. S., England, sent the paper. Dr. Fenwick based his prognosis upon the amount of residual urine in the bladder, and upon the rapidity with which the bladder muscle regained its tone after the restoration of the urethral calibre.

SECOND DAY. — WEDNESDAY, SEPTEMBER 19.

THE OPERATIVE TREATMENT OF HYPERTROPHY OF THE PROSTATE, WITH STEREOPTICON DEMONSTRATIONS OF SPECIMENS, ETC.

DR. FRANCIS S. WATSON, of Boston, read an exceedingly interesting paper, illustrating it with the stereopticon.

It was followed by a paper entitled,

PROSTATOTOMY FOR ENLARGED PROSTATE AT THE AGE OF FORTY-TWO YEARS,

by DR. ARNER POST, of Boston.

The Secretary then read a paper from DR. WILLIAM M. MASTIN, of Mobile, on

THE HISTORY OF THE FILARIA SANGUINIS HOMINIS: ITS DISCOVERY IN THE UNITED STATES, AND ESPECIALLY THE RELATIONSHIP OF THE PARASITE TO CHYLOCELE OF THE TUNICA VAGINALIS TESTIS.

The paper was a long one and led to the following conclusions: It can be assumed that the filaria sanguinis hominis presents the pathological quantity in many forms of lymphatic disease, and mainly those implicating the genito-urinary apparatus; that the nematoid not only occurs in, but is undoubtedly indigenous to some portions of the United States, especially the Gulf States. In the present state of our knowledge prophylaxis consisted in filtration of the water to which access of the filarial mosquito was possible.

The President exhibited some chylous urine from a man whose blood contained the filaria.

CLINICAL OBSERVATIONS OF DISEASES OF THE TESTICLE.

DR. L. BOLTON BANGS, of New York, recited three or four cases chiefly to show the difficulty of diagnosis in disease of the testicle, and he expressed the opinion that in far the greater number of cases of inflamed testicle the affection was due to direct injury or to extension of inflammation from the prostatic urethra. In one case a simple chronic inflammation of the testicle, with hydrocele, was mistaken by an able physician for tuberculosis, while in another a tubercular testicle had strongly the appearance of being cancerous.

THE PRESIDENT, DR. BRYSON, and others who discussed the paper thought the tendency of the day was more and more toward conservatism in tuberculosis of the testicle. DR. TAYLOR, however, thought the organ should be removed.

CASE OF REMOVAL OF BOTH TESTICLES FOR RECURRENT CARCINOMA.

DR. FRANK W. ROCKWELL, of Brooklyn, read the history of the case, that of a man who early in January, 1887, applied for admission to the hospital. About

two months previously he had noticed a hard nodule in the right epididymis, and on admission the swelling was six times the normal size of the epididymis. The tumor with the testicle was removed, the testicle was free from the disease, the tumor was scirrhus cancer. The wound healed kindly. In the following May a similar condition was found in the left epididymis, but there was no recurrence at the former site of the disease, and no enlargements of the glands. The organ on the left side was removed, and the same condition was found as existed in the first specimen removed. The wound healed kindly, and there had been no recurrence in July, when the patient was last seen.

SOME POINTS IN THE DIFFERENTIAL DIAGNOSIS OF BLADDER AND KIDNEY AFFECTIONS, WITH DEMONSTRATIONS OF THE CYSTOSCOPE AND OTHER INSTRUMENTS.

DR. ALEXANDER W. STEIN, of New York, read the paper in which he pointed out the difficulty of locating the exact seat of disease in affections of the genito-urinary tract, more especially in deciding whether the kidneys were affected, and if so, which one. The advantages of the cystoscope were pointed out. It was often important to learn the character of the urine as it came directly from one kidney or the other, and while various suggestions had been made in this respect, and methods devised for collecting the urine, yet liability to error was still great. The author had devised an instrument, which, however, had not yet been put to the test on the living subject, consisting of a catheter which could be introduced through the urethra, and its distal end, with its rubber cap and fenestrum, be placed directly over the mouth of the ureter, aspirating it, while the urine from the other ureter flowed out by the side of the catheter.

The PRESIDENT had once removed a diseased kidney in a patient on the assurance by Freund, who based his opinion on the collection of urine from one ureter, that the other organ was sound; yet, after the patient died some days following the operation, the remaining kidney was found atrophic.

DEMONSTRATION OF A PERFECTED EVACUATOR AND AN IMPROVEMENT IN THE METHOD OF REMOVAL OF DÉBRIS FROM THE BLADDER.

DR. FESSENDEN N. OTIS, of New York, reviewed the history of the evacuator devised by Professor Bigelow, with its improvements, and those of Sir Henry Thompson; presented his own which he exhibited before the New York Academy of Medicine about two years ago, and stated the instrument in his hand was, he believed, about as near perfect as could be desired. It permitted of no regurgitation of the debris, and at the same time was not encumbered by a strainer or valve. When empty it weighed but ten ounces, and when filled it weighed eighteen ounces, while Bigelow's when empty weighed twenty-four ounces, and Thompson's when empty weighed twenty-seven ounces.

LITHOLAPLAXY IN MALE CHILDREN.

SURGEON-MAJOR D. F. KEEGAN, of Indore, Central India, sent the paper. The more they had practised this operation in India, the more they liked it. Accomplished facts had demonstrated how purely theoretical were the objections to it. Attention was directed to accompanying tables. They showed that litholapaxy in male children was tried very tentatively at first. The average stay in the hospital for the boys

after litholapaxy was 5.7 days; the average weight of the stone was 93 grains; the percentage of mortality in 114 patients operated upon since 1883 was 3.5; but it was fair to exclude certain cases, which would reduce the mortality to one-half this figure. The table also showed that the Bigelow operation was capable of dealing with large hard stones in boys. No patient had returned for recurrence of stone.

OPERATIONS ON THE KIDNEY.

DR. WILLIAM H. HINGSTON, of Montreal, in this paper discussed more particularly nephrectomy, giving a brief historical review, and answering objections to performance of the operation. But the question which was most difficult of solution in the whole range of surgery was, what cases of renal disease were suitable for operative interference. Floating kidney had been mistaken for a diseased ovary, hydronephrosis for cystic tumor, cyst of the kidney for cyst of the ovary, or for cyst of the liver, or for carcinoma of the kidney, and so on. In one of his own cases he had found it impossible while operating, to say positively whether the tumor which he was removing was a tumor of the kidney or of the ovary. He cited some other cases illustrating difficulty in diagnosis of affections of the kidney in his own practice. In two or three cases he had been able to distinguish between other tumors and a tumor of the kidney, only by the presence of a limited resonance to one side of the umbilicus below the false rib. This was sometimes present in ovarian tumors, but very rarely so. The author claimed precedence in the removal of the kidney, having done the operation shortly before Simon, twenty years ago, the date of his operation being March 7, 1868. The tumor, which weighed fifteen pounds, was removed through an abdominal incision. The patient died before the completion of the toilet, the operation having occupied nearly three hours. Generally the lumbar incision should be chosen.

CASE OF NEPHRO-LITHIASIS, COMPLICATED WITH HYDRO-NEPHROSIS, IN WHICH LUMBAR NEPHROTOMY WAS PERFORMED.

DR. FRANK W. ROCKWELL, of Brooklyn, was the author. The case illustrated in a marked degree the difficulties and uncertainties of exploratory operations as practiced in the lumbar region, and certainly for small calculi in normal or slightly diseased kidneys. The man first consulted him in the fall of 1887. When a boy he had suffered from hæmaturia and a calculus had been passed. When seen by Dr. Rockwell he had renal colic, hæmaturia, and at times there was fulness in the right flank. Retention of urine occurred more than once. Dr. Keyes saw the patient in consultation, and advised, if other measures failed, an exploratory operation. The posterior incision was chosen, and the operation was performed in December. There was much difficulty in reaching and palpating the kidney. At one time Dr. Rockwell thought he felt a hard substance in the kidney, but was unable to feel it again, and the wound was dressed. The patient continued to suffer until the latter part of January, when much relief followed the passage of a stone. Again, in March, another fragment was passed, but he had not yet entirely recovered from his former symptoms. Dr. Rockwell thought that if what he felt during palpation of the kidney was the stone, he had probably hastened its passage down the ureter.

DR. PARKS, of Chicago, exhibited a renal calculus removed by lumbar nephrotomy. He first saw the man last May, and learned that he had suffered from intermittent attacks of pain and symptoms of renal calculi for ten years, the pain always being referred to the neighborhood of the left kidney. The symptoms in general pointing to renal calculus, he performed lumbar nephrotomy. There was great difficulty in fixing the kidney so as to carefully palpate it. He punctured the kidney in various places, but was still unable to feel the stone, and was about to give up the operation, when he again introduced his hand and on the posterior surface of the kidney felt a hard substance. The stone was rough, had numerous facets, and was grasped tightly on all sides, but he was enabled to remove it by a pair of slender forceps. The man made a good recovery and was quite relieved. He had performed nephrectomy in one case, removing a tubercular kidney as large as a man's head, through a lumbar incision which was extended around in front of the anterior superior spinous process of the ileum, and the point of the last rib was tilted out of the way. Regarding the diagnostic significance of the circumscribed area of resonance referred to by Dr. Hingston, he with others had mistaken an ovarian tumor for a diseased kidney, because of the presence of resonance limited to the inferior right iliac region.

SIR WILLIAM MACCORMAC mentioned the case of a young man who had symptoms of renal calculus sufficiently distinct to lead a surgeon in St. Bartholomew's to undertake nephrotomy by the lumbar incision, but no stone was found. He afterwards came under his care at St. Thomas's, when the symptoms were very severe, but in view of the negative results of the former operation he hesitated to interfere. He sent the patient away, but he returned after a time, and as the pain was referred more particularly to a point corresponding to about the middle of one ureter, he explored this canal, but found nothing and closed the incision. He learned that the patient afterward passed an examination for admission to the army, and was then perfectly well.

The speaker then related three cases of injury to the kidney, and sought the advice of those present. Three boys had been run over in the streets of London, and suffered, he presumed, a rupture of the kidney which was followed by a large hydro-nephrosis. In each one the tumor occupied the whole flank, extending to the median line. One boy after several tapplings of the tumor, which contained urine, recovered. In the second case the tapping continued about a year, but failed, and he then made a drainage opening, but this failed, and the sinus did not close, and lastly he removed the remains of the kidney and the boy got well. The third case was still uncured; aspiration of the tumor had failed, and the question arose should drainage be attempted, or should the kidney at once be removed? It was because of the trouble from the fistula which was made for drainage and afterward refused to close, that the kidney was removed in the second case.

DR. FRED LANGE, of New York, discussed the choice of operations. He had never operated for tumors of the kidney. He had removed the kidney the seat of pyo-nephrosis, and in these cases he would always choose the lumbar incision to avoid septic infection of the peritonium. In some other conditions the anterior incision might be preferable. Much care

should be taken not to break off any facets in removing the stone from the kidney for evident reasons. He had devised some instruments for its safe removal. It was surgical vandalism to extirpate the kidney for symptoms of renal calculus so long as there was a possibility of removing the stone alone. The stone might be in the opposite kidney from that to which the symptoms had been referred.

DR. GILL WYLLIE, of New York, had operated upon the kidney seven times the past four years, in two cases cutting posteriorly and fixing the dislocated kidney, and in five cutting anteriorly and removing the organ. As to what cases should be operated upon, much would depend upon the subjective symptoms. If these were not severe, the patient would be likely to refuse an operation he never much it was urged by the surgeon. As to choice of operations, he did not doubt that when the kidney was loose from its natural bed, or was enlarged, the anterior operation was the easier and safer. He had no trouble from hemorrhage or shock in the anterior operation. If there were strong evidences of pus, he would prefer the posterior operation. If he could not remove the kidney easily, he would close the wound and subsequently make the anterior incision. A glass tube instead of a rubber one should be employed for drainage; the glass tube remained patent.

DR. RAUMSDORF, of Cincinnati, had removed a hydro-nephrotic kidney through an anterior incision made for exploratory purposes, but the patient died of sepsis. He believed the anterior incision should be adopted in most cases, except when there was special danger of sepsis.

DR. DE FOREST WILLARD thought that if the diagnosis was not pretty positive, the anterior incision should be chosen.

DR. R. F. WEIR, of New York, had done two nephrectomies, three nephrotomies, and had had one case similar to that narrated by Dr. Rockwell. In this case the kidney was thoroughly palpated, but no stone could be felt, and the operation was abandoned. Within twenty-four hours afterward the patient was entirely relieved, and the urine was changed only in being somewhat bloody and containing a large number of uric acid crystals. He was rather loath to believe, therefore, that the trouble was due to only a recently formed calculus. Yet it was known that the handling of the kidney in searching for a stone, none being found and none being passed, had in several instances resulted in relief of the patient. Regarding Sir William MacCormac's case, he suggested giving the patient the trial of drainage before proceeding to nephrectomy. While he agreed at present with Dr. Lange in his preference for the posterior incision in cases of danger from sepsis, yet his conviction was not so firm but that he might soon change it. Might not the peritonium be stitched to the edges of the wound in a way to prevent danger of septic matter entering its cavity?

DR. ANNANDALE, of Scotland, had cut down upon the kidney and had palpated for stone in a number of cases, and, finding none, closed the wound; yet the patients, excepting one, had afterward been relieved of their symptoms.

The President was of the opinion that in Sir William's case he should remove the kidney at once, since the attempt at drainage had resulted so unsatisfactorily in the first case.

DR. G. R. FOWLER, of Brooklyn, had, in the case

of a lady suffering from nephro-lithiasis, made an abdominal incision and palpated the kidney, but discovered nothing. Her sufferings increased after a year, when he made a lumbar incision over the left kidney, but again found nothing. After the second exploratory operation, however, the patient's symptoms disappeared.

The discussion was closed by the author.

ON THE EFFECTS OF RAPID CHANGES OF ALTITUDE IN AN ADVANCED CASE OF INTERSTITIAL NEPHRITIS.

DR. GEORGE CHISHORE, of San Francisco, read the history of the case, that of a man who had peculiar aggravation of conditions related to his kidney affection when reaching the high points in the mountains on a journey from San Francisco to New York, in which latter city his case terminated fatally. The paper was a pioneer one in this line of investigation.

RÉSUMÉ OF AN EXPERIENCE OF SEVENTEEN YEARS WITH THE OPERATION OF DILATING URETHROTOMY.

DR. F. N. OTIS, of New York, in this paper, traced the successive improvements made in his dilating urethrotome since its invention in 1872, showed the advantages of this method of treatment over previous and other more recent methods, and the discoveries which it had led to, as the relative size of the penis to the urethra. He had used the dilating urethrotome in more than a thousand cases, and had never had a death nor abscess result. He used only the short, straight instrument, and pointed out the dangers of the other, which instrument-makers would not take off the market. The incision should be exactly in the median line on the roof, not on the lower surface. As to the radical cure of stricture by this treatment, he had tabulated a number of cases which he had been able to trace some years after the operation, and in a large percentage there had been no re-contraction. The first case he ever operated upon with the dilating urethrotome presented, recently, the same size of the urethra as after the operation years ago.

STONE IN THE BLADDER IN CONNECTION WITH SPLENIC LEUCEMIA.

CHARLES WILLIAMS, F.R.C.S., of Norwich, Eng., sent the paper. The tendency to rapid formation of uric acid stone in splenic leucæmia was suggested, and the dangers of operations in leucæmia because of liability to hæmorrhage were pointed out. His patient was operated upon, and died some days afterward.

CASE OF BOWEL ENDING IN THE URETHRA OF A CHILD FOUR WEEKS OLD; RELIEF BY OPERATION.

DR. ARTHUR T. CABOT, of Boston, presented the paper.

PERINEAL LITHOLAPAXY.

MR. REGINALD HARRISON, of Liverpool, had found that his list of cases of vesical calculi, which came from a region of England not favorable for the development of stone, in which the stone had recurred, had at the bottom of the list those stones of spontaneous occurrence which were independent of previous operation or assignable cause, and that recurrence was usually traceable to some purely mechanical cause. For this reason, it had appeared to him that in suitable cases perineal litholapaxy was preferable to the usual operation, inasmuch as it permitted of digital ex-

ploration of the bladder and associated parts, both before and after removal of the stone. It permitted of rapid evacuation of the stone, and also of drainage and irrigation of the bladder. It appeared that all this could be accomplished by perineal urethrotomy without encroaching upon the neck of the bladder. An important object of this operation was to cure the conditions which led so often to recurrence of stone. He cited three or four cases in which he had performed it. The operation itself was not new.

AN UNUSUAL CASE OF URETHRAL CALCULUS.

DR. HARVEY G. MIDD, of St. Louis, was the author of the paper.

A negro, aged forty-eight, had passed a stone when a youth. He had had trouble with urination five or six years; there was blood in the urine. Having difficulty with urinating, and recognizing some obstruction in his urethra, he was in the habit of pushing a knitting-needle down the urethra, in the hope of freeing the passage. "It felt as if it struck a lot of bones." Forward of the bulb, Dr. Midd removed by external urethrotomy a stone weighing 281 grains, three inches in circumference. Several smaller stones, altogether weighing 82 grains, were removed posteriorly and from the bladder. The patient recovered from his septic symptoms, and was now healthy.

A paper on

SYPHILOMA OF THE VULVA,

by DR. J. NEVINS HYDE, of Chicago, was then presented.

DR. R. W. TAYLOR, of New York, was elected *President*; DR. JOHN P. BRYSON, of St. Louis, *Vice-President*; DR. ARTHUR T. CABOT, of Boston, *Secretary*. The next meeting will be held at Newport, some time in May, the exact date to be fixed by the Council.

AMERICAN DERMATOLOGICAL ASSOCIATION.

TWELFTH annual meeting, held at Willard's Hotel, Pennsylvania Avenue, Washington, D. C., DR. I. E. ATKINSON, the President, in the chair.

TUESDAY, SEPTEMBER 18.—FIRST DAY.
PRESIDENT'S ADDRESS.

The student owes to Hebra the beginnings of a classification of diseases in dermatology based on the foundation of pathology, and it is only by following on in this line that we can hope to make the greatest progress. But simple enumeration of pathological changes is not definite enough for our purposes, for we often find examples of similar effects which are the result of very different causes, and, on the other hand, the same cause may produce at different times, and under different circumstances, results which seem quite unlike. It is, then, to etiology, as the soul of pathology, that we must turn our attention.

The first proposition is illustrated in the diphtheritic membrane, which is seen during the course of diphtheria, and the membrane which is seen in scarlatina, and which cannot be distinguished from the former. A nephritis may be set up by the poison of scarlatina, of small-pox, of malaria, or by the action of certain drugs, the resulting lesion being very similar in all the cases, since nature uses the same weapons against different enemies. Witness, also, the alopecia of tropho-neurotic origin, and that resulting from sy-

philit; the herpes of pneumonia and that of malarial fever; the eruptions of röteln and rubeola.

It has been supposed that micro-organisms are the direct cause of pus-formation, but further researches seem to show that not the organisms themselves, but their products — the ptomaines — are the active element in the suppuration, for these products are able to produce the pus without the micrococci themselves, while the micrococci alone are inert. It has been found that the staphylococcus pyogenes aureus produces ammonia, and it may be that this is the active agent in the formation of pus, since a sterilized solution of ammonia will cause suppuration. In all suppurations of the skin the etiological factor becomes of prime importance. Bockhart found that the suppuration of impetigo, furunculosis and syphilis was due to the action of the staphylococcus pyogenes aureus and albus. These bacteria are found also in the secondary results of specific action. In the pustules of variola, for instance, the staphylococcus aureus is found, and to this is ascribed the pus formation, though not the contagion. So it is probable that there are many so-called skin diseases, where the lesions are but the local manifestation of a general disease. In such a class, perhaps, may be put dermatitis exfoliativa, pemphigus, dermatitis herpetiformis, and others of that sort. In the dermatitis hypetiformis of Dühring there have generally been found lesions connected with the cerebro-spinal system, or tuberculosis, but as yet there has not been found any constancy of lesions which would enable them to be called a well-defined pathological group. If it be true that the eruption is a secondary lesion, due to nervous or vascular irritation, then the disease serves a place in our text-books only as we admit purpura and other disorders which we recognize as largely systematic. It is the task of pathology so discover the relation between the general disease and the secondary manifestations; but until our knowledge becomes more definite we cannot hope that our classifications of disease will prove more than tentative; and until that time shall come we shall have to treat diseases for what they appear to be, rather than what they are.

Dr. G. H. ROHE, of Baltimore, read a paper on

THE ELECTROLYTIC DECOMPOSITION OF ORGANIC TISSUES.

He considers most probable the theory of Clausius, and believes that the human body should be looked upon as a complex electrolyte, and not a simple conductor or resistance. A moderate current would serve as a healthy stimulus, but in the case of pathological products, inflammatory infiltrations, new growths, serous effusions, etc., it stands to reason that an electrical disturbance of some degree, or continued for some time, may produce such a modification of nutrition in the tissues as to promote its regressive metamorphosis. That this is the case the writer firmly believed, though he had to confess his inability to give an exact demonstration of the process.

Sometimes the regressive action may be kept up after the current has been discontinued. It was thought at first that this result was due to the contraction of fibrous tissue, but it is more likely to be the continued cellular activity which goes on after the exciting force has ceased to act. In the treatment of strictures the reader would expect to see the very best of results, and without any unfavorable action on the mucous

membrane itself. There has been too great a tendency on the part of surgeons to look upon the use of the electrical current as beneath their notice.

Dr. HEITZMANN, of New York, spoke of the favorable results reported by Dr. Hardaway, of St. Louis, in the treatment of keloid. Althaus, of London, first introduced the treatment, some twenty-five years ago, but when he was here last year he told the speaker that he had given up the use of the treatment, as he considered it of no value. The speaker had tried it in one case, but without result.

Dr. R. B. MCKIMSON, of Baltimore, had had good results in the growths that came in the scars of operations. In one case a scar that was raised a half inch was rendered flat and white, and the superficial veins were cut off. In one case of keloid in the negro he had had a good result.

Dr. G. H. FOX, of New York, had tried the treatment in four or five cases of true keloid, and also in hypertrophic scars, but could get only a temporary benefit resulting from the cutting off of the superficial vessels. In one case where he had treated tumors, and had expected to get good results, the effect seemed to be an increase in the size of the larger tumors, and the formation of smaller ones.

Dr. J. N. HYDE, of Chicago, would agree with Dr. Fox. After a faithful trial in one case, he had been much disappointed.

Dr. ROHE said, in conclusion, that he had had no opportunity of trying the current on the true keloid; but he had been able to reduce the size of the hypertrophic scars. Since the report of Dr. Hardaway's first publication, Dr. Broeck, of Paris, has used electrolysis in keloid, and reports at length a number of cases in which it has been used successfully.

Dr. C. HEITZMANN, of New York, read a paper on
THE VALUE OF SALICYLIC ACID IN DERMATOLOGY.

He has been using the remedy for the last three years. It has two well-marked properties. The first is the peculiarity of acting on the horny layers of the epidermis, which it first softens and then destroys. Its other action is as a paraciticide. These two properties open a large field for research. We should be careful not to include cases where we have merely "impressions" as to its value; but there are many cases in which there can be no question as to its utility, and in some of these it had never been used before.

The remedy may be used as a powder, a plaster, or in the alcoholic solution. It has the advantage that it does not discolor the skin or linen, and has no odor. It was used in twenty-four kinds of cases.

In hyperidrosis its action is well known. The German soldiers use it in a one per cent. salve of tallow, applied to the feet when upon the march. In seborrhea, especially when combined with acne, it has given brilliant results. One per cent. of the acid with six to eight per cent. of sulphur, is an excellent application for dandruff. A prescription with tar the reader likes better, but it is less agreeable to the patients. In urticaria it is an excellent means of allaying the itching. In furunculosis an ointment of six to ten per cent. has prevented an outbreak, and checked the disease. But to be sure of results the quality of the acid must be guaranteed. In two cases, where the prescription was filled at random, there was no good result, but when Shering's salicylic was substituted the effect was immediate.

In one case of dermatitis herpetiformis a lotion of the acid proved the best thing the patient had tried, although it was not capable of smothering the disease or preventing recurrences. In psoriasis, after the chrysarobin and tar it is the very thing to be applied, though the peeling off of the scales is not as rapid as with other remedies. In lichen planus the salicylic acid is far superior to carbolic acid or sublimate. It can also be applied over a larger area with safety. It allays the itching, removes the scales, and flattens down the papules. The reader had prescribed three per cent. solutions, which were to be diluted at the beginning of treatment. Six cases were treated, and all did uniformly well without the administration of arsenic.

In all varieties of eczema the results were satisfactory. Ninety-six cases were treated, using generally one per cent. of the acid, with equal parts of zinc powder and starch, in two parts of ointment. If it is eczema madicans one-half per cent. is better. In acne, a three per cent. solution will remove pigment patches, assist in removing comedones, and render the skin soft. In acne rosacea the results were good, but in sycosis less good. The remedy does not seem to penetrate deeply enough between the furrows.

In impetigo contagiosa it is the remedy which will cure the disease in ten or twelve days. In keratitis senilis, callosity, clavus and verruca its action in removing the thickened portions is well known. In ichthyosis it is easy to remove the scales, but they will return. In lupus erythematosus and lupus vulgaris the results were brilliant at first, the excrescences flattening down rapidly at first, but not a case was cured. For pruritus in the shape of a lotion it is excellent.

In tinea the solution with gutta-percha is better than Taylor's remedy. But generally the disease will not be cured by any one remedy, and we are only too glad to have more than one. In tinea versicolor a one per cent. solution is effective.

DR. PYE SMITH, of London, spoke of his use of the remedy in the hyperinotic inflammations in the soles of the feet and the palms of the hands, where there are fissures; here the effects of the remedy are wonderful. He could corroborate what Dr. Heitzmann had said in reference to the use of the remedy in fungoidosis, especially as it occurred in school-boys sometimes for months together. He believed that the contagion was carried from one point to another in the dressing. In the treatment of the individual pustules he always hardens the surrounding skin by bathing it in lead lotion. In lichen planus he had tried the salicylic acid with some success, but had found it difficult to follow the cases closely enough to be sure of his ground. He would prefer to wait till more material had been collected. In general, he felt that there were not enough of the cases to warrant definite conclusions.

Dr. Smith then expressed his gratification of the reception he had received and at the progress which Dermatology had been making in this country within the past few years.

DR. L. D. BULKLEY, of New York, had used the remedy largely in many of the cases referred to, and would mention particularly the hyperidrosis of the axilla in ladies. He gives with great confidence a ten per cent. powder, with one drachm oxide of zinc and the rest starch. In eczema he had seen acute attacks started up by it. He would also mention favus of the

scalp, in which he considered it very valuable, in the form of a strong lotion. It is good in seborrhœa, but if too strong, even when mixed with oil, the patient will come back and say it is too drying.

Dr. Fox had used it a good deal in cases of general eczema and psoriasis, when he wished to soften the skin and remove the scales.

DR. A. VAN HARTINGEN used it in the treatment of chronic eczema of the legs in a paste with glycerine and zinc oxide, made into a paste with five per cent. of the acid. If carefully applied the patient will go for from three days to a week without redressing.

DR. E. B. BRONSON, of New York, thought that in most cases we use the remedy as a preliminary measure, as it prepares the surface for other remedies. As to the manner which the acid performed its work, he did not think we yet knew its whole action, and he quoted Unna as saying that it would demand further research. At present, he thought its curative properties were limited to the cases in which it exerts its germicidal action.

DR. HEITZMANN, in closing the discussion simply said that the field of the remedy in hyperidrosis would extend to any portion of the body which was affected, instancing especially the folds of the groin and the genital regions.

DR. E. B. BRONSON, of New York, read a paper on a new remedy

ANTHRAROBIN.

It was manufactured by Liebermann, a Berlin chemist, and was first employed on theoretical grounds, on account of its resemblance to other remedies of known value. Alizarine belongs to the same class, and from this anthrarobin is formed by a simple process of reduction. It is a powerful oxidizing agent, one gramme taking up 120 c.c. of oxygen. It is a yellowish white, granular powder, sparingly soluble in chloroform and ether, readily soluble in alcohol and weak alkaline solutions. It mixes readily with fats in the formation of salves. The presence of an alkali increases the reducing effect.

The reader had treated cases of psoriasis at the Charity Hospital, applying the anthrarobin on the right side of the body, and chrysarobin on the left side. It was used in a ten per cent. mixture, with vaseline, and once a day an alkaline bath was given before the application. Out of the eight cases treated the first five were somewhat surprising. Improvement began sooner and went on more rapidly on the right side, but after the applications were ceased there were more recurrences on the right side. In the other three cases the alkaline baths were omitted, and the improvement was more marked on the left side; but as soon as the baths were commenced the right side began to improve more rapidly. The staining is a dark-brown, and deeper than with chrysarobin, but it is limited to the area to which it was applied. In only one case, and when a twenty per cent. application was made, was it irritating. It has no antipruritic effect.

DR. HEITZMANN had seen its effects in a case where it was applied carelessly, and had made up his mind he would not use it. It is less powerful than chrysarobin, and just as nasty as pyrogallie acid.

DR. P. A. MORROW had seen the cases treated by Dr. Bronson, and could confirm his statements of the value of the remedy. The anthrarobin was less irri-

tating, and less curative than the chrysarobin. He thought the remedy would be used in a good many cases of psoriasis where the skin was delicate, where the stronger remedy would not be tolerated, either from its irritating action, or from some idiosyncrasy.

Dr. BROXSON, in conclusion, pointed out that while the new remedy was less likely to irritate than chrysarobin, and seemed of less curative action than that drug, yet it is to be borne in mind that it may set up a dermatitis.

AFTERNOON SESSION, 3.30 P. M.

Dr. R. B. MORISON, of Baltimore, read a paper on

PERSONAL OBSERVATIONS ON SKIN DISEASES IN THE NEGRO.

The negro seems less liable than the white to diseases of a severe type. The skin is coarser in all its elements, and is less sensitive to poisons, nervous lesions, and to constitutional or general influences. The difference in the blackness of the pigment granule determines the shade, there being no difference in thickness of the pigment layer in the black and the mulatto.

Five hundred cases of skin disease have been tabulated. In general the nearer the color approaches to the white the less difference there is in the character and frequency of the diseases. Acne is very rarely seen: more frequently in the mulatto. In chancre the induration is more marked. Chillsblain is less frequent and less troublesome than in the white. Chloasma shows itself as whitish spots, and the treatment is reversed, for we must produce pigment. Erythema multiforme was seen in two cases where the hands had been used in scrubbing; there was burning and itching, but no redness. In erythema nodosum less pain but more itching. It was seen on the legs. Acute eczema showed 19%, as compared with the 30% of whites. It occurs in spots, and looks like dust on a black coat. It is more amenable to treatment than in the white. Cases of chronic eczema are seen in the men who work at oyster shucking. Nothing but a change of occupation will cure it. Favus is rare, as also is furunculosis. Herpes facialis is common in the babies, as the result of the sugar-tit, which is a piece of bacon dipped in molasses and wrapped in a piece of linen.

Zoster has less pain, and shorter course; keloid sometimes follows. In impetigo contagiosa more itching; crust more yellow. May be confounded with herpes in the diagnosis.

Keloid more common. Two cases after small-pox. In the mulatto it is almost as uncommon as in the white race. Lupus is rare, which seems peculiar in view of the bad habits of the negro. Keloid followed in the case of the one noted. When the tubercles heal they leave a white spot. Lymphadenitis is very common, suppuration is slow, and absorption seldom successful. Pediculi are less common on account of the short hair. Pruritus is exceedingly common, and apparently some diseases appear only in this form. They speak of an "itching in the blood," and all that can be found is a dry hard skin. Psoriasis occurs, and when the scales are removed there may be a bleeding surface. A white spot is left after a cure. Scabies is uncommon, and less troublesome. Seborrhoea capitis is seen in fifty per cent. of the black women, due to their lack of cleanliness. In syphilis the chancre oc-

curs sooner after the exposure, and there is more induration. The inguinal glands become much enlarged, and are prone to suppurate. The secondary eruption may be easily overlooked, as there is no redness. Itching is also likely to be present. The mouth and throat are generally diseased. The tertiary stage is more likely to follow.

Tinea is less troublesome, and the treatment satisfactory. Urticaria is common, and accompanied by some burning and itching. Dermatitis venenata is very uncommon. Sometimes the itching seems to be the only evidence of poisoning in this way. It seems to the reader probable that the pigmentation of the skin is the primary factor which causes the difference in the various diseases. Whether any difference in treatment is to be recommended must be left to future investigation to decide.

Dr. HEITZMANN did not think the term chloasma should be applied to a condition where there was a loss of the pigment of the skin. The fact that there was itching in the eruption of syphilis seemed to him remarkable, since it was so uncommon in the white.

Dr. MORROW had been very glad to hear the paper. He had found it very difficult to make satisfactory diagnoses in the case of negroes.

Dr. BELKLEY had seen a number of cases of chloasma in negroes, and also some cases of vitiligo. He was rather surprised that there were two cases of chancre upon the upper lip.

Dr. SHERWELL remarked the absence of any case of lupus in the five hundred cases. Generally there is about one per cent.

Dr. FOX noted that there was no mention of the exanthemata. He had sometimes been asked to give an opinion in cases where scarlatina was suspected. In the first stages one had to depend on the fever and the examination of the throat. In the stage of desquamation he had been struck with a peculiar "peppered" appearance of the skin, the smooth lustre having been lost.

Dr. FREDERICK had seen more cases of elephantiasis arabum, one being double, he did not remember any case of extra-genital syphilis.

Dr. ROBINSON would criticise the drawing of so distinct conclusions from such a small number of cases. The character of the observations are of great interest but we need more of them.

Dr. ATKINSON had long felt that a chapter in the history of skin diseases was wanting, and hoped that statistics would be kept for a longer time. Though he had found acne uncommon in the negro, yet there is a very common condition of the face of young colored men who are heavily bearded and who shave frequently, which seems to be a peculiar folliculitis. Each pustule is penetrated by a hair, and on incision a drop of pus escapes. It is very persistent, and usually gives no trouble. He could confirm the observation as to itching in syphilis. The papillary syphiloderma is also very common with them, and it resembles the lesion of ring-worm at a certain stage, when it has an iris-like margin. Vitiligo is probably not more common than among the whites, but the contrast in color makes it more prominent.

A member asked if there was any good treatment for the folliculitis of the beard; and he would inquire why Dr. Morison considered the pigment the element which makes the difference in the character of the diseases; why might it not be in the lymphatic

system which would carry off the products of inflammation at a more rapid rate.

Dr. ATKINSON had usually observed the folliculitis of the beard accidentally, and when he had been called upon to treat it, he had not met with very good success.

Dr. MORISON said that the diagnosis of chloasma had been made from the general symptoms rather than from the spot. It was not leucoderma, and he supposed it corresponded to what is called a uterine chloasma. He had been taught that itching was not present in the eruption of syphilis, but in the negro it is not true. He would agree with Dr. Morrow that the number of cases was too few to more than point the way toward further study. As to the influence of the pigment, that was only a suggestion, and not a settled conviction.

Dr. P. A. MORROW read a paper on

THE RELATIONS OF PAPILLOMA TO SYPHILIS AND TUBERCULOSIS OF THE SKIN; WITH REPORT OF A CASE.

The term papilloma is used in a general way to include a great variety of lesions. Papillary outgrowths from the pathological side, are not specific products, but rather accidental results. It is probable that the papillary proliferations which follow a chronic inflammation of the corium are more or less closely allied to the giant granulations which develop in connection with the cicatrization of wounds or ulcers. Practically, it is often impossible to determine, from the aspects of the tumor, whether it is a primary or secondary process.

The patient, an Italian, aged thirty, was first seen in February, 1888. Two and a half years ago his left wrist became inflamed and was subsequently amputated. Otherwise has been and is in good health. A large portion of the face is covered with crusts, under which are found papillary growths, everywhere uniform, suggesting the cauliflower. Pus escapes from fissures between the masses. The vegetations are found to rise directly from a sound skin. The papillomata are soft and fleshy, but soon dry, and are accompanied with much heat and pain. There is a chain of glands in the right side of the neck.

Syphilis was ruled out by the lack of initial symptoms, the sluggish development, the absence of concomitant symptoms, and the failure of treatment, and especially by the absence of the hard brownish-red margins which are almost pathognomonic of the vegetating syphilide. Lupus verrucosa, and the tuberculosis verrucosa cutis were suggested. The reader here went into the discussion as to the identity of lupus and tuberculosis. To him a strong proof was the large number who have tuberculosis elsewhere in the body. It seemed most likely that the disease was a tuberculosis. Some of the papillary growths were removed and submitted to Dr. Elliot, and the bacilli of tuberculosis were found. In accounting for the origin of the disease, the reader considered it likely that the previous disease of the wrist was a tuberculous osteitis, and that the bacilli were in some way transferred from that point.

Dr. Fox thought that frambesia occurred not only in the pustular form of syphilis, but in the ordinary tuberculous form of the disease. He believed that a true eczema might be engrafted upon a syphilitic patch, but he did not remember having seen a disease modified by the existence of syphilis. He called atten-

tion especially to what is termed eczematous frambesia, which occurs on the surface of these syphilitic patches.

Dr. MORROW asked why they were called eczematous?

Dr. Fox replied that they had the characters of acute eczema, and were limited to the syphilitic patches.

Dr. BRONSON had had care of the patient for a time, and was much interested in it. He had at first supposed the disease to be syphilitic, and had treated it accordingly. Under the application of a solution of corrosive sublimate there was improvement for a time. He considered the diagnosis of tuberculosis as good as any that can now be arrived at. It was surprising that after so long a time there were no signs of tuberculosis elsewhere.

Dr. SHERWELL would take issue with Dr. Fox in regard to the influence of syphilis upon other diseases, as eczema. He considered that such an influence was sometimes seen.

Dr. HEITZMANN called attention to the progress that had been made in the study of these affections in the last forty years. He regarded this case as settled from the moment the tubercle bacilli was discovered.

Dr. MORROW asked an expression of opinion as to the identity of lupus and tuberculosis.

Dr. ATKINSON reminded Dr. Morrow of the paper by Dr. Morison not long ago.

Dr. MORROW had understood that Dr. Morison had changed his views since the publication of that paper.

Dr. HEITZMANN was convinced that they were identical, and that the vast majority of dermatologists subscribe to the same view. Kaposi does not agree.

Dr. BULKLEY considers the presence of the tubercle bacilli as proof of the identity of the diseases.

Dr. Fox spoke of the claim that had been made, that there was a difference between the ordinary tuberculosis and the lupus vulgaris.

Dr. SHERWELL, from clinical data, thought there might be still room for doubt. In his experience, there are many cases which have no evidence of tuberculosis elsewhere.

Dr. ROBINSON did not think the question proven with any positiveness. It is true that bacilli have almost always been found, but they have generally been very few in number. Cultivations have been made, and tuberculosis has been produced, but the objection has been that no one has yet produced lupus vulgaris by the inoculation of the tubercle bacillus.

WEDNESDAY, SEPTEMBER 19TH. — SECOND DAY.

Dr. JOHN E. GRAHAM, of Toronto, Can., gave

A REPORT UPON THREE CASES OF DERMATITIS HERPETIFORMIS.

The first two were in men, with history of two and five years' standing. In each there were many recurrent attacks, with extension from the face over the whole surface of the body. There were papules, erythematous patches, vesicles, and brown discolorations. The third case appeared in a strong, healthy woman, twenty-three years old, who had had one miscarriage. On several occasions in early life she had had eruptions on the face of a vesicular and bullous character. Just after the birth of the second child, which was a healthy infant, bullæ appeared at the corner of each

eye. Then they formed on the face, and the disease gradually extended over the body. She failed gradually, and died after many months. There was no autopsy.

After the rupture of a bulla, there might be: (a) scab-formation, with healing and brown discoloration; (b) a new bleb would form on the site of the old one; (c) a raw surface might be left: (d) extension might take place by simple loosening of the epidermis, without any formation of serum beneath. The distinction from pemphigus is made by the herpetiform arrangement of the lesions and by the peculiar method of extension.

Dr. H. W. STELWAGON, of Philadelphia, then read a paper on

DERMATITIS HERPETIFORMIS, WITH NOTES OF THREE CASES.

The first case at one time resembled pemphigus, at another herpes iris, and at still another erythema multiforme. Many attacks have occurred, and the patient can tell of their approach by a peculiar itching of the skin. In the second case, the conjunctiva and the mucous membrane of the mouth and trachea were affected. After he was nearly well of one attack, another came on immediately after a bath. Arsenic was given in each case, with good results. In the third case, a female, there was a tendency to umbilication, but not to rupture.

Dr. HYDE thought we had come to the point where we must separate impetigo herpetiformis and some of the exfoliative disorders from the group of cases that had been so admirably described by Duhring. He would not necessarily associate Dr. Graham's third case with this group simply on the ground of repeated attacks. The previous outbreaks, he thought, might have been of a different character.

Dr. Hyde reported at length a case occurring in a man, with symptoms and eruption precisely like the third case of Dr. Graham, where eventually the whole area of the body was affected, and there was very extensive separation of the skin. The continuous water-bath of Hebra was used, but death occurred after three months. It only differed from the case of Dr. Graham in the absence of previous attacks.

Dr. BULKLEY referred to the address of the President in relation to the need of greater knowledge of the etiology of these affections. He had shown at the New York Dermatological Society a typical case of this disease, which had afterward died, and internal sarcoma was found at the autopsy. Dr. Stelwagon's third case seemed a typical one, and he had learned of her death a month ago, of some brain trouble. While she was under his care she had been taken with acute congestion of the brain, but became better. He thought the dermatitis was an illustration of the acute brain lesion.

Dr. Fox had treated one of the cases reported, and it had shaken his belief in the identity of the various diseases. It illustrated how, from time to time, a disease might pass through different phases of development, and appear as different diseases to different men. He had seen the case between the outbreaks of vesicles, and there was a diffuse erythema. In this case, arsenic did not have a good effect. He had seen one very severe case of bullous eruption get well with no internal medication, and if arsenic had been exhibited the result would have been attributed to it.

Dr. HEITZMANN had been slow in accepting the classification of Duhring, but, so far as his own experience went, he would agree with him. He would not include the impetigo herpetiformis of Hebra.

Dr. SHERWELL had found diabetes in two cases of the disease. They were relieved by diet; but there were others who had no such trouble.

Dr. GRAHAM had examined the urine of all the cases, and neither sugar nor albumen had been found. He believed that the third case arose from a different cause from the others, but we had not yet reached a point to distinguish them.

Dr. STELWAGON believed it best to put these various affections under one head, for we at present have no better place to put them. His doubtful case might have been classed as hydra, but that is a still more doubtful term. He did not believe that diseases should be separated because they had different etiological factors. Acne is acne, though it may be produced in different ways.

Dr. ATKINSON recognized the fact that there was a strong pathological chain binding together this series of cases, but we classified disease according to pathological or clinical expressions simply because data were lacking for an etiological classification.

Dr. ROBINSON thought there were great limitations to a classification from an etiological standpoint; it could never be complete, and, therefore, not desirable.

Dr. A. VAN HARTINGEN read a

NOTE OF A CASE OF FILARIA MEDINENSIS.

The patient worked in the Custom House, and opened invoices from different countries. Last September, he noticed a small red papule under the skin on the back of the hand, accompanied with itching, but not with pain. This pushed along under the skin, and showed a sinuous red coil. It was cut down upon, but was not found, and assaefetida was administered in three-grain pills, three, 4 t. d. At the end of four days there was but a trace of the line. It has remained entirely well.

But two other cases have been reported in this country in persons who have not been in tropical lands. The method of propagation is not known. The reader thinks that generally too much stress is laid on the furuncle at the site of the parasite. In the countries where it abounds, they cut down on it and draw the filaria out. Care must be taken not to rupture the mature worm, as it is a female filled with young. Electricity has been used, and injections of carbolic acid. Iodide of potassium has been given internally.

AFTERNOON SESSION — 3.30 P. M.

Dr. J. N. HYDE, of Chicago, read a

NOTE RELATIVE TO THE CONIYLOMA FROM LESIONS INDUCED BY INGESTION OF SOME OF THE IODINE COMPOUNDS.

The patient, a girl of eighteen, who had never menstruated, injured her right elbow-joint when fourteen years old. Ankylosis had followed, and she had entered the hospital for the removal of a small spicule of necrosed bone that was protruding. There was no history of syphilis. She was given one grain of iodine and one grain of the iodide of potassium. Within three days she had "caught cold," but the drug

was continued. Very soon, tubercles appeared on the face, and extended well over the forehead and down to the neck. It looked something like a case of mycosis fungoides, the growths being covered with a yellowish discharge. The patient, all the time, remained in the best of general health, and it was decided to try the effect of omitting all medicines, when all trace of the lesions rapidly disappeared. As a matter of proof, the iodide was given again for a few days, and the lesions promptly returned.

In a second case there was an almost confluent eruption of the face and forearms, consisting of roundish or oval flattened tubercles, tending to become umbilicated. The patient was well three weeks after the discontinuance of the medicine. The following conclusions were arrived at:

(1) When iodide compounds, irrespective of the size of the dose, have been administered to well-nourished infants, children, and persons whose skins are in a condition usually found at these ages, a quasi-bullous rash may occasionally appear, whose elements differ from the blebs which sometimes form when the drug has been administered to older persons, syphilitic, cachectic, or in grave conditions of prostration.

(2) The interest attaching to the recognition of the value of the eruption is partly due to the fact that in the claims last named it may superimpose upon an eczematous or seborrhœic condition for which the iodine has been administered.

(3) The regions involved are almost exclusively the scalp, face, neck, upper chest, forearm and hand.

(4) The subjective symptoms are comparatively insignificant. The disproportion between the severity of the lesions and the conditions of the patient is of high diagnostic value.

(5) Involution commonly progresses rapidly after the discontinuance of the drug, and rarely there are left small atrophic patches.

Dr. Heitzmann would think it wiser to omit the term "vegetative" in the title. He had seen a case where a general eruption of blebs over the body had been at once relieved on the discontinuance of an iodide which the patient had been taking. He had seen tubercles similar to those described by the reader following the use of the bromide of potash. He would explain the action by the attempt of the drugs to leave the skin by way of the glands.

Dr. MORISON had seen somewhat similar eruptions follow the ingestion of small doses of the permanganate of potassium.

Dr. MORROW had seen similar cases, and reported last year a case where there were vegetative lesions following a bullous eruption, and which were so severe that several medical gentlemen would not believe it was caused by the drug. But they quickly disappeared when the drug was omitted. The peculiar localization of the eruption was of interest to him, and he was not ready to accept the view that the cause was the elimination of the drug by the glands, for the drug has not been found in the lesions, even when it has been given in very large doses.

Dr. STELWAGON reported a case that he had recently seen, where the lesions were small vesicles, soon becoming pustules, and then spreading in size. He became improved under simple treatment, but afterward died of cardiac disease.

Dr. ATKINSON reported a case where there had been a follicular eruption. Ulcerations took place,

but on withdrawing the iodide the recovery was rapid. He considered the eruption to be of nervous origin.

Dr. H. W. STELWAGON read a paper on

MOLLUSCUM CONTAGIOSUM; A PRELIMINARY REPORT.

English writers say the disease is contagious; the Germans and French take the opposite view; the Americans side with the Germans. The reader had seen thirty-two cases in four groups, containing, respectively, four, thirteen, three and twelve cases. All the cases in each group appeared in the same institution or the same family. Various attempts at inoculation were made, but without success; at least, no characteristic lesions were produced. He concluded:

(1) The disease generally is seen upon exposed parts, or parts that come in contact with the hands, such as the genitals.

(2) It occurs generally in children, and among the poorer classes.

(3) It is very common to find the affections in groups, or series.

(4) In admitting its contagious nature, it must be acknowledged that it possesses this quality to an extremely slight degree.

Dr. HYDE had been much interested in the history of twin sisters who had come to his clinic. On the first day one had some lesions of the molluscum, which, under treatment with the monochloride of mercury had disappeared at the second visit. But at this time the second sister had become affected, just as the first one had been before. There was such an absence of symptoms that he inoculated himself on the arm from a typical lesion on the face of the twin. On the third day there was a vesicular pustule. On the fourth day it formed a crust, and with that he inoculated two medical students, upon whom abortive lesions formed.

Dr. STELWAGON wished to state that only two or three inoculations out of a series of a dozen or more inoculations had taken. The effects were similar to those caused by the inoculation of the impetigo contagiosa pustules.

Dr. HYDE had been struck with the relative rarity of the cases.

Dr. MORROW, from his experience had supposed the growths came from direct inoculation. He thought there was a certain relation between molluscum contagiosum and warts, as Dr. Fox had intimated some years ago. He had seen a boy almost covered with typical lesions of the kind under discussion, in whom they had all disappeared in the course of a few months, though only a few of them were treated.

Dr. SHERVELL had been impressed with the clinical rarity of the disease during the last few years. He had seen one series of cases in an institution, where the indications were that it was contagious. Before seeing these cases he had not believed in the contagiousness of it, but was led to change his opinion at that time.

Dr. ROBINSON believed in the contagious character of the disease, though it was entirely upon theoretical grounds and the evidence of others.

Dr. FOX some time ago had made repeated inoculations on himself and others, but all results were negative. The only successful inoculation that he knows is the one related by Retzius. It generally occurs in

those who are in poor surroundings or in poor health, but had been seen in those who were in robust health. He had no doubt that the ordinary dry warts that are seen on children's hands are contagious.

DR. MORISON was of the opinion that it was a parasitic disease which may be carried from one to another.

DR. HEITZMANN called the attention of the society to an article by Neisser in the last number of the *Vierteiljahrsschrift für Dermatologie*, in which he positively claims that there are peculiar corpuscles which are the parasite.

DR. C. W. ALLEN, of New York, on invitation of the president, said that he had seen in the Baretta Museum of St. Louis Hospital in Paris, the past summer, a wax model of a typical lesion in the arm of a child, which had been produced by inoculation; and this to his mind would be positive proof of the contagiousness of the growth. The inoculation had been done under Fournier's direction.

DR. STELWAGON, in his cases, had never seen any connection between the warts and the tumors. The inoculations were made in the children who had the disease.

DR. G. H. FOX read a paper on

THE NON-IDENTITY OF LICHEN PLANUS AND LICHEN RUBER.

The reader reported five cases of true lichen ruber that he had seen, and which he considered a large number, considering the rarity of the disease.

From his study of these cases, the reader would believe in the essential difference of the two affections.

DR. A. R. ROBINSON read a paper on

THE QUESTION OF RELATIONSHIP BETWEEN LICHEN RUBER (HEBRA) AND LICHEN PLANUS (WILSON).

The reader compared at length the clinical symptoms, histology, prognosis, and results of treatment of the two affections, and showed that in none of their attributes did they appear alike. He reaches the following conclusions:

(1) Lichen planus and lichen ruber, in doubtful cases especially, are to be diagnosed not by the form of the lesion alone, but also by the whole symptoms and course of the eruption.

(2) Lesions resembling those of lichen ruber and lichen planus exist in other diseases.

(3) In the lesions described by Unna, he shows that his division is an incorrect one.

(4) The same is true of Boeck's cases.

(5) No cases have been reported that show absolutely, or even with probability, that lichen planus and lichen ruber are but two forms of the same disease.

(6) If such an identity of etiology exist, such cases would long ago have been reported, as lichen planus is a rather frequent disease.

(7) Finally, in the absence of proof by the transformation of the lesion, or difference in symptoms, source, prognosis, histology and effects of drugs, in the two forms of the eruption, we find no grounds for considering lichen planus and lichen ruber identical diseases.

DR. R. W. TAYLOR, of New York, read a paper on
LICHEN RUBER, AS OBSERVED IN AMERICA, AND
ITS DIFFERENTIATION FROM LICHEN PLANUS.

The confusion in the identity of the two diseases had arisen from the fact that a case of true lichen ruber was seen at the only time when it looks like lichen planus, and had been included in a series of the latter affection. During the past summer the writer had had an unusually good opportunity of studying a case of the true lichen ruber, and presented a detailed account of the symptoms and lesions, with a series of beautifully colored photographs, and presented a complete differential diagnosis between the two affections. He divided the course of the lesions into three stages: (a) isolation of the papules; (b) coalescence of the papules; (c) chronic infiltrated, pigmented and scaly stage. It is only for a short time, at the end of the first stage, when the papules become flattened, and have not extended over too great a surface of the body, that there should be any danger of the confounding of the two diseases. In the second stage a large portion of the surface of the body is involved, but it is from the formation of separate new papules, and not from the extension of those already formed. In the third stage there is a decided infiltration of the skin, the papular elements gradually disappear, and there is left a uniform brownish-red, slightly scaly superficial thickening of the skin, which is traversed by minute furrows. After resolution a diffuse brownish-red coloration is left, but is much less evident than in lichen planus. Aside from the local manifestations, the course of the two diseases are so entirely different that there should be no confusion between them.

DR. SHERWELL considered it the most important subject that had been brought before the Society for a long time. There seems to be a very general consensus of opinion among American dermatologists as to the difference of the forms. He believed he had seen about two per cent. of lichen, on going over his whole dermatological life. Basing his opinion entirely on clinical studies, he was sure of the non-identity of the diseases.

DR. BRONSON agreed that the pathological anatomy of the lesions was different, and yet if it had been similar that would be a trifling argument in the face of the mass of clinical evidence.

DR. BULKLEY thought there were cases of lichen simplex that Unna had mixed up with lichen ruber. We see these cases again and again. He was particularly impressed with the statement that in lichen planus sometimes patches would form and not progress for a long time. He had known such a patch on the back to persist for months, and then to extend.

DR. ATKINSON thoroughly agreed with the preceding speakers.

DR. HEITZMANN thought the trouble had arisen from the fact that all the cases of these affections were formerly called chronic eczemas.

DR. ROBINSON did not think that the histological examination was of importance, though it showed the difference in the two diseases. He would base his diagnosis upon the sum of all the facts entering into it. There has been shown no tendency for one disease to become changed into the other. The different behavior under treatment is also an important element.

DR. TAYLOR, in summing up the case, could only reiterate his statement as to his hearty belief in the difference between the diseases.

THURSDAY MORNING, SEPTEMBER 20, 9 A.M.

DR. C. HEITZMANN, of New York, read a paper on

KRAUROSIS OF THE VULVA (BREISKY).

He had been shown the case by Dr. Mundé. It was in a woman of thirty-five who complained of fearful itching in the vulva. It was found that Breisky, of Vienna, had seen nine cases, and had not been able to cure any of them. Dr. Weir described a similar case some years ago. There is in these cases a profuse muco-purulent vaginitis, with whitish thickened patches scattered over the mucous membrane. These may be a good deal raised, and feel like parchment. The important subjective symptom is the intense itching. Mental affections sometimes follow.

The reader considered it nothing more than a chronic eczema of the vulva, and found that the cases were curable. It might be mistaken for psoriasis, but that would not be confined to the mucous membrane so long. There was in two cases a uric acid diathesis, and in one oxaluria. The vaginitis seems to be secondary, for it ceases when the local trouble is relieved. The treatment consists in curetting the lesions, and if they cannot be easily reached in this way, nitric acid may be applied. A solution of cocaine may be used to dull the pain. Salicylic acid will remove thickened epidermis. In the case reported by Dr. Weir the final result was the formation of cancer.

DR. BRONSON had seen in a man a papillary growth that reminded him of the cases reported by Dr. Heitzmann. They were exceedingly persistent.

DR. SHERWELL referred to an article he had lately seen in the *Gazette des Hôpitaux*, where five cases of apparently a similar character were reported, though only one was in the vulva, the rest being in the oral cavity. The author prefers the name leucoplasia, rather than kraurosis. These were curetted, and relief was afforded. If left alone they take on an epitheliomatous formation. In one case this happened after forty years.

DR. GRAHAM asked if the itching presented the local lesion.

DR. HEITZMANN replied that it did not.

DR. HYDE had seen a case in a widow woman of forty, where there was present the intense itching, and also a marked atrophy of the labia minora.

DR. HEITZMANN was surprised that so few cases had been met with. The condition has nothing in common with leucoplasia of the tongue. Their etiology is utterly in the dark.

DR. R. W. TAYLOR read a paper on the

DERMATITIS TUBEROSA—THE SO-CALLED IODIC FORM.

Dermatitis is really the morbid change in every case of eruption following the use of the iodides. Therefore there is but one eruption, which may show itself in various ways. In the case reported the iodide was given in increasing doses up to eighty grains, *i. e.* d. The lesions were on the left side of the forehead and face, and the tubercles were sessile, without surrounding inflammation. From the surface pus escaped from cribriform openings. They decreased slowly, and left pigment patches. The sebaceous follicles were inflamed, and at first they looked like acne indurata. The term acne anthracoides is too fanciful, and far from being precise, for anthrax is a subcutaneous af-

fection. In the bullous form of eruption, the speaker thought the essential lesion was a dermatitis.

DR. HEITZMANN would ask the reader if he had formed any idea as to how the iodine preparations cause such troubles.

DR. TAYLOR thought that the trouble was angioneurotic; the action is carried back to the nervous system, and by that to the bloodvessels. He did not think there was any action on the glands at all.

DR. ROBINSON would object to the use of the term dermatitis, as it is applied to so many conditions, and means so little.

DR. HYDE agreed with Dr. Taylor in regard to the etiology of the affection. He called attention to the fact that iodic purpura always occurred in the lower extremities.

DR. MORROW had seen some cases of the iodic purpura on the upper extremities. These patients generally had syphilis. He agrees that it is within the sphere of the nervous system that we must look for the explanation of the cause of the eruption.

DR. ATKINSON believed that the action started in the follicles, although the absence of the iodine in the tests, would tend to prove that it is not done by the irritation caused during elimination.

DR. TAYLOR upheld the use of the term dermatitis whenever there was an inflammation of the skin, as giving an exact idea of what was taking place.

DR. L. D. BULKLEY, of New York, read a paper on

DERMATITIS PLANTARIS AND PALMARIS.

He had applied the terms advisedly, to signify an affection which consisted of a general exfoliation of the hands and feet, especially of the palmar and plantar surfaces, which was recurrent in its nature. He gave in some detail the history of three cases. In the first it had occurred many times, and the man could predict when an attack was about to occur by a peculiar burning and itching of the parts. Each attack lasted about a week, the nails being always attacked. Sometimes a slight rash appeared over the abdomen, but this was the only lesion outside the extremities. The second case was much like the first, though less severe, and the third, in a woman, was really but one attack which lasted for several months, and then resolved very slowly.

It was necessary to distinguish the first case from dermatitis exfoliativa, which could easily be done by the limited area of the invasion, and the clinical history.

It is probable that the cause of the disease must be sought in the nervous system. Treatment is both internal and external, the former directed to the nervous element. The first case was helped by the long-continued use of arsenic. Emollients aid in the recovery. In one of the cases a lotion of borax and glycerine in rose-water kept the skin soft and prevented scaling.

The officers for the ensuing year are: *President*, Dr. J. E. Graham, Toronto, Can.; *Vice-President*, Dr. S. Sherwell, Brooklyn, New York; *Secretary and Treasurer*, Dr. G. H. Tilden, Boston.

The following gentlemen were elected active members: Drs. George T. Jackson, New York; H. G. Klotz, New York; F. J. Shepherd, Montreal; Josef Zeissler, Chicago; William T. Corlett, Cleveland; J. S. Howe, Boston.

The next meeting will be held in Boston, Tuesday, September 17, 1889.

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ON THE EMPLOYMENT OF INHALATIONS IN
DISEASES OF THE BRONCHII AND OF THE
LUNGS.

THE discussion on the use of inhalations in pulmonary diseases before the British Medical Association, recently held in Glasgow, was one of considerable practical importance. Dr. Theodore Williams remarked that the discovery of the tubercle-bacillus had given a new impulsion to researches on inhalations, and distinguished five forms: (1) inhalations of gases (compressed or rarified air, oxygen, etc.); (2) warm, moist inhalations (vapors); (3) inhalations of pulverized liquids by the spray producer; (4) inhalations of dry vapors; (5) inhalations by means of respirators charged with divers medicinal substances.

The utility of gaseous inhalations is recognized by all who have ever tried them.

Dr. Williams had thoroughly tested, in cases of pulmonary phthisis, the warm, moist inhalations, and had found the results always disappointing. The spray does not probably penetrate farther than the larynx and trachea.

The inhalation of fumes produced by such cigarettes, papers, and powders as are recommended in asthma has always appeared to Dr. Williams inferior in its effects to the administration of the same substances by mouth. He has also tried the respirators charged with medicinal substances. He has not found them productive of much benefit in phthisis; besides, they impede respiration.

In acute bronchitis and in croup, the patient is sometimes benefited by inhalations of warm water, but there is not much reliance to be placed on these alone. In whooping-cough, the violence of the attacks may be diminished by inhalations of phenic acid, which, however, have only a palliative effect, the duration of the disease not being modified thereby. For the cough of phthisis, no inhalation is worth as much as the internal employment of ammoniacal potions or narcotics, with derivation by irritant liniments as an auxiliary.

Dr. Williams stated that he had made trials in

phthisis of sprays of iodine and of turpentine. When the iodine spray was used, no trace of iodine was found in the urine; nor, on the other hand, was the characteristic odor of turpentine detected in the urine when turpentine inhalations were used. Dr. Williams sums up his experience by the observation that inhalations are of little or no utility, except in diseases of the larynx and bronchi.

Dr. Andrew Stuart, of Edinburgh, said that his experience with inhalations had led him to regard them as valuable auxiliaries in the treatment of pulmonary affections, only they should be used long and perseveringly. He had found acupuncture by a sort of spur-like apparatus with sharp teeth, followed by frictions of croton oil over the chest, of use. Dr. Lindsay, of Belfast, thought that inhalations of vapor of water were often useful in acute bronchitis, but when the patient employs them very assiduously he becomes extremely sensitive to changes of temperature, and convalescence is slow and accompanied by relapses. In phthisis the results of inhalations are absolutely nil; no solution fit to be inhaled can destroy the bacillus or modify the individual receptivity, without which the bacillus is nothing. The best treatment of phthisis still consists in improving the general condition by hygienic measures and an appropriate diet.

Dr. Greland was convinced of the efficacy of emanations from certain resinous trees, and had seen good results from breathing the air of pine forests in diseases of the bronchi and lungs. In Birmamy and Valachia it is the custom to place consumptive patients in petroleum wells, where they sojourn for a time, and this mode of treatment seems to have been attended with some success.

Dr. Denison, of Colorado, spoke of the advantages in pulmonary phthisis of breathing a cool, dry air, such as prevails in Colorado, and does not favor inhalations of steam or atomized liquids. The results of the dry air treatment in phthisis had been remarkably favorable.

SHORTHAND AS AN AID TO SCIENTIFIC
STUDY.

In looking through a somewhat extended list of announcements of a variety of educational institutions, it is noticeable that in none of them is the study and practice of shorthand in any way alluded to. As a preliminary to a course of classical study in any direction, or as a convenience in any branch of investigation, the practical character of this accomplishment is so evident, its utility as a time-saver is so apparent, that it is truly a matter of surprise that some degree of stress is not laid upon it as a preparation for the pursuit of the higher branches of study. As a useful art, shorthand might almost be compared to the hypothetical "universal solvent" in that it is applicable to any and all the paths of learning which a student can possibly follow.

In our education there is hardly another element of

assistance which can be compared to that of taking immediate and correct notes of any interesting matter which may be passing at the time. In one of the recent meetings of the Institute of Technology one of the gentlemen in addressing the assembly was suddenly stricken with apoplexy, and fell dead before his audience. The fact that one of his listeners was at the time taking stenographic notes of his address enabled the institute to preserve a most grateful record of the last thoughts and utterances of one of the most devoted friends which that noble institution has ever had.

The application of shorthand to the study of medicine is no less important, and should be considered a most valuable adjunct to other measures preparatory to such a course of training. There is also a practical side to this question which as a matter of fact has recently been demonstrated. There is a growing call for medical stenography, which is even now considerably in demand for reporting the proceedings of various scientific societies, and which will surely become more outspoken as the time goes on. Thus we have as a partial inducement for the cultivation of this useful art the fact that a competent medical shorthandwriter, can most probably earn a comfortable livelihood at this time, and will doubtless find increased occupation with the knowledge of the fact that he is a master of the art. Many an impecunious student would doubtless gladly avail himself of this means of income, and would at the same time add materially to the interest in the discussion of scientific subjects, by furnishing reliable and trustworthy reports of exactly what was said and done.

This subject may well receive more attention in the future than it has in the past, as a means not only of assistance to the individual student, for the correct reporting of lectures, etc.; but also as a means of giving the body medical a faithful and accurate report of the transactions which takes place in its meetings, and which must reach the bulk of the profession only through the imperfect medium of print. The late Medical Congress could have furnished employment to a larger number of medical stenographers had their services been offered.

HUMAN BEINGS AS SUBJECTS OF EXPERIMENTATION.

DR. J. A. ELLEGOOD in a recent article in the *Medical and Surgical Reporter* on the "Germ Theory of Typhoid Fever," proposes in the interest of humanity that "human beings shall be made the subjects of experiment," with a view to ascertaining the causes and best methods of treating infectious diseases, and suggests that "in order to obtain human subjects for experiment, criminals sentenced to capital punishment or for long terms of imprisonment may have their sentences commuted, and that instead of suffering the usual penalty of their crimes, they may become the subjects of experiment for a specified time."

It is interesting to note in connection with this proposition, which modern civilization has evidently not yet progressed far enough seriously to entertain, however much scientific progress might be promoted by such utilization of the criminal classes, that Bulwer in his posthumous romance (or satire) "The Coming Race," pictures a similar custom, whereby inferior and degraded specimens of humanity were by the advanced races sacrificed in the interests of science, as existing among the Vril-ya, in the Utopia which he so felicitously imagines and paints.

MEDICAL NOTES.

— During the past few days the yellow fever at the South has abated materially, and a more cheerful and hopeful feeling has succeeded to the panic of the previous week. The disease seems practically arrested outside of Florida, and only an occasional new focus shows itself in that State, as for instance, at Callahan, September 30th. At Jacksonville, the suffering from privation is still considerable, and the aggregate of new cases daily is large, though not so great as heretofore. On Sunday, the 30th ult., there were 79 new cases reported, 13 of which were whites. Six deaths. Total to that date, 2626. Total deaths, 255.

— The International Congress for Dermatology and Syphilis will meet in Paris at the time of the World's Exposition in 1889, for a week, in the first part of August. The meetings will be held in the large hall of the new museum of the Hospital St. Louis, and will be under the honorary presidency of M. Ricord, and the presidency of Hardy.

— Prince Ludwig, of Bavaria, has just been made "Approbirter Arzt" through the credit of examinations passed in 1869.

— Sir Astley Cooper's ideal of a physician's wife: "She should be like roast-lamb: tender and sweet, and nicely dressed, with plenty of fixings, but with no sauce."

— The yellow fever epidemic in the South has served as a stimulus to non-medical inventors, and some of these have devoted several days of their time to inventing a remedy. Mr. Wiggin, of Canada, is prepared to maintain that the disease is due solely to meteorological conditions or to astronomical conditions, we forget which. Mr. Wiggin, unlike the Pharisees of old, can discern the signs of the times, though he has generally, we believe, failed to discern the face of the sky.

We also learn from the daily press, under date of September 16th, that "since the 15th of this month, Inventor Edison, who is unremittingly engaged in making experiments, has been devoting his attention to the microbe and an efficacious method of its extermination. The result of these experiments has led him to think that he has discovered a remedy for the extermination or effectual check of the yellow fever. The experiments were made with well-known sub-

stances, whose cheapness is the chief claim in recommending them for disinfectants on a wholesale scale. They are gasoline, whose commercial price is about one cent a pound, exhigoline (rhigoline?) which can be bought for sixteen cents, and a ten per cent. solution of caustic soda, made from forty-eight per cent. of the crude material. The cost of the solution is about one-fourth of a cent per pound.

"Said Mr. Edison: 'My experiments have been purely sentimental, and, from the results obtained, I feel confident that I have at last found a means of stamping out the fever germs (italics ours). From my observations, I am convinced that the fever germs must be either of two things—animal organization or fungous growth. It is not due to gases, or the whole of a district would be affected at once. I believe that the fever microbe is parasitic, as it travels slowly along the ground, and is known to have been stopped in some cases by street-paving.'"

Mr. Edison goes on to say that his "experiments with microbes have been encouragingly successful, and not having any of the yellow fever germs to work upon, we can only draw our conclusions by analogy."

His "sentimental experiments" give him a considerable degree of confidence, considering that he has really never had any opportunity to experiment with the disease in question at all. Meantime, as a real germicide, tried not sentimentally, but actually, "what is the matter with" corrosive sublimate?

—From the *Wiener Medical Wochenschrift* we learn that cremation has been received with much favor in Italy. There are already thirty-two associations and committees for its encouragement, and new crematories are to be built this year in Turin, Verona, Bologna, Pavia and San Remo, and in Naples, though the superstitions of the people have led to much opposition. Since 1876 there have been 952 cremations, of which number 518 were in Milan alone, where a second crematory has been built and placed at one end of the public cemetery.

—The dermatologists of Germany will unite in a society, the invitations to membership being sent out by Professors Weisser, of Breslau, and Pick, of Prague.

NEW YORK.

—The new St. Joseph's Hospital at Yonkers, the corner-stone of which was recently laid by Archbishop Corrigan, is to be in the early Gothic style of architecture, and will have a frontage of 150 feet, with a centre building 53 feet wide, flanked by wings 31 feet wide and 93 feet deep. The service of the hospital will include an ambulance corps.

—For three months past there have been cases of small-pox in Buffalo, and of late there has been a considerable increase in their number. Many cases have apparently been concealed, particularly in the Polish district of the city, and in this region no less than a dozen cases were recently discovered in a single tenement-house.

—The thirteenth annual commencement of the Training School for Nurses of Charity Maternity, and Infant's Hospitals on Blackwell's and Randall's Islands was held in the amphitheatre at Charity Hospital September 26th. There were twenty two graduates, and addresses were made by the Rev. John W. Brown, D.D., Rector of St. Thomas's Church, Dr. Henry Goldthwaite, visiting surgeon to Charity Hospital, and others.

DISCERNANT.

DIPHTHERIA IN THE INSANE HOSPITAL.

UNFORTUNATELY diphtheria was introduced into the Maine State Insane Hospital in the latter part of June, and, as is often characteristic of that disease, it shows a tendency to reappear again and again after it is hoped that it has been stamped out. The introduction of the infection seems to have been as follows: A young man whose home is in Vassalboro', returned to that place from New York, June 15th. Two weeks afterward he was attacked with a rather severe throat disease from which he suffered four days. June 17th to the 20th. He had no medical attendance, but kept his bed two of the days. On the 21st he went to the Hospital as an attendant. On the 24th or 25th his brother, who had been with him at home, was attacked with diphtheria and was attended by a physician. The first cases of diphtheria at the Hospital occurred a few days after the arrival of this nurse from Vassalboro', and the most of them, if not all, had come in contact with him. At the time of the present writing there have been eighteen cases among the patients and attendants, including two questionable cases. Five of these have proved fatal. One of the fatal cases occurred in a maniacal patient. Others have been complicated with other diseases which have had as much to do with the fatal issue as the diphtheric attack. The later cases have been mild and no recent deaths have occurred. Very careful measures of isolation and disinfection are in operation, and it is hoped by the management that the outbreak may soon be at an end.—*Sanitary Inspector*, (August number).

A SYSTEM OF FREE NURSING AS ORGANIZED IN PHILADELPHIA.

DR. JOSEPH PRICE, of Philadelphia, published an article on the above subject in the *Journal of the American Medical Association*, from which the following is extracted:

The Visiting Nurse Society, of Philadelphia, was organized a little over two years ago by a few charitable ladies of this city for the purpose, as their charter reads, "of furnishing visiting nurses to those unable to secure skilled attendance in time of illness, to teach cleanliness and the proper care of the sick." It is supported by voluntary contributions and such small amounts as the patients may be able to pay, and its last report shows a remarkable amount of practical benevolence secured by the outlay of a very small sum of money. The society in the beginning employed a trained nurse with one or two assistants, who were also pupils. Additional nurses were employed as necessity arose until the staff now consists of seven

nurses and assistants and one maternity nurse whose work is confined to that specialty. Special nurses are provided for contagious diseases as they may be required, the regular staff not coming in contact with such cases.

"In cases demanding immediate operation these nurses make all preparations at the shortest possible notice; namely, thorough cleansing of the room and person of the patient, often supplying fresh body and bed linen, one or more nurses to assist in the operation, and one to care for the patient during the subsequent treatment. I have known these nurses to go in an attic or cellar in the heart of the slums of the city, the rooms reeking with filth and overrun with vermin. The patients, fit inhabitants of their homes, destitute of the bare necessities of life, not having even a receptacle in which to boil water, and often dependent on their neighbors for food and fuel. In a few hours the nurses have cleaned the room, supplied the necessary furniture and utensils and prepared the patient for an abdominal section. With such an organization

at his command the physician or surgeon has no reason to fear undertaking any case, surgical or medical, at the homes of even the poorest of patients. In the clinic of the female department of the Philadelphia Dispensary, for years I did not attempt to do any of the abdominal work that constantly presented itself because of the lack of such a free system of trained nurses.

"Since the organization of this Society we have done over ninety abdominal sections in the alleys and courts of this city, with only one death. And these were not selected cases, but were done because they were imperative. In addition, many general operations of more or less severity, but requiring skilled nursing, have been performed, and in every case the nurses of this Society have proved themselves equal to the occasion. During the past year the Society has cared for 90 surgical cases, out of a general list of 369, necessitating nearly 6000 visits. So far during this year they have attended nearly 200 cases, of which 50 per cent. were surgical."

REPORTED MORTALITY FOR THE WEEK ENDING SEPTEMBER 22, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	682	315	28.05	10.95	13.35	2.55	3.75
Philadelphia	1,016,758	329	127	19.80	—	8.10	6.90	2.10
Brooklyn	751,432	376	204	32.40	10.53	18.63	1.89	4.59
Chicago	700,000	273	135	29.88	9.12	15.48	2.88	6.84
St. Louis	449,160	177	75	17.36	7.84	—	1.12	6.72
Baltimore	457,155	147	70	29.40	14.21	13.60	2.72	1.36
Boston	407,024	205	94	23.52	—	15.68	2.94	4.41
Cincinnati	325,000	106	—	9.43	—	3.76	—	3.84
New Orleans	248,000	120	36	29.05	5.25	2.80	1.05	4.90
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	103	45	28.13	18.43	12.68	3.88	2.81
Pittsburgh	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	19	9	42.08	15.78	21.04	5.26	—
Charleston	60,145	—	—	—	—	—	—	—
Portland	40,000	20	5	25.00	15.00	10.00	—	15.00
Worcester	76,928	41	21	39.04	31.16	—	2.44	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	35	21	31.46	2.86	20.00	5.72	—
Fall River	61,203	30	16	29.99	6.66	23.33	3.33	3.33
Lynn	51,467	13	—	7.69	23.07	7.69	—	—
Lawrence	40,175	13	8	23.07	—	23.07	—	—
Springfield	39,952	12	5	11.65	8.33	—	16.66	—
New Bedford	36,208	9	—	—	—	18.40	—	—
Somerville	33,397	15	—	46.66	—	26.66	13.33	6.66
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	10	6	10.00	10.00	—	10.00	—
Chelsea	27,552	9	6	11.11	11.11	11.11	—	—
Haverhill	24,979	11	6	27.27	18.18	27.27	—	—
Taunton	24,796	12	2	33.33	8.33	8.33	8.33	—
Brookton	24,754	11	3	27.27	18.18	—	9.09	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	8	3	37.50	12.50	25.00	12.50	—
Malden	18,932	6	2	—	—	—	—	—
Fitchburg	17,534	6	2	—	16.66	16.66	—	—
Waltham	16,651	6	4	28.56	28.56	28.56	—	—
Newburyport	13,839	7	1	50.00	25.00	—	—	—
Quincy	13,336	4	2	—	—	—	—	—

Deaths reported 2,829; under five years of age 1,235; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 725, consumption 243, acute lung diseases 175, diarrhœal diseases 356, diphtheria and croup 119, typhoid fever 87, whooping-cough 50, malarial fever 43, scarlet fever 28, measles 14, cerebro-spinal meningitis 10, puerperal fever eight, erysipelas three, small-pox one. From whooping-cough, New York 21, Brooklyn 10, Philadelphia and Washington six each, New Orleans three, Chicago, St. Louis, Baltimore and Cambridge two each. From malarial fevers, St. Louis 14, Brooklyn 11, New York and New

Orleans seven each, Baltimore two, Philadelphia and Nashville one each. From scarlet fever, New York 15, Brooklyn and Chicago four each, Taunton two, Philadelphia, Nashville and Brookton one each. From measles, New York 11, Chicago two, New York, Philadelphia, Chicago, Washington, Nashville, Worcester, Springfield and Brookton one each. From puerperal fever, Chicago four, St. Louis, Boston, New Orleans and Springfield one each. From erysipelas, New York, Brooklyn and Washington one each. From small-pox, Springfield one.

The meteorological record for the week ending September 15, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, Sept. 15, 1888.	Barom- eter.	Thermometer.		Relative Humidity.		Direction of Wind.		Velocity of Wind.		State of Weather. ¹		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Sunday, . . . 9	29.98	70.0	74.0	68.0	90.0	83.0	86.0	S. W.	S. W.	12	7	O.	0.00
Monday, . . 10	29.94	68.0	80.0	65.0	93.0	55.0	74.0	W.	W.	9	5	O.	0.00
Tuesday, . 11	30.46	62.0	68.0	58.0	68.0	79.0	74.0	N.	S.	6	5	O.	0.00
Wednes., 12	29.86	63.0	66.0	58.0	80.0	82.0	91.0	N.	S.	10	7	R.	10.00
Thursday, 13	29.94	62.0	72.0	57.0	70.0	55.0	63.0	W.	W.	10	13	C.	.51
Friday, . . 14	30.14	58.0	71.0	46.0	60.0	56.0	58.0	W.	W.	21	6	C.	.05
Saturday, 15	30.31	60.0	63.0	51.0	67.0	74.0	70.0	N. W.	S.	5	12	C.	.00
Mean, the Week.													

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT. U. S. A., FROM SEPTEMBER 22, 1888, TO SEPTEMBER 28, 1888.

WHITE, ROBERT H., major and surgeon U. S. A. Is granted leave of absence for one month, with permission to apply for an extension of one month. Paragraph 7, S. O. 139, Headquarters Division of the Atlantic, Governor's Island, New York City, September 22, 1888.

WOODRUFF, EZRA, captain and assistant surgeon. Is granted leave of absence for six months on surgeon's certificate of disability, with permission to leave the Division of the Missouri, by direction of the acting Secretary of War. Paragraph 5, S. O. 224, A. G. O., September 25, 1888.

STERNBERG, GEORGE M., major and surgeon U. S. A. Will proceed to Decatur, Ala., and to such other points in the infected districts of the Southern States as he may deem necessary, to continue his scientific investigations of yellow fever, by direction of the President. Paragraph 8, S. O. 224, A. G. O., Washington, September 26, 1888.

MATTHEWS, WASHINGTON, captain and assistant surgeon. Is detailed as a member of the Army Medical Examining Board, appointed to meet in New York City, October 1, 1888, by S. O. No. 203, September 1, 1888, from this office, *vice* GEORGE M. STERNBERG, major and surgeon, hereby relieved from his detail as a member of the Board. Paragraph 5, S. O. 224, A. G. O., Washington, September 26, 1888.

HOFF, J. VAN R., captain and assistant surgeon. Upon the recommendation of DANIEL WEISER, captain and assistant surgeon, senior medical officer camp of instruction of the 5th Cavalry, is assigned in charge of active operations of the Hospital Corps in that camp. Paragraph 2, S. O. 121, Headquarters Department of the Missouri, Fort Leavenworth, Kansas, September 22, 1888.

WILSON, GEORGE F., captain and assistant surgeon. Is granted leave of absence to include May 3, 1889, by direction of the acting Secretary of War. Paragraph 14, S. O. 222, A. G. O., September 25, 1888.

WILSON, GEORGE F., captain and assistant surgeon. The resignation has been accepted by the President to take effect May 31, 1889. Paragraph 15, S. O. 223, A. G. O., September 25, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING SEPTEMBER 29, 1888.

HUTCHINSON, ADRIAN, medical inspector. Ordered for examination preliminary to promotion to medical director.

BATES, NEWTON L., medical inspector. Ordered for examination preliminary to promotion to medical director.

COOKE, GEORGE H., surgeon. Ordered for examination preliminary to promotion to medical inspector.

BRADLEY, MICHAEL, medical inspector. Ordered as member of Naval Examining Board.

WELLS, HENRY M., medical inspector. Relieved from duty as member of Naval Examining Board.

SIMONS, MANLY H., surgeon. Ordered to Widow's Island Naval Hospital.

HEFFENGER, A. C., passed assistant surgeon. Detached from Naval Hospital, Widow's Island, and wait orders.

SOCIETY NOTICES.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.—THE SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE will meet at 19 Boylston Place on Wednesday, October 10th, at 7.45 o'clock. Papers: Dr. F. M. Stuart "Syphilis or Tuberculosis?" Dr. Douglas Graham, (Subject to be announced). Dr. Henry I. Bowditch, "The Need of a National Board of Health." Messrs. Leach & Green will exhibit a number of new instruments.

ALBERT N. BLODGETT, M.D., Secretary.
A. L. MASON, M.D., Chairman.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held Monday, October 8th, at the Medical Library, 15 Boylston Place. Reader: Dr. E. G. Cutler; Subject: "Fecal Accumulation." Dr. M. H. Richardson will report "A Case of Ulcerative Perforation of the Transverse Colon; Laparotomy; Death at the End of Six Days."

F. B. HARRINGTON, M.D., Secretary.

DEATH.

Died in Medford Mass., October 1, 1888, William Jerome Klinghamer, M.D., M.M.S.S., of Roxbury, aged thirty-one years eight months.

BOOKS AND PAMPHLETS RECEIVED.

Surgery as a Science and an Art. By Geo. E. Frothingham, M.D., Ann Arbor, Mich. Reprint. 1888.

Essays on Hysteria, Brain Tumor, and some other Cases of Nervous Disease. By Mary Putnam Jacobi, M.D. New York and London: G. P. Putnam's Sons. 1888.

Transactions of the Medical Society of the State of Pennsylvania at its Thirty-Ninth Annual Session, held at Philadelphia, June, 1888. Vol. xix. Published by the Society.

A Text-Book of Human Physiology. By Austin Flint, M.D., LL.D., Professor of Physiology and Physiological Anatomy in Bellevue Hospital Medical College, New York. etc. With 316 figures in the text and two plates. Fourth edition, entirely rewritten. New York: D. Appleton & Co. 1888.

A Manual of General Pathology; designed as an Introduction to the Practice of Medicine. By Joseph Frank Payor, M.D., Oxon., F.R.C.P., late Fellow of Magdalen College, Oxford, etc. With 150 illustrations. Philadelphia: Lea Brothers & Co. 1888.

A Text-Book of Pharmacology, Therapeutics and Materia Medica. By T. Lauder Brunton, M.D., D.Sc., F.R.S., Fellow of the Royal College of Physicians, etc. Adapted to the United States Pharmacopoeia, by Francis H. Williams, M.D., Boston, Mass. Third edition. Philadelphia: Lea Brothers & Co. 1888.

Thirty-Third Annual Report upon the Births, Marriages and Deaths in the City of Providence, for the year 1887.

The Morbid Anatomy of Congenital Talipes Equino-Varus. By J. B. Bissell, M.D., Instructor in Orthopedic Surgery in the New York Polytechnic; Attending Surgeon Bellevue Hospital, Out-Door Poor Department. Reprint. Philadelphia: J. B. Lippincott Company. 1888.

Electricity *vs.* Tait; or, the Use of Electricity in Inflammation as found in Gynecology. By George F. Hulbert, M.D., late Superintendent of Female Hospital, St. Louis. Reprint. 1888.

Original Articles.

THE COMPARATIVE MERITS OF TRACHEOTOMY AND INTUBATION IN THE TREATMENT OF CROUP.¹

BY GEORGE W. GAY, M.D.,
Surgeon to Boston City Hospital.

DR. JOSEPH O'DWYER'S method of intubating the larynx for croup, which has engaged the attention of the profession for the past few years, is slowly but surely crystalizing into its proper place as an important adjuvant to tracheotomy. The novelty and boldness of the method are so striking, that many surgeons whose experience had made them familiar with the old operation hesitated, and very properly hesitated, to accept the new one, until careful and repeated trials had demonstrated its value to a reasonable extent. That stage in its career has now been reached. There can be no doubt that it relieves dyspnea; that it saves life; that it is a reasonably safe operation to do; and that in the majority of instances, it is more easily performed than tracheotomy. Hundreds of cases of intubation have now been put upon record, and the results are fairly satisfactory. The immediate relief to the dyspnea may not, in the severe cases be as complete, as it is after the old operation, yet it is usually sufficient for all practical purposes. Intubation has met with opposition, but in spite of its dangers and inconveniences, from which no method of treating these affections is free, its advantages are gradually forcing themselves upon the profession, as experience becomes more extensive. The operation calls for much patience and perseverance in the after-treatment, more especially in the feeding of the child, and for this reason, if for no other, the surgeon should hesitate to pass a final opinion upon its merits, until he has seen a goodly number of cases. It will be the object of this brief paper to set before you, as clearly as I am able, the advantages and disadvantages of the two methods of relieving the dyspnea arising from acute membranous laryngitis.

In considering this subject the first point to engage our attention is the comparative results of the different modes of treatment. Which operation saves the more lives? All other questions are secondary to this one. If it appears from experience, that intubation saves as many, or about as many patients, as tracheotomy, then, whatever may be its dangers or its disadvantages, it justly claims a careful and thorough trial at the hands of all, who are called upon to treat this most serious affection.

Statistics are proverbially unsatisfactory, and at times they are positively misleading; yet in trying to decide the question at issue more or less dependence must necessarily be placed upon them. Agnew, Lovett and Munroe, Mastin, Stern, and others have given us the results of many thousands of cases of tracheotomy, and while the rate of recovery varies greatly in the different groups, yet a fair average may be put at about twenty-eight per cent. One of the latest, as well as the largest collection of statistics of this operation was very carefully made last year (1887) by Drs. R. W. Lovett, and John C. Munroe,² formerly house-surgeons at the Boston City Hospital. They collated

nearly 22,000 cases from every available source, taking especial care to avoid duplication. As a rule they rejected all groups of cases under five, and mostly those under ten, "for the reason," as they say, "that recoveries predominate enormously in the very small groups." "It was considered that to count such groups would be misleading, and they were all rejected, whether favorable or not, because they were not considered representative." Twenty-eight per cent. of these cases resulted in recovery. The percentage of recoveries in Agnew's³ cases was 26%, as was also that in Montt's collection. Dr. Wm. M. Masten has gathered 860 operations from American sources. Of these 195 were saved (22%). The following American statistics are not included in Masten's tables. H. Z. Gill,⁴ reports 151 tracheotomies performed in Illinois, with 38 recoveries (25%). In over 100 tracheotomies Dr. John H. Ripley, of New York, saved 33%. Dr. C. G. Jennings, of Detroit, has had 18 successful cases in 37 operations. Dr. C. T. Parkes,⁵ has had 18 recoveries in 31 cases. My own cases of tracheotomy for croup amount to 103. Of these 35 recovered, (33%).

Previous to January, 1887, which was about the time of the introduction of intubation into our city, 327 tracheotomies had been performed at the Boston City Hospital.⁶ Most of these cases had occurred since 1880. 95 patients recovered, making the rate 29%. Since intubation has come into vogue in that institution, 57 patients have been tracheotomized, but only 7 have recovered. This high death-rate is due to the fact, that as a rule, only the severest cases, or those in which the new operation failed to give relief, were subjected to the old method. Of these 57 patients 27 were under 3 years of age; 25 died.

It is a well-known fact that children suffering from croup are seldom sent to a hospital, until all measures, other than surgical have been fairly tried. The hospital being the last resort, the patients are often in a most deplorable condition upon their arrival, and are very unpromising subjects to undergo any sort of treatment. It has always been the rule in the City Hospital to insert a tube, or at least to make the attempt, in every instance however desperate the condition of the patient might be. Such being the fact the results of the operation as given above are reasonably satisfactory.

Dr. O'Dwyer thinks that the published records of the results of tracheotomy are too highly colored; that the operation is not as successful as the literature upon the subject would lead one to suppose. He says "that, with rare exceptions, only the few operators who have good results publish their cases, which is a mere bagatelle compared with the whole number operated on."⁷ If this be true in relation to tracheotomy, it is difficult to understand why the same statement may not be made in regard to intubation. Both operations are resorted to for the same affection, oftentimes under similar conditions and by the same operators, and, so far as experience has taught us, the results of intubation are not so uniformly successful as to preclude the possibility of silence on the part of timid or sensitive practitioners.

From careful inquiries, and from my personal

¹Read before the American Surgical Association, Washington, D.C., September 20, 1887.

²American Journal Medical Sciences, July, 1887.

³Max. J. Stern, M.D., Medical Register, November 12, 1887.

⁴Annals of Surgery, April, 1881.

⁵American Journal, November, 1888.

⁶Lovett and Munroe, op. cit.

⁷Medical Record, Oct. 29, 1887.

knowledge of the matter, I feel justified in stating that from one-fourth to one-third of the tracheotomized patients in Boston and vicinity recover. Applying this statement to the subject at large, I think that reliable statistics will warrant us in accepting it as a fair conclusion of this part of our inquiry.

Such being the record of tracheotomy, what is the verdict of about three years' experience with intubation? Dr. O'Dwyer,⁸ whose skill in inventing, and whose perseverance in developing and perfecting the operation are worthy of all praise, has performed it 205 times. Forty-seven patients got well. It is but fair to state that 65 of these operations were done during the experimental stage of the method with various kinds of tubes, and upon foundlings, who were in a very unfavorable condition to withstand the disease. Omitting these cases, and his record stands thus: operations, 140; recoveries, 38 (27%). Dr. Dillon Brown writes me that he has performed the operation 190 times, and has had 51 recoveries (26%). He operates late, when the symptoms are severe, and only after a thorough trial of other measures has been made. Dr. F. E. Waxham⁹ has operated upon 150 patients, 41 of whom recovered (27%). He has collected 1,072 cases of intubation, showing a rate of recovery of 27%. Dr. Frank Huber¹⁰ has intubed 94 patients; 37 were saved (39%).

Dr. Stern¹¹ has collected 953 cases, of which 252 (26%) recovered. Dr. E. Fletcher Ingals¹² has brought together 514 cases, most of which had never been published; 134 were successful (26%). Intubation was first done at the Boston City Hospital in December, 1886. With varying results, it has grown in favor, and is now the accepted mode of treatment for the majority of cases of croup. It has been performed in that institution 107 times for this affection; 26 patients recovered (24%). The ages ranged from seven months to fourteen years. The youngest, who recovered, was nineteen months old; she wore the tube more or less for sixteen days. The oldest was ten years, but, as she wore the tube only one day, the case must be considered a light one. Another patient, aged twelve years, was relieved for a short time by the laryngeal operation, but tracheotomy was finally necessitated to ease the dyspnea. She died in a week from bronchial croup and septicæmia. In ten instances both operations were performed; all were fatal. They were desperate cases, accompanied with a good deal of exudation and sepsis.

The ages of 92 cases of intubation at the City Hospital are as follows:

	Number.	Recovered.	Per cent.
Under one year,	1	0	..
1 to 2 years	12	1	8
2 to 3 "	13	3	23
3 to 5 "	35	10	28
5 to 7 "	20	8	40
7 to 14 "	11	4	36
Total Number 92, with 26 Recoveries.			

In 13 cases the age was not given, but the patients were all young; they were in the last stages of the disease when admitted, and they all died. It will be noticed that the ratio of recoveries gradually increased with the age of the child up to seven or eight years, when it began to diminish. Such was the fact in

1,600 cases of tracheotomy collected by Ivett and Monroe¹³ from Cohen, Masten, and others. From 20% in children under two, the percentage ran up to 40% at eight years of age. A similar result obtains in the 327 tracheotomies at the City Hospital.

The results of intubation in the experience of different operators presents as great a variation as those in tracheotomy. While O'Dwyer, Brown and Waxham save about 1 in 4, Huber and Montgomery¹⁴ save 1 in 2; O'Shea and Van Fleet save 1 in 3, Northrup and Denhard 1 in 5, Jennings 1 in 10, Cleham 1 in 15, and A. B. Strong 1 in 31.

If the statistics of either operation prove anything, it is that the type of the disease determines to a great degree the result of treatment. The light cases will get well, and the worst cases will die after either operation.

It is claimed that more patients under three years of age recover after intubation than after tracheotomy. Waxham gives 52 cases, with 13 recoveries (25%); Huber¹⁵ 49 cases, of which 17 were successful (34%). In Dr. O'Dwyer's 100 cases in private practice, 35 were under three, and 5 recovered (14%). Stern has analyzed 519 cases of intubation under the age of one-half years of age, and finds that 236 recovered. Comparing these results with 1,300 tracheotomies reported by Bourdillat, he finds that intubation gives more recoveries under four and a half years, after which period the old operations appear to be more successful.

Twenty-nine of the 107 City Hospital cases of intubation were under three years of age. Of this number, 4 recovered (13%)—an experience which corresponds very closely with O'Dwyer's. Its a singular fact that in 83 tracheotomies under three performed in this institution, the ratio of recovery was nearly the same; namely, 12%, there being 3 successful terminations. Masten reports 32 tracheotomies under three years, with 5 recoveries (16%). While the weight of evidence at present tends to substantiate the claim of the superiority of intubation in young children, further experience is desirable before the question can be considered as definitely settled.

To recapitulate: Dr. O'Dwyer with modesty and scientific candor worthy of emulation gives us his experience with the new operation, (work that he had given us his results with the old one) and wisely awaits the verdict, which time and further trial will surely render. Waxham thinks that more young children, and as many older ones recover after the new method. Stern reports the percentage of success as about the same from both operations—namely, 26%. Sajons¹⁶ thinks that the old method is more successful. "Skilled tracheotomy will, believe, save more cases than intubation, but the operators seem to be few who can obtain the best results." "I think tracheotomy will save every case that intubation can, and a great many more."¹⁷

Three hundred and twenty-seven cases of tracheotomy, and one hundred and seven cases of intubation performed at the Boston City Hospital show but a small difference in the results, (five per cent.). So far, the old method has the larger ratio of success, but the number of intubations is not yet large enough to

⁸ Correspondence.

⁹ Intubation of the Larynx, p. 105.

¹⁰ Correspondence.

¹¹ Op. cit.

¹² N. Y. Medical Journal, July 2 and 9, 1887.

¹³ Op. cit.

¹⁴ Stern, op. cit.

¹⁵ Correspondence.

¹⁶ New York Med. Journ., July 23, 1887.

¹⁷ C. G. Jennings. Trans. Arch. Med. Soc., 37.

initely determine the relative value of the two operations in saving life. I trust that I may be pardoned for quoting the following remarks from one of Dr. O'Dwyer's letters in relation to this matter: "From a large number of cases of croup treated at the Boston City Hospital, it certainly affords the best opportunity for the study of this disease to be found anywhere in this country. When you shall have accumulated the same number of intubations, that you have of tracheotomies, it will settle the question of the comparative methods of the two operations in saving life, better than thousands of cases collected from various sources."

It may appear to some that sufficient evidence has not yet been accumulated to definitely settle the point in issue, but I think that after making due allowance for that enthusiasm, which naturally attends a new and important surgical procedure, the facts available at present go to show, that nearly, if not quite, as many patients recover after intubation as after tracheotomy. This is a triumph for the new method which ought to arouse even its most ardent admirers.

It having been shown by the most reliable facts and figures at hand that intubation is reasonably efficient in relieving dyspnoea, and in saving life, several other points now present themselves for consideration, and among them is the comparative ease and facility of performing the operation itself. It is undoubtedly the case that as the new method does not require the life, nor an anæsthetic, permission to do it is more readily given. For these reasons an earlier interference is practicable, thereby conserving the strength of the child. It is difficult to understand the assertion made by some writers, that it is an easy operation to perform. "You will find no difficulty in doing intubation," says one. "The child is swathed, the gag is in, the tube is in, the thread is out, the gag is out, and the relieved and bewildered child is looking about, laughing, and quite unable to comprehend the surroundings."¹⁸ This is a brilliant picture, and while it may be true in numerous instances in the hands of an expert, yet very many physicians, who will be called upon to do the operations, are not experts, and to them the above assertions will be misleading. O'Dwyer's remarks upon this point would seem to be more in accordance with common experience. "Nothing could be more erroneous than the prevalent opinion, that it is an easy matter to place a tube in the larynx or remove it, but am satisfied that a single trial will serve to convince most persons of this fact."¹⁹ Hence the importance of practising the method upon the cadaver.

Intubation is often a difficult operation to perform upon patients under three, or over twelve or fourteen years of age, and at any age if the epiglottis and neighboring structures are much swollen and infiltrated. In young children the space in which the necessary manipulations take place is limited, the larynx is small, deep and movable, and made more so by the struggles of the patient. In adults it is difficult to reach the top of the larynx with the forefinger, except when they try to vomit or cough or swallow. During these efforts the larynx is raised sufficiently to be felt, and a quick, dextrous motion will usually carry the tube to its destination. If the parts are extensively infiltrated and thickened, it is by no means easy to determine the different structures by the touch, while

the exhausted condition of the patient often demands, that the least possible amount of time shall be consumed in placing the tube. Several fatalities have occurred under these circumstances, and unless one is reasonably familiar with the operation, and can do it quickly without using force, a careful tracheotomy would probably be a safer procedure. A moderate experience will enable most surgeons to do the operation with comparative ease and facility, except under the conditions above mentioned, but whoever thinks that intubation consists in simply sliding a tube down the throat, as he would a sponge probang, will probably have ample reason to change his mind before he has operated upon many young, or upon many very sick children.

In doing this operation one fact should always be borne in mind, and that is, that no force is required to enter the larynx. If the tube does not pass along easily, then the direction is wrong. O'Dwyer mentions two cases in which the autopsy revealed a perforation of the walls of the larynx from too great force. A cool head, steady nerves, and gentle manipulations are essential to a proper performance of this operation.

It is often more difficult to remove than to introduce the O'Dwyer tube: The calibre is small, the inner surface coated with secretion, making it slippery and difficult to hold, the larynx is deep and movable, which added to the struggles of the child, make the manipulation anything but easy. Care is to be taken that the forceps be not opened till they have entered the tube, as the larynx is liable to be lacerated.

Tracheotomy, like intubation, may be easy or difficult according to circumstances. Every one knows how difficult it is to do in young and fat children, as the trachea lies deep in the neck, is small, soft and movable, the veins are large and tortuous, and hemorrhage is likely to be free, thus obscuring the parts and delaying the surgeon. Under these circumstances intubation is undoubtedly the better procedure in a majority of cases. Should the patient be greatly prostrated from sepsis or other cause, both operations are attended with danger, and the physician would do well to select the one with which he is the most familiar.

For several years I have discarded sulphuric ether as an anæsthetic in tracheotomy. It produces congestion of the mucous membrane and an increased secretion to such an extent as to increase the dyspnoea in many instances to a dangerous degree; spasm of the glottis is also likely to follow, thus adding another element of embarrassment to a condition already sufficiently grave. Chloroform usually acts very kindly in these cases, and unless the child is unconscious, or partly so, it is my custom to give a few whiffs — just enough to numb the incision in the skin. After that is divided, this operation is attended with little pain, and is better completed without further anæsthesia, thereby lessening or entirely avoiding shock. With plenty of assistance, the operation can be satisfactorily done without any anæsthetic.

Tracheotomy can be done with the aid of one good assistant. Intubation requires, at least, two. If the operator cares for the integrity of his left forefinger, he will see to it that the gag is intrusted to a reliable person, to one who will not allow it to be displaced by the tongue, or in the struggles during the brief period of suffocation while the tube is being placed. Ingals mentions a case of diphtheria in a physician contracted

¹⁸ W. P. Northrup, M.D. Medical Record, December 11, 1886.

¹⁹ O'Dwyer. Medical Record, December 11, 1886.

from a bite, which proved fatal. A patient can be quieted with chloroform during tracheotomy, but, in doing the new operation, reliance must be placed upon the strength and steadiness of the assistants. In an emergency, the old operation can be done with less aid than the new, but to do either comfortably, the same help is required in the one as in the other.

As time goes on, it will probably be found that as many patients perish while undergoing the new operation as the old. The dangers in tracheotomy are collapse and hemorrhage, and yet the deaths which occur upon the table are not common. Ten of the City Hospital cases proved fatal in that manner. "Two of these evidently died of heart-failure, for they stopped breathing before the trachea was opened, and had but slight hemorrhage. Four had profuse hemorrhage, and two died of shock some little time after the tube was put in place and everything seemed favorable. In the remaining two cases the records are not full."²⁰

The most serious accident liable to occur during intubation is the obstruction of the tube or trachea by dislodged membrane or other secretion. Fortunately, it is not a common occurrence, but it calls for prompt action to save the patient. The tube is to be removed, and unless the efforts of nature are sufficient to clear the air-passages, the trachea should be opened at once and artificial respiration resorted to if necessary. In fact, the new operation should not be undertaken in severe cases of membranous croup without having the facilities for tracheotomy at hand for an emergency.

To one not familiar with the new method, the rapid respiration, 60 to 80 per minute, sometimes present might seem to be due to the small calibre of the tube. Such, however, is not the fact in my experience, as I have done tracheotomy under these circumstances without making the slightest difference in the rapidity of the breathing. This symptom means bronchial croup or pneumonia, and is not due to lack of space in the tube of either kind.

Some difference of opinion exists in the profession as to the amount of care and skill required in the after-treatment of intubated patients. I suppose no one will question the desirability of having skilled assistance at hand for three or four days after both operations, but in very many instances this is impossible. The points to be decided are, what operation should be done in cases where the after-treatment must be left principally to a nurse or to persons with ordinary tact and ability, and what one is to be chosen when the tube can receive no attention of consequence. In well-appointed hospitals, where reliable aid is always available, these questions are of less importance than in sparsely settled districts, or when the patient lives miles away from a physician or other competent assistance. The tracheotomy tube always requires more or less care to keep it clear, but any one of ordinary tact can soon learn to do it by means of feathers, straw, installations, and so on. In an emergency, the string may be cut, both tubes removed, and the wound kept patent by means of a dilator until the obstruction is relieved.

On the other hand, while the O'Dwyer tube is much less liable to become filled up, yet it does "gum," or it is suddenly occluded in some cases, and, unless it is coughed out, it must be removed and cleaned. Of course, no one can do this unless he has had some training and experience. Herein

lies one of the dangers of this method. If the patient cannot relieve the dyspnoea by ejecting the tube, he must bear it as best he can till help arrives. Death occasionally takes place under these circumstances. Whether the obstruction be slow or sudden, an ordinary attendant can take care of a tracheal tube, but not of the laryngeal.

The testimony of one of our best nurses, who has had a good deal of experience in taking care of both classes of cases, is interesting in this connection. She says: "In a hospital, or wherever a physician is within easy call, I had rather take care of intubations. Under the opposite conditions, I should feel safer with tracheotomy." The reason for this is that it is sometimes necessary to replace the O'Dwyer tube immediately to prevent suffocation. This is especially true in septic children.

In cases where the tube can receive no attention whatever, as among the very poor, etc., intubation is probably the better procedure. Some risk must be taken under these circumstances, and as the danger from sudden or gradual obstruction is not very great after the new method, this would seem to be the best one for the occasion.

As to the relative amount of work and care involved in the after-treatment of the two operations, it may be said that a good nurse will find plenty to do after both. "The time we used to spend in taking care of the tracheal tube is now occupied in feeding the children; but, on the whole, it is less work and more agreeable to take care of intubations." So says the nurse above referred to, and the testimony of the house-surgeons is all in the same direction.

In many instances it requires great tact, patience, and perseverance to give intubated children sufficient nourishment. Liquids choke them more or less, and too often they have no appetite for solids. Occasionally a child gets frightened, and refuses to make an effort to take anything, in which case tracheotomy is advisable. Soft solids, like ice cream, mush, eggs, etc., are valuable articles of diet under these circumstances, and something can be done by means of nutritive enemata.

Rarely is there any difficulty met with in feeding tracheotomized children. In the very sick there may be a total want of appetite for even liquids. The power to swallow is also occasionally impaired by paralysis of the muscles of deglutition, which allows the fluids to return from the nose, or even to enter the trachea, and find exit through the tube. This seldom occurs except in very septic cases, and even then it is far from common. As a rule the power to swallow is not interfered with by tracheotomy.

A great deal has been said and written about "food pneumonia," and other affections caused by the entrance of food to the lungs, via the laryngeal tube. It is true that patients cough and choke a good deal while taking liquids, but at the autopsies pathologists do not find any evidence of food in the finer bronchi. Dr. Northrup,²¹ has reported 107 autopsies made at the New York Foundling Asylum, in which special attention was paid to this point, and no evidence whatever was found to show that the extension of the disease was due to the presence of a foreign body, such as milk or other food. Surely if a hundred post-mortem examinations made with reasonable care and intelligence do not reveal the existence of this alleged

²⁰ Lovett and Monroe. *Op. Cit.*

²¹ *Medical Record*, December 11, 1886.

condition, that question may be considered settled for the present.

It is a well-established fact, that in a large proportion of the fatal cases of croup, death is due to an extension of the disease to the deeper air passages producing bronchial croup or pneumonia. It has been claimed that intubation would prevent this complication to a great extent, for the reason that the air thus gains entrance to the lungs through the natural channels. Experience does not, as yet, seem to substantiate that assertion. In 50 of O'Dwyer's 73 fatalities death was due to an extension of the disease. Of the 109 deaths reported by Waxham, 69 perished in this manner. The cause of death in the majority of fatal cases of intubation at the City Hospital was bronchial extension. In fact they died from the same causes, in the same manner, and in about the same time after the new operation as they formerly did after the old one of tracheal section.

Dr. O'Dwyer uses the following language in relation to this subject: "Although pneumonia is not an uncommon sequel of intubation of the larynx and of tracheotomy, I believe the principal factor in its causation after both operations is the impairment of the expulsive power of the cough from the inability to close the glottis, and the consequent retention of the irritating substances in the bronchi, and not the entrance of extraneous substances through the tube."²² Others ascribe the frequency of these affections in tracheotomized patients to the fact, that the air enters the lungs directly, without having been warmed and moistened by passing through the normal channels.

I venture to express my doubts as to the soundness of either of the above opinions. So far as we know at present bronchial croup is just as frequent, and just as fatal in cases which have received no surgical treatment whatever, and in which the power to cough and expectorate has not been interfered with. The only difference to be noticed is, that the patients live longer in consequence of the operation, thus allowing the secondary affections to reach a greater degree of development. It is the natural tendency of the exudation process to extend in all directions downwards to the bronchi and smaller tubes, as well as upwards to the nares and so on, in spite of any and all methods of treatment. Speaking in general terms we can neither prevent it, nor cure it. Such being the facts as is conclusively shown by the experience of a multitude of observers, it is unnecessary to ascribe the causation of these secondary affections to any mode of treatment, until a reasonable array of facts can be brought forward to substantiate the assertion.

While it is always desirable on general principles to avoid a wound in the skin, yet that made in doing tracheotomy seldom gives much trouble, or does much harm. "Diphtheria of the wound was noted in only 6 of the 327 cases; 3 of these recovered."²³

The septic material or poison does not enter the system in that way. It has gained admission, as a rule, long before there is any occasion to make a wound; and moreover, the septic cases pursue the same causes whether an incision has been made or not. It is rare for the tissues to slough or abscesses to form, or other untoward local event to occur in these cases. This objection to tracheotomy is more theoretical than practical.

The tracheotomy tube occasionally irritates the trachea, and produces exuberant granulations. So likewise does the laryngeal tube. Northrup found ulceration in five autopsies caused by the irritation of the lower end of the tube upon the anterior wall of the wind-pipe. These complications are not common, however, and they need not deter us from choosing either method in accordance with the other conditions present in the case.

A final word as to the after-effects of each operation upon the voice and general health. Drs. Lovett and Munroe,²⁴ personally investigated 56 cases of tracheotomy with these two objects in view. The operation in every case had been done at least a year previous to the examination. "Fifteen cases were seen from one to two years after operation; 16 cases in three years; 12 cases in four years; 2 cases in five years; 6 cases in six years; 4 cases in seven years; and 1 case in twenty-one years." There had been no deaths in this number of cases (56), and 53 were found to be in good general health. None of them had had a second attack severe enough to call for surgical interference, only 6 were liable to sore throats, a remarkably small proportion.

The voice was clear in all but 4 cases; and in these the impairment was not grave. One could not sing as high as she could before the operation, but laryngitis without operation produces the effect upon the voice at times, so that all the trouble cannot be fairly laid to the treatment.

The residences of seventeen children, who were intubated at the City Hospital, have been visited by Dr. C. M. Whitney, formerly house surgeon, at periods varying from two to fourteen months after the operation. One child had died a month after the onset of the disease from some cerebral affection, probably the result of sepsis. All the other children were well. Every one of them had been hoarse for a term ranging from two to twelve weeks. One had aphonia for two weeks. The voice in the fatal case mentioned above, never returned after the operation. So far as can be known at present, every one who survived eventually regained the voice in its natural degree. One had had a return of "croup" in eight months, but it was not membranous. All of these children swallowed without any difficulty. I have not been able to gather any evidence showing that the O'Dwyer tube produces permanent impairment of the voice, or of the power of deglutition.

I have thus in a very imperfect way, endeavored to show that, while intubation is a most valuable operation, it is not as free from objections and complications, and is not so far superior to the old and time-honored operation of tracheotomy as some of its advocates would lead us to suppose. The method has great advantages. In favorable cases it is easily and quickly performed; there is no cutting, and hence no hemorrhage; no anæsthetic is required; as it is not looked upon by the laity in the same light as an ordinary surgical operation, consent for its performance is more readily granted; it can thus be done earlier in the disease; many practitioners will undertake the new method who would shrink from the old one; the tube takes care of itself; it is often coughed out when no longer required; it is especially adapted to young children.

But on the other hand, the operation may be diffi-

²²O'Dwyer, op. cit.

²³Lovett and Munroe, op. cit.

²⁴Op. cit.

cult and even dangerous to perform; it may not relieve the dyspnoea; the tube may be repeatedly coughed out or it may be swallowed; it may "gum," thus requiring frequent removals; it may become suddenly occluded, and unless quickly ejected or removed, death will ensue; and there may be great difficulty in feeling the patient.

Both operations are often attended with difficulties, and occasionally with danger; both are liable to complications; the mortality attending each is about the same; the fatal results in a majority of instances are due to the extension of the disease to the lungs, and this occurs as frequently after one operation as after the other; in neither case is the treatment the cause of the complication, nor does it prevent, or cure it.

In conclusion, I would say, that in a majority of cases of membranous laryngitis intubation may be done with a fair prospect, that it will effectually relieve the dyspnoea for the time being.

That it is to be preferred in young children and in all cases living at a distance from skilled aid, where the tube must be allowed to take care of itself.

That it may be resorted to preliminary to tracheotomy.

That it may be done for euthanasia providing the operator is reasonably expert and can do it quickly without producing collapse.

Tracheotomy is indicated in those cases in which intubation cannot be done, or in which it fails to give relief to the dyspnoea.

In severe cases situated at such distances, or under circumstances in which only ordinary and not skilled assistance can be obtained in an emergency, tracheotomy is the safer method.

It is also to be preferred in those cases of intubation which cannot be fairly nourished either in the natural way or by enemata, etc.

It may be resorted to when the O'Dwyer tube is frequently ejected, or when it requires frequent removal to prevent obstruction.

I would repeat that as regards patients residing at a distance, if competent aid is to be at hand during the convalescence, intubation is advisable as it is if no care whatever is to be given to the tube. But if ordinary care and no other in case of accident can be commanded, and I mean by that, a fairly good nurse, or any clever person, then tracheotomy is the better procedure.

Each operation supplements, but neither supplants the other. The old one should ever be held ready to come to the aid of its young and vigorous rival. That Dr. O'Dwyer's method is a most valuable one, is amply shown by the fact, that it is surely growing in favor, and that new evidence in that direction is constantly being presented. As it has been before the profession but a few years, there is reason to hope that some means will be found to overcome its disadvantages, and thus make it a more complete substitute for the older, more serious, and more difficult operation. It marks a real advance in the art of surgery, and it is an honor alike to its ingenious inventor, and to American skill and perseverance.

— Professor Holmeier, of Grissen, has been called to the chair of obstetrics in Würzburg, made vacant by the retirement of Professor Scanzoni. Professors Fritsch and Kattenbach had previously declined the honor.

REPORT ON PROGRESS IN THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D., AND SAMUEL DELANO, M.D.

SULPHONAL.

This substance adds one more to our new stock of hypnotics, and at first sight the good of it might not appear, possessed, as one's mind naturally might be, by the thought that this is only one more to help in making a cumbrous list, from which it will soon be embarrassing to choose. We only need, though, to consider how complex a subject insomnia is, on how many varied causes dependent, in order to feel, as Rosenbach¹ emphasizes, the importance of increasing the number *still more*, in order that, having determined their exact physiological limits, we may select and adapt with increasing accuracy, and finally not prescribe simply an hypnotic, but a *certain* hypnotic for certain conditions.

In spite of a large number of hypnotics, a common objection to the older ones as Kast² points out, is that they act upon the central nervous system, including the vaso-motor, so intensely that a dangerous diminution of the blood pressure is possible. According to Schmiedeberg, no hypnotic should contain chlorine, and most of the newer hypnotics obey this law, as, for example, methylal, hyponine, urethan, paraldehyde and amyl-hydrate, several of which are prominent hypnotics at the present time.

The method of testing a new hypnotic is certainly of importance if we are looking for accuracy of results, and what Rosenbach¹ says *apropos* of sulphonal is well worth repeating. As every one knows, the mental condition has much influence upon the ability to sleep; therefore, in all tests we should first proceed *without the knowledge of the patient*; if the results appear good, let the patient know, and then substitute an indifferent agent, and with this alternate irregularly the hypnotic. Finally, administer it to patients, without their knowledge, who are not in bed, and at times when sleep is not customary.

Sulphonal was introduced by Kast and Huisberg,³ and of its rank Kast says it deserves a place not among those substances compelling sleep, but belongs to those that support the normal need for sleep, and, when this itself is dormant, arouse it. He points out that this is the most frequent condition to be met, and that it is precisely in these cases ("nervous insomnia") that the "drastic" hypnotics often work harm. It is a white powder with crystals of a large tablet shape, absolutely without taste or smell, soluble in eighteen to twenty parts of boiling water, and in one hundred parts at ordinary temperature. Experiments on animals first taught that for them it was a sure hypnotic. Given, then, to healthy men, it produced in general only a beumbing effect, a slight tired feeling, and a diminution of excitability, but only in the minority of cases procured sleep out of course. In patients, mostly cases of nervous insomnia, it almost invariably produced in from one-half to two hours a quiet and sound sleep, lasting five to eight hours. In only one case out of one hundred and twenty did it disappoint. Since then many observers have given the drug a thorough trial, and in all essential points substantiated Kast's account. Many of the series have dealt with mental cases, which naturally furnish good material, and to which sulphonal is especially suited on account

¹ Rosenbach. Berlin, Klin. Wochenschrift, 1888, No. 24.

² Kast. Ther. Mon. Hitz, July, 1888, p. 316.

³ Kast and Huisberg. Berl. Kl. Wochenschrift, 1888, No. 16, p. 309.

of its lack of taste and smell. Rabbas⁴ found the effect coming on in one-half an hour, more rarely in one to two hours; but Oestreicher⁵ declares it slower in action—one to three hours. As to effects outside the hypnotic, or as to bad effects, they seem to be almost *nil*. Kast found in animals that some ataxia was produced before sleep set in, but did not observe this in man. Physiologically there is found to be no diminution of blood pressure, and in man no effects on the heart or circulation have been noted. No symptoms have been noted on the part of the digestive tract. In some cases the patients have been drowsy the next day, and Schwalbe⁶ found slight after-effects in twelve per cent. of his cases, the most constant being slight vertigo and headache. In regard to the dose, the average has been thirty grains. Rosin,⁷ making a clinical application of Rosenbach's cautions above mentioned, found that a dose of fifteen grains was not sure, though sometimes effective, (large enough for women, according to Kast) while thirty grains was a sure hypnotic, without unpleasant consequences, disappointing in but few cases, and equal to one-sixth to one-quarter grain of morphia. Forty-five grains produced no unpleasant effects, but one drachm, besides giving an intense sleep lasting eight to twelve hours, was followed by a staggering feeling, of which all the patients complained, and which lasted the whole of the next day. Cramer,⁸ however, gave as much as one drachm in six days without ill consequences. Rabbas finds thirty to forty-five grains surer and better than amyl hydrate and paraldehyde, and its effect lasts longer than chloral, though it is not so prompt. Lovegrove⁹ alone seems to have met with disappointment from the drug. He finds it very dear, and nothing asserted of it can be substantiated. It is *not* soluble in eighteen to twenty parts of hot water, nor in one hundred parts at the ordinary temperature. When given, he finds no effect for several hours, and then no good hypnotic action, but next day extreme drowsiness, with considerable cyanosis. Kast² explains that more exact observation has taught him that it is soluble in eighteen to twenty parts of boiling water, but recrystallizes on cooling. At the temperature of the body, though, *four hundred and fifty* parts of water are needed to dissolve one of sulphonal. Thus it is *relatively* insoluble in water, but the solubility is much increased by salts, hydrochloric acid, peptones, etc. Thus, for prompt action it should be given in a good quantity of warm water in the early evening hours, and best with the supper. In this way advantage is taken of the conditions favoring a rapid solution.

AMYL-HYDRATE.

So many trials have been given this hypnotic during the past year, and so successful have they been, that without doubt it may be accepted and added to the list of working hypnotics. With general unanimity it has been placed between chloral and paraldehyde, that is, in hypnotic effect, (Avellis,¹⁰ Buschan,¹¹ Dietz,¹²) and the relative doses of chloral (German dose, fifteen grains) amyl-hydrate and paraldehyde are

as one, two, three. Many assert its superiority to chloral in not having a depressing effect on the heart, but Dietz¹² has observed a pulse of thirty-six, and thinks the statement should not be modified. Buschan also, in his own case, observed that the pulse fell ten to thirty-five beats, and that the tension was much diminished. It has the advantage over paraldehyde that the disagreeable odor in the breath, which is annoying both to the patient and his friends is wanting. At the same time amyl-hydrate is itself a disagreeable drug on account of the taste. It mixes with water, but separates, and so should be given in a mixture (*vide* case of poisoning *infra*). Gürtler¹³ recommended *syn. rubi* as a corrigent, but Avellis¹⁰ says it forms a precipitate with this. It would seem best to follow Dietz¹² and order but one dose, or if several, have them dispensed separately. In capsules it is a good but dear way. Gürtler¹³ gave it to children in pills. It is a better substance to give by enema than chloral, because not so irritating—the effect is the same as *per os*. The average dose used has been forty-five minims, but Avellis¹⁰ secured his success with thirty to thirty-six minims. It is certainly better to begin at this lower figure, because, although ninety to one hundred minims have been taken, Dietz¹² believes his cases of poisoning to have been from an amount not much over seventy-five minims.

As to its physiological action, its effects are hypnotic and sedative. Buschan,¹² experimenting on himself, took on five occasions from forty-five to one hundred minims, and observed the following effects: In two to three minutes the iris began to oscillate, and this went on to complete dilatation of pupil in from five to ten minutes; the pulse diminished ten to thirty-five beats, and the tension was so much diminished that there was almost diastolicity; the hypnotic effect began in ten minutes; reading, and especially the understanding of what was read, became difficult; in from ten to fifteen minutes he was forced to lie down, and then slept from eight to nine hours; there were no unpleasant after-effects.

Avellis¹⁰ observed the hypnotic effect generally in from five to eight minutes. Patients under its influence are easy to awake, and are then clear-headed, but drop off to sleep again readily. The sleep is like natural sleep, and as refreshing. Some observers have not noticed any bad effects (Avellis, Buschan on himself) but others have noted a few. Gürtler¹³ has noticed some excitement preceding the hypnotic effect, and the patient felt as if tipsy. In a few cases headache and vertigo followed. Buschan noticed nothing in men, but in a few women headache following, and sometimes a little mental confusion. Dietz,¹² though, has observed one serious accident. The drug had been used for some time in the form of a mixture to be shaken. This was once omitted and four patients got, it is not known how much, but from estimate not a great deal more than the average dose. On the night of taking and the next they all slept well, and nothing unusual was noticed, but on the morning of the second day they were all found in deep narcosis, from which it was impossible to arouse them, with relaxed limbs, sensibility and reflex irritability abolished, no corneal reflex, dilated pupils, slow irregular respiration, slow small pulse (fifty-six to sixty), and subnormal temperature. They were let alone without much treatment, and slept that day and the next night. If

⁴ Rabbas. Berl. Kl. Wochenschrift, 1888, No. 17, p. 330.

⁵ Oestreicher. Berl. Kl. Wochenschrift, 1888, June 15, p. 501.

⁶ Schwalbe. Deut. Med. Wochenschrift, 1888, June 21, p. 439.

⁷ Rosin. Berl. Klin. Wochenschrift, 1888, No. 25, p. 490.

⁸ Cramer. Münch. Med. Wochenschrift, 1888, June 12, p. 395.

⁹ Lovegrove. Brit. Med. J., 1888, p. 1112.

¹⁰ Avellis. Deut. Med. Woch., 1888, No. 1, p. 10, and Ther. Moutfhe, 1888, Feb., p. 53.

¹¹ Buschan. Berl. Kl. Wochenschrift, 1888, No. 12, p. 238.

¹² Dietz. Deut. Med. Zeit., 1888, March 1st, p. 211.

¹³ Gürtler. Berl. Kl. Wochenschrift, 1888, No. 6, p. 92.

aroused, as they could be later, they appeared like drunken men. Dietz¹² compares the action of the drug in these cases to alcohol.

Clinically, the results have been almost an unbroken success. With the exception of the case above mentioned, Dietz¹² had good results in mental cases. Buschan¹¹ met with complete success in 91.6% of men, and, in women, success in 72.7, moderate in 15.5, and failure in 11.8. Avellis,¹⁰ using it in forty patients with various diseases, and making in all three hundred trials, had but three failures. Mayer,¹⁴ among several hundred observations on fifteen patients, does not speak of failure. Its general sedative effect Mayer has observed especially in chest affections with irritative cough; the irritability ceased quickly before sleep came on. Schar Schmidt¹⁵ gave it to eighty patients with various mental troubles and alcoholism. He ranks it next to chloral, and sometimes finds it more powerful. Avellis¹⁰ also recommends it especially in icterus and icteric pruritus. Gürtler,¹³ in out-patient practice, finds it satisfactory, except in a few instances.

METHYAL.

Methylal is another hypnotic and sedative which has come into some prominence during the year, though not like sulphonal, a newly discovered substance, having been first made in 1833 by Malaguti, and as long ago as 1868 recommended by Dr. B. W. Richardson,¹⁶ who classed it as an anodyne anti-spasmodic. Experimentally, Richardson found that it excited the action of the heart and diminished tension; that it caused deeper and slower respiration, and produced a desire to sleep; it was a sedative to pain, but not to a great degree. By long exposure to its vapor, an animal may be brought into a deep sleep; but, used subcutaneously, it has this effect much sooner. No vomiting follows narcosis produced by it. According to Richardson, it is tasteless if pure, though biting the tongue; has a low boiling point (107° F.), so that it evaporates quickly, possesses a fragrant odor, and is non-irritating to the respiratory passages.

Personali¹⁷ conducted experiments on animals, which proved that, injected subcutaneously, it will cause immediately anaesthesia, suspension of the reflexes, and deep sleep, lasting six hours. If inhaled, the effects come on also very rapidly, but when given internally the absorption is very slow. It has, also, a toxic action when pushed, life ending by coma and paralysis. Lemoine²⁰ confirmed Richardson as to its effect on the circulation. Its elimination, Personali¹⁷ found, takes place entirely and rapidly by the lungs. Like paraldehyde and most hypnotics, it is antagonistic to strychnia, controlling convulsions.

As to its clinical use, considerable evidence has accumulated in its favor as a hypnotic. Bouhila and Hatjes¹⁹ have found it efficacious in chronic mental cases, but not in fresh melancholia or mania. They have given it in doses of from forty-five minims to two drachms for long periods without ill effects; they note that the control of the drug is exhausted in from six to eight days, but three days' remission serves to restore it. Its solubility, pleasant taste, and innocuousness give it special advantages, and they find it

"justly superior" to chloral, urethan, and opium—at least, in mental cases. Petrazzani (quoted by Krafft-Ebing¹⁸) met with favorable results in its use in insanity, two drachms usually producing in forty to sixty minutes a good sleep, lasting several hours. Krafft-Ebing's¹⁸ trials of the drug differ from those of others in that he used *very small doses subcutaneously*. The very small dose he used on the suggestion of Merck, the more readily because of the dearthness of the drug. This amount was one and two-thirds grains (gm. 0.1) in nine parts of water, making a subcutaneous syringeful ("Pravaz Spritze" = fifteen minims). He has used it in different cases, but now reports only of delirium tremens, having selected that as a disease where there is particularly obstinate sleeplessness. The number of cases embraced in the series was twenty-one, of which three-sixths he classes as light, two-sixths moderate, and one-sixth severe. He concludes that there was no doubt of its favorable effect in producing a "critical" sleep (of eight hours to twenty in duration). In six cases, only one dose was necessary; in ten, two to four; in three, five to eight; in two, ten to twenty. If necessary, it was repeated every two hours till sleep was procured. There were no cases of failure, though in some twenty-four hours was necessary; there were no fatalities in the series. During the convalescence, every evening, two injections were given to guard against a relapse. The quality of the sleep was natural, and no bad consequences were observed. The smallness of the dose is conspicuous, especially when it is contrasted with the internal dose, and this, with the tardiness of the effect (two to six hours), suggests to Krafft-Ebing that perhaps it is not a direct hypnotic, but acts by procuring conditions favorable to sleep. There is some burning at the point of injection, but he has seen no inflammation. His results have led him to consider it our *best quieting and sleep-producing agent in delirium tremens*, and in general he believes it to be excellent in all excited and sleepless conditions dependent on inanition and anaemia of the brain. In severe delirium of this nature and hallucinatory insanity, he has repeatedly seen it successful where other hypnotics have failed. It is of no value in hyperaemia, and so is not useful in toxic alcoholic delirium. It is not tonic for an exhausted brain, as opium, and this, perhaps, explains the persistence of tremor in the delirium tremens cases far into convalescence.

HYOSCINE.

So extensively has this substance been used the past year, that considerable additions have been made to our knowledge of its therapeutic application. Of the two derivatives from hyoscyamus, hyoscyamin has properties identical with those of atropia, and thus occupies no independent position. Of hyoscin, which differs considerably in many points from atropia, there are three salts in the market: the hydrochlorate, hydrobromate, and hydriodide. Of these, Kobert²¹ recommends the hydrochloride of Merck. Erb,²² however, could see but little choice, though he, too, has a leaning to the hydrochlorate. Thompson²³ prefers the hydrobromate in mental cases.

The most important difference between atropia and hyoscin attaches to their action on the brain. Atropia *increases*, but hyoscin, on the contrary, *diminishes* the

¹² Mayer. Ther. Monatshefte, July, 1888, p. 325.

¹³ Schar Schmidt. Ther. Monatshefte, 1885, No. 9.

¹⁴ Richardson. Asclepeud, Vol. IV, 1867, p. 46.

¹⁵ Personali. Progres. Med., July 2, 1887, No. 27.

¹⁶ Bouhila and Hatjes. L'Encéphale, 1888, No. 3, p. 281.

¹⁷ Krafft-Ebing. Ther. Monatshefte, February, 1888, p. 65.

¹⁸ Lemoine. Gaz. Med., July 14-21, 1888.

¹⁹ Kobert. Ther. Monatshefte, July, 1887, p. 267.

²⁰ Erb. Ther. Monatshefte, 1887, p. 252.

²¹ Thompson. Lancet, 1886, p. 218.

electrical excitability of the motor tract. This expresses itself in healthy men by a weak narcosis; but in conditions where the brain is irritated, as in mania and delirium, by a quieting effect, which makes it "without a rival."

Sohet,²⁶ in conjunction with Kobert,²¹ used it in one hundred such cases, and found this action constant. As to the article by Haynes,²⁴ referred to in last year's *Review*, Kobert²¹ finds in them an illustration of what will happen when it is used simply as a narcotic, with proper indications; it is not a substitute for morphia. Indeed, one cannot be too careful with the dose, because the susceptibility to its action is very variable. Erb²² several times saw toxic action from gr. 15³⁵, the patient appearing as if drunk. Most patients complained that it made them feel weak and sleepy for several hours, but Erb does not consider it an active *hypnotic*. Thompson²⁸ found that if the dose were not carefully regulated, it easily produced a marked sluggishness of all motor functions, with depression of reflex activity, dizziness, dimness of vision, an ataxic gait, and dryness of the mouth and fauces. Erb²² also notes these symptoms, and, in addition, flushing of the face. In spite of the fact, then, that Kobert²¹ does not find it a poison fatal to animals, and that Haynes (vide this *JOURNAL*, 1887, 11, p. 357) used it in quantities as high as one-thirty-third of a grain at a dose, or one-tenth of a grain in twenty-four hours, one should proceed very carefully, as the symptoms from very small doses may be quite alarming (Erb). Because of the smallness of the dose and the necessity of controlling it, it is best to administer it hypodermically. One-three-hundredth of a grain is enough to commence with, gr. 1³⁰ is, perhaps, an average, and no observer has given higher than one-fiftieth, and then only in obstinate cases (Fischer²⁵).

The largest class of cases in which it has been used comprises excitement, restlessness (of melancholia), delirium, and mania in insane patients (Thompson,²⁸ Fischer,²⁶ Krauss). It has rarely failed in quieting the patient and usually producing sleep. Fischer²⁵ found it to succeed as a hypnotic (one-sixty-fifth of a grain) in obstinate cases, where morphia and chloral had failed. As long ago as 1883, Clausen recommended hyoscin in whooping cough, nervous palpitation, epilepsy, and *paralysis agitans*. During the last year, Professor Erb²² has come forward with a very flattering notice of its success in this last disease. In its effect on the tremor it is a very important palliative, though it is not curative. Yet in several cases the tremor disappeared for half a day. The trial covered a dozen severe cases. In other spasmodic affections the results were not so uniformly favorable. Intermittent muscular spasm was controlled in a good many cases. In one case of severe torticollis and one of tetany the benefit was surprising. Buldee²⁷ confirms these statements of Erb, having found it of much value in controlling the involuntary movements of paralysis agitans, tremor senilis, and tremor alcoholicus.

ANTIPYRINE AND ANTIPYRETICS.

Very little has as yet been done to establish the physiological action of antipyrine, though the restriction to purely clinical and empirical study of the sub-

ject must tend to make much of our information untrustworthy. Robin²⁹ finds that it hinders tissue change and diminishes organic oxidation. To this property, no doubt, its quieting action on the nervous system is owing, because all depressants of nervous activity affect tissue change in this way. Robin calls attention to its antiseptic properties, which, he thinks, should be made more use of; at all events, they must, he believes, play a certain rôle. According to Caravias,³⁰ in five to ten per cent. solution it is a stronger antiseptic than sublimate (1-1000). The same writer attributes to it a special action on the spinal cord in therapeutic doses, diminishing its excitomotor activity. In larger, though not toxic doses, the strength of the systole diminishes and the peripheral vessels dilate. If this last is true of it, one finds it difficult to explain its direct hemostatic action, as claimed by Hénoque.³⁰ (Hénoque believes that it contracts vessels and tissues.) Gerard³² investigated its antifebrile action. If the heat centre in the tubercula quadrigemina is irritated, the increase of temperature is less and less permanent if antipyrine has been given. He considers inhibition of certain parts of the nervous centres as the essential factor in its antipyretic action, and the diminution of tissue change and lowering of temperature as results of the same. According to Elvey,³¹ antipyrine suspends functional activity of the kidneys, and should be avoided in renal disease. Masella³² finds that, when given by the rectum, it diminishes the temperature and is excreted by urine. Applied externally, there is no absorption; given subcutaneously, it appears very quickly in urine, and that it is not excreted into pathological fluids, nor by saliva, milk, or skim. Lepine and Porteret³² have found that it increases the glycogen of liver, diminishing the formation of sugar. It also diminishes renal secretion.

Some of these items in its physiological action will explain certain of the accidents and unpleasant experiences which have followed its use, though these have been few, considering its very extended application, and, as a rule, have not been alarming. The most constant toxic phenomenon has been an eruption, quite diffuse, so that one observer has called it scarlatinal (Wilson³⁴—two or three instances). To others it has seemed urticarious, while others have found it like measles, and difficult to distinguish from it (especially when antipyrine also causes coryza). Von Jaksch³⁵ is authority for the statement that other eruptions, as measles, easily assume a hemorrhagic character under its administration. Germain-Sée³⁶ says the eruption occurs in one out of twelve to fifteen cases, but only when the administration is continued for ten to fifteen days in large doses. That this is not absolutely so is proved by Sturge's³⁷ case, in which four grains, given for migraine, caused in five minutes coryza, feeling of suffocation, cough, tinnitus, coppery taste in mouth, rapid pulse, profuse sweating, and an "urticarious eruption about thighs." Taylor³⁸ saw about same

²⁹ Robin. *Bull. Acad. d. Méd. d. Par.*, 1887, No. 49, p. 701.

³⁰ Caravias. *Ctbl. i. kl. Med.*, January 28, 1888, p. 76.

³¹ Hénoque. *Gaz. heb.*, January 13, 1888, p. 29.

³² Elvey. *Rev. de Clin. et d. Ther.*, March, 1888.

³³ Masella. *Deut. Med. Ztg.*, March 26, 1888, p. 209.

³⁴ Lepine et Porteret. *Comptes rend. Acad. d. Sc. Par.*, 1888, p. 1023.

³⁵ Wilson. *Jour. Nerv. and Ment. Dis.*, 1888, p. 40, 43.

³⁶ Von Jaksch. *Schmidt's J. B.*, 1888, 11, p. 131; *Wien. Med. Presse*, 1888, No. 6, p. 41.

³⁷ Germain-Sée. *Bull. Acad. d. Méd.*, September 6, 1887.

³⁸ Sturge. *Brit. Med. Jour.*, 1888, p. 243.

³⁹ Taylor. *Brit. Med. Jour.*, 1888, p. 925.

⁴⁰ Gerard. *Rev. méd. d. l. Suisse Rom.*, 1887, 11, p. 642.

²⁴ Haynes. *Ther. Gaz.*, 1886, p. 594; *Bost. Med. and Surg. Journal*, 1887, p. 357.

²⁵ Fischer. *Lancet*, June 30, 1888, p. 1311.

²⁶ Sohet. *Inaug. diss.*, Dorpat, 1886.

²⁷ Buldee. *Deut. Med. Wochenschr.*, May 17, 1888, p. 407.

set of symptoms from eight grains on two different occasions. There was intense coryza, great irritability of larynx, and cough, but no eruption. Sometimes the eruption has itched intolerably; at other times, not at all (Jennings). Almost all the cases have been women. According to Ollivier, most children tolerate it well, even a dose of forty-five grains to one drachm (daily?). Another fairly constant symptom in the intoxication cases has been *cyanosis*.

Wilson,⁴¹ in quite a large series of cases, treated for relief of pain, had one case in a middle-aged woman, in whom it caused alarming syncope, with cyanosis. Brooks⁴² collected twelve cases where there were some bad effects, which he believed to be owing to idiosyncrasy, inasmuch as the cases were usually associated with many others where no ill effects were observed. Neither was the dose to blame, as it was anywhere from four to fifteen grains. Others have observed great swelling of face and eyes, so that the features are obliterated. With the affection of the air-passages, there may be so much swelling that suffocation may threaten. Jennings⁴³ reports one of the most striking cases, which we will quote in more detail: A lady of sixty-seven, of gouty tendency, had been taking for eight days thirty-five grains of antipyrine for relief of rheumatic pains. In the beginning she got a general erythema, at first slight diffuse, but really made up of patches of the size of a three-penny piece, with a very slight interval. Then the face swelled, so that the eyes were almost closed. There was coryza and hoarseness. No suffering but an intense sensation of cold, "as if the body were filled with ice." Objectively, the feet and surface of body were very cold. The pulse was 76, which was twice the usual rate (idiosyncrasy?). No sensory disturbance, except a little *timiditas*. The eruption and catarrhal condition gradually disappeared, leaving great prostration, while the sensation of cold lasted for a long while. Of two other cases by the same observer, in one seventy-five grains for two days caused loss of intelligence and severe gastro-enteritis, lasting for two days; in the other there was swelling of body and of the inside of the throat, so that suffocation was threatened. Jennings urges caution in the use of antipyrine, being certain that alarming symptoms follow in some cases the absorption of small quantities.

Beyond such cases as these in healthy subjects, and ending favorably in a short time, there have been a few cases of death attributed to antipyrine. Two such cases will be referred to in the typhoid series of Mollière.⁴⁴ In one, after fifteen days of antipyrine treatment, nose-bled followed and death from "cachectic purpura without adynamia"; and Mollière says the antipyrine seems to have determined the hemorrhagic phenomena. The second death, from eclampsia, where the autopsy showed an insignificant (!) amount of change in the kidneys, he attributes to the accumulation of antipyrine. These cases are, of course, extremely doubtful, and, as Raoult⁴⁵ says in reviewing them, the deaths are just as easily scored to the typhoid fever. A death is also reported from America. The patient was a child, for whom four grains was ordered twice a day, to be given morning and night. Instead, it was given by the father every two hours. Death took place under symptoms of cya-

nosis, collapse, and weak pulse. Doll⁴⁶ reports the case of a woman who took one ounce, in accordance with a newspaper advertisement. In three hours there was vomiting, and the patient sank into a deep swoon. The whole body was ice-cold and covered by cold perspiration. Pulse 120, respiration quickened. Mentally, the patient was in a condition resembling hypnotism, which lasted fourteen hours. During this time she appeared unconscious, but talked with the doctor, remembering nothing of it, however, afterward.

The proper treatment for cases of poisoning is said to be atropia and belladonna. It is possible that bad consequences have been owing to impurities, it being alleged that the manufacturers could not turn out a good article in quantities sufficient to meet the demand. Raoult⁴⁵ suggests that benzine is the deleterious ingredient; but Brooks, who has made much use of the drug, says that all his specimens have smelt of benzine. One French observer found that where one specimen was toxic, another, obtained from a different druggist, was well borne.

(To be continued.)

Clinical Memoranda.

A CASE OF HYDATIDIFORM MOLE.¹

By GEORGE D. SHATTUCK, M.D.,
Visiting Physician, Boston City Hospital.

S. C., aged thirty-seven years, single, domestic, born in Ireland, had been in this country five years, and had always lived in the same family. Entered the Boston City Hospital October 17, 1887. Had always been well until six or eight weeks previously. Habits good. The present illness began six weeks before entrance to hospital, with vomiting; this occurred six or eight times daily, and began usually about two hours after eating; there was distress in the region of the stomach, which was relieved by vomiting. The nausea and vomiting was not especially characteristic of the morning sickness of pregnancy. Bowels constipated, headache nearly all the time. Menstruated as usual for the last time about nine weeks before entrance.

Menstruation was due three weeks before date of admission. Flowed for one day only (usually unwell five days), then a few days later flowed a little more and stopped again; a week before admission began to lose blood again, and had been losing blood somewhat (more or less) off and on since — about two napkins daily — unaccompanied by pain.

Physical examination showed a distinct, movable, uniform swelling in abdomen, reaching from above pubes nearly to umbilicus (probably uterus), no movements, no bruit.

October 26th. Occasional nausea and slight flowing at times.

November 2d. Patient passed from Dr. J. H. Denny's service to mine. Abdominal tumor probably larger than at last record; nipples surrounded by dark areola, but breasts rather flaccid, like the breasts of a woman who had borne children. Patient denied earnestly and stoutly, as she had before, ever having

³⁹ Brooks. Brit. Med. Jour., 1888, p. 1052.

⁴⁰ Jennings. Lancet, 1888, 1, p. 364.

⁴¹ Mollière. Lyon Méd., 1888, p. 260.

⁴² Raoult. Le Progr. Méd., May 26, 1888, p. 412.

¹ Read, by invitation, before the Obstetrical Society of Boston, February 11, 1888.

⁴⁶ Doll. Deut. Med. Wchnschr., February 23, 1888, p. 138.

had sexual intercourse with any one. No vomiting until to-day since the last record.

November 7th. Vaginal examination showed an elongated and somewhat congested cervix, and a mucosanguinolent discharge from os, which was closed. The sound passed easily the normal distance, and then coming against some obstacle. Twenty minims of fluid extract of ergot three times daily was ordered.

November 8th. Patient continued to stoutly deny any possibility of conception.

November 9th. Very comfortable at the morning visit. She began to flow freely about 9 p. m., a little later a piece of hydatidiform mole was discharged, and subsequently other portions, with increasing hæmorrhage. I was summoned by the house officer about ten o'clock, but did not reach the hospital until midnight. I found the os sufficiently dilated to admit two fingers. The patient being etherized I passed in the band and cleared out the uterine cavity of the remaining portions of mole and of blood-clots. There was probably enough in all to fill a third of a pail. An antiseptic intrauterine injection was given, the uterus contracted promptly and efficiently, the antiseptic pad was applied, and the patient made comfortable. Since then she has made a good recovery.

She continued to deny earnestly any occasion of conception. November 10th, however, after much friendly persuasion, she was able to recall that, about four months before, she took food at a restaurant with some friends, the ladies persuaded her to take something to drink, which she was not accustomed to do; the party went upstairs, and she was quite unconscious in regard to what might have happened, as the drink had confused her mind.

HALUCINATIONS OF HEARING.

BY U. O. B. WINGATE, M.D., OF MILWAUKEE, WIS.

In the JOURNAL of August 2, 1888, there appears the report of a case of hallucinations of hearing by J. Alban Kite, M.D., of Nantucket, Mass.

Having had recently under observation a case which seems to serve so well as a companion case to his, I venture to report it.

Mrs. D., a widow lady of about seventy years of age, first came under my care on February 21, 1888. She had always enjoyed good health with the exceptions of some rheumatism which at times appeared in a subacute form, though not severe; and there was an indistinct history of some attack, which occurred years ago, resembling epilepsy, and thought by the patient to have been caused by a patent medicine taken at the time for rheumatism. There has been no illness for a long time prior to her present affliction. She has always been active in her habits of life. There is a slight impairment of hearing in both ears which has existed for several years. For several nights past she has been unable to sleep on account of voices which began talking as soon as she was comfortably in bed. At first when she arose they would stop. There were three voices most of the time which persisted in tormenting her with all kinds of talk, and much of their conversation was highly offensive to her sense of hearing in more ways than one; in fact they seemed to be "very evil spirits." For a time she kept the matter to herself, but growing worse she confided the trouble to a lady companion who tried to make her think it

was of no consequence and would soon disappear. But her tormentors would not go away. They grew more and more persistent and began to follow her about the house during the day as well as in the night time. She would get up in the night and fly from one room to another to escape them, but they would soon find her out and begin again worse than ever. She soon became much worn out by them. They would sing, yell and quarrel among themselves, and at times command her to do things, and she was becoming afraid of them. Sleep was impossible day or night. I found the lady very nervous, with a quick pulse, coated tongue, restless, and anxious to be relieved of her symptoms, which, so far, she had considered as only a trick of her sense of hearing. In examining the case carefully I could find no physical trouble except marked constipation of long standing. Quite large doses of the bromides were administered with no results. The next day the bowels were very freely acted upon by an emulsion of ol. ricini, assisted by a copious enema. This was followed at night by thirty grains of chloral hydrate and forty grains of potassium bromide in two doses with an interval of half an hour. Several hours of sound sleep followed, the first for a week. The bowels were carefully regulated and kept so, and in a few nights natural sleep was obtained, the voices disappeared, and the asylum robbed of a patient. Five months have now elapsed, the patient is in her usual good state of health, and there has been no return of the hallucinations.

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

ANNUAL Meeting at Washington, September 18-20.

FIRST DAY.

DR. W. H. DRAPER, of New York, delivered the President's Address,

UPON THE RELATIONS WHICH SCIENTIFIC AND PRACTICAL MEDICINE BEAR TO EACH OTHER.

We may differentiate the science from the art of medicine, but we cannot practically dissociate them. In their ideal union they are interwoven like warp and woof, built into each other like foundation and superstructure. Scientific medicine, to be sure, is not always practical, but it is ever striving to become so; and practical medicine, though not always in a strict sense scientific, is constantly tending to that end. In medicine, perhaps, less than in any other department of human activity has the distinction between the art and the science been sharply drawn. In spite of this close mutual relation, the worker in the science and the worker in the art occupy essentially distinct positions, and the aim and the methods peculiar to each must be constantly kept in view. The one is a naturalist, the other an artisan. The facts of science are of no more use as materials for practical work than the ultimate elements of our food would be for nutrition; they must first be transformed into new combinations, and then pass through a series of more or less complex changes before they can be made to yield up the force which makes them a power for good and useful achievements. It is well to remember that in

one sense practical is always in advance of scientific medicine, and that in another it is always in its train. It is always in advance because it is ever referring new problems to science to solve; it is in its train, because it has continually to test and digest the theorems which science suggests for their solution. There is no better illustration of this statement than that which is afforded by the history of parasitism, the latest and most portentous contribution which science has made to the theory and practice of the healing art. The germ-theory of disease may be said to have reformed surgery, but it is not safe to affirm that it may not be forging new errors in diagnosis and beguiling us into dangerous paths in therapeutics. We may well believe that we are on the eve of momentous changes in the healing art, resulting from discoveries in bacteriology, but these changes must come mainly from the independent and judicious application of these new ideas to the study and treatment of disease by the practical physician at the bedside. Already the relations of bacteria to the pathology and treatment of fever furnish an illustration of the way in which clinical observation enlarges and complicates the problem which the pathologist has to solve. Until we know how fever is produced, and whether it is a salutary or a dangerous process, to be antagonized or let alone, we are really in no better position to treat fever rationally, than we were before the etiological relation of bacteria to fever was suspected. The fault of medical practitioners in the country is the failure to inductinate the principles and demonstrate the practice of clinical medicine, along with the purely scientific knowledge.

We must preserve science so as not to imperil the progress of art, and we must cultivate art as if science were not so much its mistress as its handmaid. We may wisely recall and apply the answer which Iphicrates, the Athenian general, is said to have made when he was hard pressed by an orator before the people to say what he was, to be so proud: "Are you a soldier, a captain, an engineer, a spy, a pioneer, a sapper, or a miner?" "No," said Iphicrates, "I am none of these, but I command them all." So the practical physician may not be a very learned pathologist, an erudite physiologist, a skillful chemist, or an expert bacteriologist, but he must command them all, and it is he who must finally, through the co-operation of all the sciences which they represent, perfect the most beneficent of all the arts; it is he who, in his high position as the servant of humanity, must attain that wisdom which results from combining knowledge with the instinct and the skill for its useful application.

DR. W. W. JOHNSTON, of Washington, read a paper on the

GEOGRAPHICAL DISTRIBUTION OF TYPHOID FEVER IN THE UNITED STATES,

which was based largely upon the answers returned from three hundred and fifty physicians in various parts of the country, and colored maps showing the distribution of typhoid and of malarial fever were exhibited. His conclusions were: (1) That typhoid fever has a much wider distribution in this country than is accepted by the majority of medical men, and that its prevalence is very great in all the regions reviewed in the paper. (2) That the varieties and modifications of type are very numerous, covering a wide range, and simulating types of malarial disease. (3)

That the prevailing type is without many, sometimes without any, of the more characteristic symptoms of the disease. (4) That the principal direction in which clinical study can be useful in the present state of our knowledge is in the collection of cases of undoubted typhoid fever; cases in which the diagnosis is made certain by characteristic symptoms, especially by post-mortem examination, in which there have been phenomena supposed to show malarial infection. (5) By the study of the localities of occurrence of such cases, by the finding of them, perhaps, in non-malarial regions, by the study of the blood and stool micro-organisms. (6) That no true progress can be made until the true value of the malaria-like symptoms is determined.

DR. STERNBERG urged the abandonment of the term "typho-malarial." In reviewing the army statistics he had noticed that "typho-malarial" fever had had a low mortality; he thought it difficult to understand how a complication could tend to diminish the severity of a disease.

DR. OSLER referred to the researches of Laveran, and their confirmation by various observers in different parts of the world, as proof that in the blood-changes we have the means of differentiating between a fever of a malarial and one of a typhoid origin.

DR. JAMES H. HUTCHINSON, of Philadelphia, read a paper on

THE MANAGEMENT OF THE STAGE OF CONVALESCENCE IN TYPHOID FEVER.

With return of the normal temperature, the physician is prone to overlook the danger. The authorities differ greatly as to the rules laid down for the management of this stage, some advising the administration of solid food. He favored the continued use of the milk diet with a little milk toast in convalescence, and at the end of two weeks butcher's meat. The only objections to be urged against the milk diet are the wishes of the patient and the tendency it occasionally has to produce constipation. Alcohol may be withheld in many instances; but, on the other hand, it may for the first time become necessary, and no doubt convalescence is often very much hastened by its use. Huxham's tincture he has found useful at this time, together with iron, and pepsin and muriatic acid. Severe cases should remain in a recumbent position for a week after the beginning of convalescence. At first the patient may sit up for a half-hour, the time to be gradually increased. Convalescent typhoid patients are more emotional than in health, and severe relapses may occur from mental excitement. It has been noticed at the Pennsylvania Hospital that after visiting days there is more or recrudescence of fever.

DR. PEABODY, of New York, did not believe that errors in diet were so frequently the cause of recrudescence as was formerly supposed. He was of the opinion that the ulcers had nothing whatever to do with the production of diarrhoea, a conclusion derived from the frequent study of cases at the autopsy-table.

DR. OTIS, of London, referred to a hospital case which ran the usual course up to a certain period in the convalescence, when an extraordinary range of temperature appeared for several days, with delirium and an abiding desire for food. The patient had been allowed milk and beef-ten, and for ten days two eggs daily. She was given boiled sole, and within twenty-four hours her temperature was normal, and conva-

lence was thereafter uninterrupted. We should study the individual as well as the fever.

DR. KINNICTT, of New York, remarked that he considered relapse to be very often the result of indiscretion in diet, and that therefore the old way of adhering strictly to a liquid diet was the best.

DR. GEORGE ROSS, of Montreal, read a paper entitled

SOME FORMS OF PARALYSIS AFTER TYPHOID FEVER.

It is not to be wondered at that the nervous system suffers after typhoid. The signs of exhaustion of the nervous system are constant, and generally in proportion to the severity of the fever. The nervous disturbance may be general, or some part of the spinal cord or some one or more of the spinal nerves exhibit altered functions. The nervous phenomena almost invariably are both motor and sensory; always in the case of spinal nerves, never in any of mixed. According to Nothnagel, the order of frequency of these affections is as follows: 1. Parts of one nerve, as the ulnar or peroneal. 2. Paraplegia, preferably of the lower extremities. 3. Less frequently, one extremity, either upper or lower, or two extremities in crossed order. 4. Simple alteration of sensibility. The history of a case of paraplegia resulting directly from typhoid fever and ending in recovery was given in detail, and also the history of a remarkable case which presented paralysis involving all the limbs, and, in addition, the muscles of the palate.

DR. ORD stated that he had seen many cases of peripheral neuritis, and also of paraplegia and protracted cases of difficult articulation. In one case there was not only the loss of speech, but also a loss of the power of remembering words.

DR. STARR thought it a legitimate question whether the neuritis may not be due to alcohol taken either during the course of the disease or previously. Again, cases of peripheral neuritis of one or two nerves may be due to pressure in consequence of position assumed.

DR. DELAFIELD remarked that we have the experience that the poison of infectious diseases produce, as do toxic minerals, acute degenerative processes. There is a variation as to which particular part of the body is affected.

DR. JAMES C. WILSON, of Philadelphia, presented a communication entitled

CASUAL THERAPEUTICS IN INFECTIOUS DISEASES.

The paper was based upon an experimental study of the effect of hypodermic injections of calomel in the treatment of five cases of typhoid fever, all severe, and three of pulmonary tuberculosis. In all there was a distinct amelioration of symptoms and a modification of the temperatures. The drug was given at intervals of four or five days.

DR. STERNBERG gave the results of a treatment of yellow fever that he had ventured to suggest while in Havana recently. The acidity of the contents of the stomach in this disease had led him to prescribe an alkali—bicarbonate of soda. He had received reports of thirteen cases treated by this method in Havana, and all had recovered. In regard to the constipation and the attendant rise in temperature in Dr. Wilson's case of typhoid, he stated that a species of bacillus present in the human intestine produces a fever-causing ptomaine. A rise in temperature may quite often be produced by them as by the specific germ.

DR. PEABODY had unsuccessfully used naphthaline during the last year in the treatment of typhoid.

DR. JACOBI extolled the bichloride treatment of diphtheria, and stated that he believes in no other way can the disease be so successfully handled.

SECOND DAY.—WEDNESDAY, SEPTEMBER 19.

DR. ROBERT T. EDES, of Washington, read a paper on

THE ABSOLUTE AND RELATIVE VALUE OF ALBUMEN AND CASTS, AND OF RENAL INADEQUACY, IN THE DIAGNOSIS AND PROGNOSIS OF DISEASES OF THE KIDNEY.

The term albuminuria has held a place in medical nomenclature, until comparatively recently, synonymous with Bright's disease. Dr. Munn's observations were cited to show that many cases of intermittent albuminuria, when followed out carefully, are found to have developed Bright's disease. Four of Dr. Munn's sixty-nine cases died within three years. Many such are met with in business men of middle-life, and of overweight. The great diagnostic significance of casts and their variety, was next touched upon. A question of the greatest interest is, whether we can detect a pathological condition of the kidney in the diminution of any of the constituents of the urine. Long after the presence of kidney disease is established, the daily quantity of urea excreted may be far above the physiological limit. A very badly damaged kidney may, in fact, get rid of a large quantity of urea. In conclusion, numerous tables of statistics, bearing upon the question of albuminuria and the secretion of urea, were presented.

DR. JANEWAY followed with a paper on the same subject. If we consider first the diagnostic importance of albumen, we are forced to state that, from various circumstances, it is apt to be overrated, and, taken by itself, to be by its presence, or its absence, extremely misleading. Particularly is this true of examinations of single samples of urine, or even of one, or of several days' urine, provided such days are not close together, or, on the other hand, sufficiently separate. Cyclical, or intermittent, or functional albuminuria is the most interesting of the possibilities. In these cases, the albumen being generally present in the daytime and absent at night, is apt to be overlooked by those who examine only the night and morning urine, and detected by those who examine urine passed in their presence, as at the time of an office visit, or in examination for life insurance, or by those making a study of the urine of a large number of individuals. Mistakes are especially liable to occur between this form and those cases of chronic diffuse nephritis which are attended by the intermittent appearance of albumen. An occasional occurrence of a hyaline cast cannot be considered as proof of chronic renal disease, as against cyclic albuminuria. Such casts the writer has seen occur in two cases at considerable intervals, the urine not having shown them at a number of previous nor subsequent examinations. So, too, while ordinarily the percentage of albumen is small, yet in some instances it is large, in one case under the writer's observation reaching twenty-five per cent. by bulk, moist. Neither does the age limits usually set always hold. In one instance functional albuminuria was observed in a child of five years.

DR. JAMES TYSON, of Philadelphia, presented a communication entitled,

THE RELATION OF ALBUMINURIA TO LIFE INSURANCE.

No system of life insurance is perfect which does not include those who are apparently healthy and those who are not. Certain applicants presenting themselves for examination for life insurance are wrongfully rejected, because of the presence of albumen in the urine. The reader mentioned the following conditions which if observed by competent and well-trained observers, if it were always possible to get such, would enable the companies to save these risks. These are:

- (1) The applicant must in all other respects present the signs of good health.
- (2) The albuminuria must be unaccompanied by tube-cast, however perfect may be the health in other respects; albumen and tube-casts conjoined always meaning structural changes.
- (3) The specific gravity of the urine, that is, the "real" specific gravity (that of the quantity for twenty-four hours), should not be lower than 1.015-1.025. Great care must be taken to secure the "real" specific gravity, as it would be unfair, to reject the candidate on account of the specific gravity of a single specimen.
- (4) The signs of hypertrophy of the left ventricle, and the existence of high vascular tension associated with albumen, would exclude the candidate.
- (5) The age of the applicant is a highly important consideration. It is doubtful whether any person forty years of age with functional albuminuria should be accepted, unless at least he has been long under the observation of a competent and conscientious examiner.
- (6) The presence of true gout in any case should decide against the person, because gout is always, sooner or later, followed by interstitial nephritis. Finally, retinal changes such as are associated with nephritis, should exclude the applicant. The absence of the albumen from the urine passed on rising in the morning is an important aid in the diagnosis of functional albuminuria, but not an essential one.

Dr. JACOB reminded the members of the Association of an anatomical fact, which is an explanation of the presence of albumen in the urine of children. There is, at the very beginning of their existence, a discrepancy between the growth of the renal arteries and the growth of the tissue of the kidney. Besides, the capillaries of the kidneys do not permit of the passage of the same quantity of water through them as in adults. Thus there is disproportion.

Dr. PYE SMITH, of London, preferred the term "functional" to any of the other names given to this condition. At the present day there is no physiological ground for believing that the healthy kidney secretes albumen at all. With respect to the tests for albumen, he stated that he had come back to the old test of heat and nitric acid, in suitable proportions.

Dr. A. L. LOOMIS, of New York, read a paper on
THE CARDIAC CHANGES IN CHRONIC BRIGHT'S DISEASE.

He considers that it is a failing and a hypertrophied heart which is to be found in Bright's disease, as in other diseases. Authorities discuss a hypertrophied heart as though of the utmost importance, and make little or no reference to cardiac degeneration in its relation to the cardio-vascular changes in chronic Bright's disease. He then briefly stated Cohnheim's theory, namely, that the circulation in the kidney, as in all other glands, varies with the demand upon their functional activity. Circulation through the kidney varies directly with the proportion of the parenchymatous

elements of the kidney and the excrementitious elements in the blood. Any diminution in the glandular tissue of the kidney at once raises the ratio between the excrementitious materials and the functional powers of the kidney. As a result, when the renal functioning power is lessened in connection with retention of excrementitious materials, the systemic forces generally are projected upon the kidney, in order that the total elimination may remain undiminished.

We thus have two widely different conditions tending to produce arterial tension—conditions which may act singly or conjointly, and affording a rational explanation of the varying amount of cardiac hypertrophy found in apparently similar renal conditions: *First*, a general and primary arterial sclerosis, to which both the cardiac and renal changes are secondary; and, *second*, arterial, as well as cardiac hypertrophy, which are compensatory and conservative, as is cardiac hypertrophy in aortic lesions.

In summing up authorities, while most of the theories, as well as clinical evidence, thus adduced seem to be directed to establishing a cause for the arterial change and increased tension, it was claimed that many of the facts presented support this proposition; that degeneration of the heart-walls, with dilatation of the heart-cavities, are the most frequent and, perhaps, the characteristic cardiac changes in chronic Bright's disease. He then presented observations made in a series of cases, and reached the following conclusions: As a rule, the more extensive the obliterating changes in the renal arterioles, the greater the degree of cardiac hypertrophy. In two cases where the cardiac hypertrophy was greatest, the only change found in the kidneys was obliterating arteritis in the arterioles. In other varieties of Bright's disease the heart changes seem to be directly dependent upon the renal disease, or rather, upon the toxemia and faulty nutrition which result from them. In all cases of chronic Bright's disease, increased arterial tension and compensatory hypertrophy are present some time during their course; but when the time is reached at which the renal symptoms clearly establish an interference with the function of the kidney, a feeble heart-action and diminished arterial tension will indicate degenerative cardiac changes. The cases gave no evidence of acute endocarditis secondary to renal disease, but chronic endocarditis was present in seven cases. Where a systolic murmur was heard during life, accompanying a sudden cardiac dilatation, the autopsy gave no evidence of mitral disease; that rheumatic valvular disease may remain latent for many years, but when Bright's disease is developed in such cases heart insufficiency is immediately developed. His cases gave no evidence that valvular lesions occurred secondary to kidney disease. He presented the statistics of Bellevue and Roosevelt Hospitals, showing that in a total of 164 cases, 43 were complicated by Bright's disease secondary to the valvular disease. The result of the studies seems to indicate that the cardiac changes in chronic Bright's disease have a wide range of variation, and that we cannot predict with certainty the exact nature of the changes which may be present in any given case, except that possibly they are degenerative, and that sooner or later a condition of heart-failure will be reached which may fairly be designated as a Bright's heart. The more marked these are in any case, the more unfavorable the prognosis. We must regard

Bright's disease as a constitutional disease, in which the repair and waste in all the tissues of the body are imperfectly carried on, and in one way or another the kidney changes are expressive of other visceral and arterial changes, which, combined with the kidney lesion, make up the clinical and pathological history of the disease.

DR. DELAFIELD objected to two of the propositions advanced by Dr. Loomis as counter to his experience: first, the proposition that cardiac hypertrophy is often developed without any change in the kidney, except in its arterioles; second, that the morbid changes in the glandular structure of the kidney are usually associated with changes in the cardiac walls.

DR. PEABODY spoke of the frequency with which the heart is not hypertrophied in well-marked cases of chronic diffuse nephritis. His remarks were based upon a study of two thousand consecutive autopsies performed in the New York Hospital. Perhaps in thirty per cent. of the cases no atrophy of the heart had been noticed.

DR. SAMUEL C. CHEW, of Baltimore, Md., followed with a paper on

THE RELATION BETWEEN CHRONIC INTERSTITIAL NEPHRITIS AND ANGINA PECTORIS.

DR. DA COSTA, of Philadelphia, Pa., presented a paper on

THE TREATMENT OF VALVULAR AFFECTIONS OF THE HEART.

He began with a reference to the prevailing ideas on the treatment of these affections. The presence of a valvular affection is not the key-note to be taken. The indications on which the true treatment should be based are: 1, the state of the heart-muscle and heart-cavities; 2, the rhythm of the heart; 3, the condition of the arteries and veins of the body; 4, probable length of disease; 5, the general health of the patient; 6, the secondary results of cardiac affection.

DR. G. BAUNGARTEN, of St. Louis, Mo., read a paper on the

DISTURBANCES OF THE HEART-RHYTHM, WITH REFERENCE TO THEIR CAUSATION AND THEIR VALUE IN DIAGNOSIS.

By itself, the condition of irregularity of the heart-rhythm may be considered to be of no great significance, but it is far otherwise when taken in connection with other things. It is desirable to group cases according to the forms of irregularity. These are, 1, mere fluctuation variations; 2, variations in frequency, as well as in amplitude; 3, comprises all cases of intermittent, deficient, alternating, and bigemious rhythm. The conditions producing arrhythmia of the heart are: 1, affection of cardiac centres in the medulla; 2, reflex influences; 3, the action of drugs on the nervous apparatus of the heart; 4, changes in the heart itself (this class constitutes the majority of the cases); 5, deficient blood-supply; 6, dilatation from heart strain. The condition is more likely to arise in insufficiency than in stenosis of the valve. In sclerosis of the coronary arteries we also have a condition producing arrhythmia.

THURSDAY, SEPTEMBER 20TH.—THIRD DAY.

DR. EDWARD C. SEGUN, of New York, read a paper on

THE RELATION BETWEEN TROPHIC LESIONS AND DISTURBANCES OF THE NERVOUS SYSTEM.

He divided the so-called "trophic lesions" into two great classes. In one the lesions are probably mostly due to the action of extraneous causes, and are preventable. The second class embraces lesions which seem to be directly due to the nervous disease, and which are its necessary and unpreventable results.

He endeavored to show that lesions of the second class, which alone merit the name of *trophic lesions*, occur in organs and tissues which are anatomically continuous, and whose life (or preservation of structure and function) is associated or interdependent.

He concludes that disease of the nervous system produces true trophic lesions when it interferes with the associated or interdependent life of continuous tissues. This proposition he offered only as a partial and preliminary answer to the question under discussion.

DR. HORATIO C. WOOD, of Philadelphia, followed with a paper on the same subject. His propositions and conclusions were as follows: (1) It is physiologically proven that the nervous system directly affects general nutrition; (2) various lesions are the immediate result of previous nerve disease; (3) in various cases the lesions are not preceded by circulatory disturbance; (4) no known vaso-motor condition is capable of causing many of these lesions; (5) therefore it is absurd to attribute changes to preceding vaso-motor changes.

DR. ORD, of London, stated that these so called trophic disturbances might be produced in three ways: (1) through disease of the spinal cord; (2) through disease of nerves; (3) in a reflex way. In illustration he mentioned a case of chronic hypertrophic cervical pachymeningitis in which there was a wasting of the tissue in the digits of the affected arm, and osteoarthritis; also the case of a man who, through violent exercise, had lost power in his arms, and whose muscles underwent extreme wasting. There was also wasting of the skin. In conclusion, Dr. Ord spoke of the swelling of the joints of women approaching the climacteric. Various other reflex disturbances were referred to.

DR. HENRY P. BOWDITCH, of Boston, considered that much might be gained by studying the subject on simpler lines; that, therefore, it would be well to limit the question to a consideration of its relation to muscles, for in muscles we have not two sets of nerves anatomically distinct, at least such are not demonstrable; we have not the "anabolic" and "katabolic," or "metabolic" nerves. It would be better to confine the term "trophic" to nitrogenous metabolism of muscle.

DR. FERRIER, of London, said that the nervous system has a direct influence on the nutrition of tissue, altogether apart from vaso-motor influence. The influence of nerves is amply demonstrated in the case of muscles; whether it be in the case of the skin is not so certain. Possibly there are centres which preside over nutrition. It is an interesting question whether there are "trophic" nerves apart from motor and sensory.

MR. VICTOR HORSLEY, of London, called the attention of his hearers to the recent and interesting investigations of Dr. Frederick Mott, to whom belongs the credit of being the first to show that atrophy is a

true active dystrophy and not a mere passive change. By cutting of the cauda equina he demonstrated an atrophy of the femur. The whole of its inner surface was lined with osteoclasts.

Dr. W. H. WELCH reported the results of experiments relating to the

THYROID GLAND OF THE DOG,

performed by Dr. W. S. Halsted in the Pathological Laboratory of the Johns Hopkins University. Extirpation of both lobes of the gland of the dog was found to be uniformly fatal in from two days to three weeks, with symptoms similar to those noted by previous experimenters. A large number of experiments were performed to test the remarkable statement of Munk that these symptoms and the fatal result are not due to the loss of the thyroid gland, but are referable to some undefined injuries attending the operation of removal. Munk found that eight dogs survived the isolation of the gland by ligation of all the arteries and nerves entering it, provided the wound healed by first intention. In the experiments reported by Dr. Welch, with strict antiseptic precautions, the two lobes of the gland were isolated, and all their vascular and nervous connections ligated. Under these circumstances the gland underwent coagulation-necrosis, and although in eight cases primary union of the wound was obtained, the animals died with the usual symptoms of extirpation of the entire gland. These results, therefore, are directly opposed to those reported by Munk.

In order to determine whether, after complete separation of the gland from all of its vascular and nervous connections, the gland could by any possibility escape death, a single lobe was isolated in a large number of cases in the manner described. In all instances, however, necrosis of the gland ensued, and at the most a few follicles in the periphery of the gland escaped destruction.

Extirpation or isolation of one lobe of the thyroid gland, in the majority of cases, is followed by the full recovery of the animal without any of the symptoms peculiar to complete extirpation. In these cases of partial extirpation very interesting and peculiar changes appear in the remaining lobe. These changes, which have been in part mentioned by Mr. Victor Horsley, but not described in detail, were exhibited in a series of microscopical specimens.

Dr. Welch believed that while these changes were probably to be interpreted as functionally of the nature of a compensatory hypertrophy, the term hypertrophy did not fully characterize the anatomical condition. These changes, resulting in a transformation of the normal structure of the adult gland, may perhaps be best interpreted as a return to the embryonic state of the gland.

In seven or eight cases out of fifty unilateral extirpations death occurred within a month, without any complications to explain this issue, and with primary union of the wound. The animals became weak and cachectic, had often ulcerations of the gums, and in two cases convulsions. In these fatal cases the follicles of the remaining lobe were found nearly or quite devoid of colloid material, and filled with small oval or polyhedral epithelial cells, without regular arrangements, and without new formation of capillaries. Small-celled infiltration of the interstitial tissue was absent.

In two cases, after ligation of everything entering two lobes of the gland, except the main artery and vein, changes were found similar to the hypertrophic ones already described. Both cases developed symptoms like those of total extirpation. One terminated fatally in two months, the other recovered. These cases suggested the possible dependence of the anatomical alterations upon changes in the nerves supplying the glands.

Dr. JACOBI, of New York, read a paper on

THE PATHOLOGY OF THE THYMUS GLAND.

Because of the great length of the paper only a few extracts were given. The literature of the thymus for the last ten or twenty years treats more of its histology and embryology than of its pathology. The author referred to the fact that there is no certain size of the thymus; that indeed a great many different sizes and weights have been taken to be normal by different writers. Dr. Jacobi referred to the very doubtful connection between an alleged hypertrophy of the thymus and a so-called laryngismus stridulus. Still he admitted there are a few cases in which the sudden death of infants could not be explained any better than by the hypertrophy of the gland. Briefly he alluded to inflammations and suppurations of the gland, and to the occurrence of punctated or larger hæmorrhage into the tissue, and to the occurrence of malignant growths in the organ. Among them he mentioned endothelioma, lymphoma, fibroma, sarcoma, carcinoma, and myxoma, which have been described; the majority of them, however, are decidedly doubtful, particularly because it can be proven that a number of these pseudo-plasms did not originate in the thymus, but in the thyroid gland, or in a neighboring lymphatic gland. For the last eight months he had given his particular attention to the study of the thymus, with regard to tuberculosis, syphilis and diphtheria.

In cases of tuberculosis of the thymus presented, tubercle tissue appeared in the following forms:

(1) As miliary tubercles, composed entirely of small, round, or polygonal cells, with a reticulum basement substance in the recent state. In the later stages these miliary tubercles or granula may, at their centres undergo cheesy metamorphosis (coagulation necrosis).

(2) Miliary granula are also found which show, in their centres, the presence of giant cells.

(3) Large, cheesy areas, in the periphery of which we still find miliary tubercles, or granula, composed of giant cells, around which are arranged spheroidal or polygonal cells in a fine reticulated basement substance.

(4) In all cases the arteries of the adjacent areas of the thymus tissue were the seat of a typical endarteritis (in some cases obliterating) of a tubercular character.

(5) A very careful and painstaking examination of the above forms showed tuberculosis present in all cases. In most of the above forms we had also the presence of the bacillus in the walls of the arteries and arterioles undergoing tubercular changes, and the lumen of the vessels was the seat of obliterating changes.

(6) In the thymus, tuberculosis may appear simply as so-called tubercle tissue, an infiltration of the tissue of the gland or organ with spheroidal or polygonal cells, held together by a delicate basement sub-

stance; this tissue has no characteristic arrangement; the arteries in such areas may be the seat of obliterating processes. In all of the cases examined by us there were present the characteristic bacillus tuberculosis.

Syphilis results in the thymus in two changes, both in the accumulation of hyperplastic connective tissue, and, as in one case, in the formation of a gumma. Diphtheria results in general parenchymatous degeneration.

The time allotted to the paper was mostly taken up by the demonstration of frozen sections illustrating the normal topography of the thymus; also of photographs of the same, and of microscopical drawings of the pathological changes.

DR. GEORGE M. STERNBERG, U. S. A., did not read his paper on

RECENT RESEARCHES RELATING TO THE ETIOLOGY OF YELLOW FEVER,

but described the method followed in these researches, which were carried on at Havana, and stated that he had not arrived at any definite result as to the specific etiological element of yellow fever. He had made many cultures from the blood of persons just dead of this disease, as well as from the liver, kidneys and urine. The results were negative as regards those made from the blood and urine. From the kidneys and liver numerous organisms were obtained, but in no instance did he obtain the micrococcus of Freire. Various tubercles were shown.

The Society then adjourned.

AMERICAN NEUROLOGICAL ASSOCIATION.¹

FOURTEENTH ANNUAL MEETING.

SECOND DAY. — AFTERNOON SESSION.

DR. J. H. LLOYD, of Philadelphia, read a paper on
A CASE OF FOCAL EPILEPSY SUCCESSFULLY TREATED BY TREPHINING AND INCISION OF THE MOTOR CENTRE.

The centre for movements of the arm, in which the spasm began was uncovered, the exact centre found by faradism, and then excised. Three months later there had been no return of the attacks.

DR. JOHN B. DEEVER, of Philadelphia, who was present by invitation, gave an account of the methods of performing the operation.

PROF. DAVID FERRIER, of London, said that it was too early to say that the patient was cured. He had been rather disappointed in his own results in cases of true focal Jacksonian epilepsy, where, after excision the attacks had been much the same. He mentioned a case of focal epilepsy with a history of trauma where trephining had been performed without advantage. Later, Horsley had trephined again and excised a portion of the cortex, but the fits persisted. This showed the great risk of setting up a convulsive habit, and was an argument in favor of early operations. He asked if the paresis continued between the attacks. On receiving an affirmative answer he said that that was indicative of an organic lesion rather than of a post-epileptic hemiplegia. Cases with organic lesion did better. He spoke of a patient who had

three thousand fits in fourteen days. Horsley removed a cicatrix and there had been no return of the fits for three years. He doubted the value of excision where there was no organic lesion. It was of interest to note in Dr. Lloyd's case that sensibility was not impaired except for the perception of form and movement, which showed a loss of muscular sense, but not of tactile sense.

MR. VICTOR HORSLEY, of London, said that in one case, after operating, the patient recovered his mental health which had been much impaired, and went for three weeks at a time without a fit, which was a distinct gain. Another patient went without a fit for two years, then, three months ago, he had two, and had had none since. He did not want to give a positive opinion in regard to the recurrence until after five years. Freedom from epilepsy for one or two years had restored mental power and the ability to make a livelihood. There was no danger from faradic stimulation of the brain. The muscular sense is equivalent to the sense of moving and having moved. We may lose the memory of having moved, but the appreciation of the condition of moving exists. In testing this we should always seize the segment on the sides, not on the front and back. He cut his flaps now with the convexity upwards and backwards. In cutting with the convexity downwards the epidermis came away. Intermittent irrigation had been proven to be useless.

DR. W. W. KEEN, of Philadelphia, said that he had used the spray once but not since, and that he had not regretted giving it up.

DR. L. C. GRAY, of New York, said that in idiopathic epilepsy the interval between the fits differed enormously; in one case the interval had lasted ten years. Reflex epilepsy may recover quickly when the cause is removed, or may persist. He trephined a patient once, without excision, and obtained a respite for four months, when the fits returned worse than ever. He once operated without antiseptic precautions, acute encephalitis followed, and the brain was found honey-combed with pus.

DR. C. L. DANA, of New York, asked if there were not some sensory disturbances in Dr. Lloyd's case. There had been nothing like an aura since. To produce sensory disturbances we must destroy a large area, and the parts excised were neither large nor deep.

DR. C. K. MILLS, of Philadelphia, said that true tactile sensibility was unimpaired. The differentiation of two points was very uncertain for fine work, depending so much on the personal equation. Dr. Lloyd's patient recognized the slightest touch or breath, but objects of different shape were not recognized, owing to the impairment of the muscular sense.

MR. HORSLEY, said that it was well to have the patient indicate with his other hand the point touched. There was often confusion because anaesthesia occurred in Charcot's segments, and it disappeared by segments downwards. One patient, while recovering, located a touch on the phalanx above.

DR. E. C. SEGIN, of New York, spoke of the case recently reported by Dr. Weir and himself. The tumor measured twenty mm. in diameter, and a portion of cortex an inch in diameter and involving the subjacent white matter was removed. The tumor was in the end of the left second frontal and in the precentral gyrus. The patient has had con-

¹ Concluded from page 330.

vulsive seizures since, beginning in the right arm and cheek. There was now rather more paresis. There was distinct tactile anæsthesia in the hand, forearm and cheek, but other forms of sensibility seemed unaffected. There was also loss of taste on the right side of the tongue. In answer to Professor Ferrier he said that the sensibility of the leg was normal.

DR. LLOYD said that there was some degeneration of the cells in the part excised. In testing the sense of locality the patient mistook the fingers touched. Why is there a pronounced sensory aura in lesion of the motor centres? This looks as if there might be sensory areas in the motor cortex.

DR. JAMES J. PUTNAM, of Boston, read a paper on

INFECTIOUS NEURITIS.

The patient was a man of twenty-eight, with a good previous history except that he had a nervous temperament. After exposure he was taken with pains in the back and limbs, and loss of power. There was great tenderness over the nerves but no special impairment of sensation. There was no high temperature. At the autopsy the spine was found much enlarged, and nodular hæmorrhages were found in the lungs. In the nerves, of which specimens were shown, the myelone was changed and swollen, the axis cylinders were in part normal and in part destroyed. There was an infiltration of cells about the nerves, with granular masses and spindle-cells; there were only one or two Mastzellen. In other nerves the axis cylinders were enlarged, atrophied, or even wanting. Swelling was common about the fibre, generally about Ranvier's nodes. In the cord the nerve roots were infiltrated. In the medulla there were slight capillary hæmorrhages and congestion in the neighborhood of the vagus nucleus. It is possible that later on a poliomyelitis may have developed. The nature of the process was acute. Neuritis was of toxic origin, from the bacteria of constitutional disease, metals, or other poisons. An infectious origin was possible as there was no history of tubercle.

DR. S. G. WEBBER, of Boston, said that in a paper read before the Association four years ago he reported the autopsies on two cases that had died at the Boston City Hospital from failure of respiration, one of them having inhalation pneumonia. At that time he undertook various experiments to excite neuritis artificially in animals. In these experiments the changes were most marked in the early stages at the constriction of Ranvier, and in one of the autopsies, where almost all the nerves were examined, the changes in the nerves only slightly affected were seen at the same place. At that time, the question of traction in the removal of nerves had not been considered. In almost all the nerves a few of the finer fibres remained intact. At the same time that neuritis was so common in Boston there was an epidemic among horses characterized by similar symptoms.

DR. PTE SMITH, of London, said that most cases did well, and hence autopsies were rare. He asked if here, where gout is rare, was gout, without alcoholism, a cause of multiple neuritis. What was Landry's paralysis? Verified cases were hard to find.

DR. J. VAN BIBBER, of Baltimore, mentioned a case of multiple neuritis with difficult breathing from implication of the facial nerve.

DR. DANA said that while local neuritis from gout was common, multiple neuritis from gout was un-

known. Neuritis from rheumatism was not very uncommon.

DR. PUTNAM agreed with Dr. Dana about gout as a cause of neuritis, and asked an explanation of the pulmonary hæmorrhages.

DR. WEBBER said that they had not occurred in his cases, perhaps because the vagus was not involved.

DR. SEGGIN showed specimens of nerves from a case of tabes dorsalis reported by Dr. Shaw last June.

A paper by DR. BURT G. WILDER, of Ithaca, on

THE RELATION OF THE THALAMUS TO THE PARACOELE (LATERAL VENTRICLE), WITH COMMENTS ON OTHER MATTERS SOMETIMES MISUNDERSTOOD, was read by title.

The following officers were elected: *President*, Dr. E. C. Seguin, of New York; *Vice-Presidents*, Dr. Philip Zenner, of Cincinnati, Dr. C. L. Dana, of New York; *Secretary and Treasurer*, Dr. Graeme M. Hammond, of New York; *Council*, Dr. James Hendrie Lloyd, of Philadelphia; Dr. M. Allen Starr, of New York.

THIRD DAY. — THURSDAY, SEPTEMBER 20TH.
MORNING SESSION.

DR. G. L. WALTON, of Boston, read a paper on

DISLOCATION OF THE CERVICAL VERTEBRÆ; FIVE CASES; SPONTANEOUS RECOVERY.²

DR. WEBBER mentioned a case of probable dislocation where a man struck his shoulder, which was followed by partial paralysis of the legs, and later, of the arms, with pain in the arms. Later on he could move his legs, but the arms remained partly paralyzed for some time. It was thought that the nerve-roots were affected, rather than the cord.

DR. GRAY spoke of a case of dislocation with displacement into the pharynx, where there was paresis of the legs and impairment of deglutition. It was reduced without any snap, but the patient went out of the hospital and fell and re-dislocated it. This time the vertebra went back with a snap, and there was no subsequent trouble.

DR. PUTNAM asked if, in the last case reported, there was a hæmorrhage into the nuclei of the hypoglossal and glosso-pharyngeal, or injury to the nerves.

DR. WALTON believed that the hæmorrhage was more probable, as it was hard to imagine pressure on those nerves without pressure elsewhere.

DR. H. M. BAXISTER, of Kankakee, spoke of a case of probable pachymeningitis where there was complete atrophy of one-half of the tongue.

DR. LANDON CARTER GRAY, of New York, read a paper on

A TYPICAL CASE OF DISSEMINATED SCLEROSIS, WITH A POST-MORTEM SHOWING ONLY LEPTOMENINGITIS CEREBRI.

The patient was a man of thirty-five, who presented all the symptoms of typical disseminated sclerosis. Drs. Sachs and Starr coincided in the diagnosis, and the man had been shown to various classes as a typical case. There was intention tremor, jerky movements, nystagmus, scanning speech, apoplecticiform attacks, and gradual dementia. There were no patches of sclerosis, but there was lepto-meningitis. There were slight changes in the nerve-fibres in the subjacent

² To appear in this Journal.

white substance. Koenig had reported a similar case. In disseminated sclerosis, the tremor was thought to be due to lesions of the cortex or of the conducting fibres below.

DR. WEBBER thought that in typical disseminated sclerosis convulsions were rare. He mentioned a case which seemed in some respects like *tabes dorsalis*. Various delicate movements were performed without tremor. The autopsy showed patches of sclerosis in the cerebrum, pons, and cord.

DR. BAXXISTER thought tremor was due to trouble of conduction, rather than of origin of movement in the cortex. Why might not this case be regarded as an anomalous form of general paralysis.

DR. E. D. FISHER, of New York, said that disseminated sclerosis began earlier than general paralysis. He spoke of a case of general paralysis of nine years' duration, where there was marked tremor constantly, which was increased on intended movements. There were ataxia, exaggerated knee-jerks, and epileptiform seizures or maniacal attacks, followed by paresis. Both disseminated sclerosis and general paresis were attended with convulsions. In the former there was no tremor, except on intended movements. The peculiar facial expression and the scanning speech were important in diagnosis.

DR. MILLS said that an analysis of symptoms was necessary. Voluntary motion is steady because there is no impairment of conduction. When the disseminated sclerosis is in the sensory tracts there is no tremor; when it is in the motor tracts conduction is impaired. In meningitis, we get tremor by interference with the initiation of cortical motor impulses.

DR. PUTNAM asked if the varicosity of fibres in the brain found in Dr. Gray's case had any relation to the symptoms, or if it was an artificial product.

DR. GRAY said that this varicosity had not been found in the normal brain, in *tabes dorsalis*, or in cerebral syphilis.

DR. PUTNAM had seen a form of intention tremor in cerebro-spinal meningitis.

DR. GRAY said that the differential diagnosis was very difficult. In general paralysis leptomeningitis was a slight factor, and there were even cases where the pia mater was unaffected. It was an interstitial encephalitis, and not a meningo-encephalitis. We cannot point out the symptoms of lepto-meningitis as yet. Apoplectic attacks are common in disseminated sclerosis.

DR. BLACKBURN, of Washington, exhibited by invitation some preparations of the brain. The brain was hardened in the usual way in Müller's fluid and alcohol, and then soaked in a solution of Japan wax, which is a concrete oil, and chloroform. It was then put into melted wax, and, when cooled, it made a firm, hard body, which was of great value in demonstrating the gross anatomy of the brain, the convolutions, etc.

DR. F. X. DERGUM, of Philadelphia, then read a paper by DR. S. WEIR MITCHELL, of Philadelphia, on

ANEURISM OF AN ANOMALOUS ARTERY, CAUSING ANTERO-POSTERIOR DIVISION OF THE OPTIC CHIASM AND BI-TEMPORAL HEMIANOPIA.

The patient's illness began with weakness of the right leg, diminution of the field of vision toward the left in the left eye, and later toward the right in the right eye. Later on, the left papilla began to atrophy.

There was a little headache, running rapidly into coma and death. The autopsy showed an aneurism an inch in diameter, completely dividing the optic chiasm. Outside of this tumor ran soft, shredly portions of the optic nerves. The anterior communicating artery of the circle of Willis was absent, and the two carotids ran into the aneurism. The aneurism and the arteries of the circle of Willis were shown.

DR. FREDERICK PETERSON, of New York, read a paper,

A CONTRIBUTION TO THE STUDY OF MUSCULAR TREMOR.

Some fifty tracings of various tremors made by Edwards's sphygmograph were exhibited. The tracings were made from patients with various diseases. The rate of oscillation was found to be from 3.7 to 5.8 per second in paralysis agitans; 4.6 to 6.3 in disseminated sclerosis; 8.7 to 12 in exophthalmic goitre; 7.6 to 7.8 in hysterical tremor; 8.5 to 11.2 in alcoholism; 7.4 in neurasthenia; 5.6 to 6.8 in delirium tremens. Tracings of ankle clonus were also shown. He could not yet state the value of this method for diagnosis. Tremor was thought to be of cortical origin.

DR. WHARTON SINKLER, of Philadelphia, asked if the writer had taken simultaneous tracings of ankle and patellar clonus.

DR. PETERSON said that he had not, and then explained the methods employed.

DR. HARE, of Philadelphia, explained an apparatus that he had used with Dr. Weir Mitchell, and said that it was extremely difficult to get accurate tracings of tremors.

THIRD DAY. — AFTERNOON SESSION.

DR. PHILIP COOMBS KNAPP, of Boston, read a paper on

SOME POST-HEMIPLEGIC DISTURBANCES OF MOTION IN CHILDREN.*

DR. J. H. LLOYD read a paper on

THE REPORT OF A CASE OF TUMOR OF THE CERVICAL SPINE.

DR. JOHN B. DEEVER read a supplementary paper on

THE SURGICAL REPORT OF THE OPERATION.

DR. E. O. SHAKESPEARE, of Philadelphia, gave an account of the pathological changes found in the case.

DR. MILLS said that it was difficult to make a focal diagnosis in this case. There was paralysis without trophic changes or reaction of degeneration. Pain was hardly a focal symptom. So complete a paralysis of the arm and leg with no facial paralysis might point to the cord. The case was of physiological interest as showing a lesion of the anterior cornu. The questions that arise in such cases were, Should we operate? and could we get at the lesion?

DR. DERGUM asked the relation of the changes to the symptoms, a point which he thought was left unexplained.

DR. LLOYD said that the case looked at first like an ordinary hemiplegia, but the history showed the difference. The cerebro-spinal axis was normal except at this point, and here there was osteitis, pachymeningitis and hæmorrhage or hæmorrhagic myelitis in the anterior cornu.

* To appear in this Journal.

Dr. WHARTON SINKLER, of Philadelphia, read a paper on

HEREDITARY CHOREA.

The writer gave an elaborate account of the history of the disease, showing that Duglison, in 1844 (instead of Huntington, from whom the disease gets its name), was the first to describe cases in Long Island, where it was called megrims. In 1863, Lyon also described cases, nine years before Huntington's paper appeared. An exhaustive review of other reported cases was given. Two cases were reported, one in a family where it could be traced back three generations, appearing generally at the age of thirty-five, and the other in Pennsylvania in a family where hereditary chorea had been known for years. It was regarded as a distinct affection and its main distinguishing features were heredity, an onset between thirty-five and forty, and the fact that it was incurable and often attended with mental symptoms. If it skips a generation, it may reappear and it may begin before thirty-five.

Dr. KNAPP spoke of a case of chorea in a woman which resembled hereditary chorea in some respects. She came to him for some other trouble, but she had had violent choreic movements for about twenty-five years, coming on about the age of twenty. She was married, had a family, and had worked hard all her life. There was no heredity or mental impairment. Physical examination revealed nothing important. Her children did not have either this form or Sydenham's chorea. Treatment was unavailing.

Dr. MILLS spoke of a case of chorea in a woman forty-one, which began in the hand and tongue and spread to other parts. Her father had a similar trouble, and her child, two years old, had peculiar choreic movements.

Dr. GAY, of London, said that there was a disease in horses where the horse rotates and falls, which is called "megrims."

Dr. E. N. BROWN, of Philadelphia, said that in Long Island, where this affection seems to be common, they say when a man is angry he has the "megrims."

Dr. PITMAN said that the affection in horses was known here as blind staggers. Megrim is a common name for various disorders.

The names of Prof. David Ferrier and Mr. Victor Horsley were proposed for honorary membership, after which the meeting adjourned.

THE ABSINTHE FIEND.—The celebrated absinthe factory of Pernod was recently sold to a M. Picard for 5,500,000 francs (about \$1,045,000) cash. This factory turns out daily 1,000 cases, of one dozen quart-bottles each, of absinthe. The greater part of this is consumed in Paris and the larger cities of France, the army officers being the greatest users of the poisonous compound.

—"What kind of moral discipline is to be expected from a mother who, time after time, angrily shakes her infant because it will not suckle her, which we once saw a mother do?" Thus asks Herbert Spencer. The mother's course seems to have been quite unjustifiable, especially if, as we have always supposed, it is the duty of the mother to suckle the child, and not of the child to suckle the mother.

THE BOSTON

Medical and Surgical Journal.

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THE INDEX CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, NUMBER IX.

ANOTHER volume of that wonderful Index has just been issued, making the ninth, and including words from Medicine (popular) to Nywelt. The whole number of author titles has reached 100,130. Of the subject titles, the book titles have reached 93,154, and the titles of journal articles have reached 307,331. A second addition is made to the abbreviations of titles of medical periodicals employed in the catalogue, which covers a dozen pages. These titles are not all of new publications, though a very large proportion of the twelve pages represent new journals.

It is almost inevitable that one should run across the title *museum* in turning the pages of this new volume, and, with the remembrance of the address of the President of the late Medical Congress in his mind, should pause to see what sort of material the library presents on that subject. Some five and a half pages are covered by the list of catalogues alone of anatomical and pathological museums, while nearly a page is covered by the index to periodical articles on the museums themselves. These latter articles are mostly descriptions by visitors, lectures on the preparations, or descriptions and acknowledgments by curators of additions to the cabinets under their charge during some specified time.

There are eleven pages filled with titles and references to Double Monsters.

One can hardly fail to feel more respect for his nose when he finds it filling thirty-one pages of this Index.

We have devoted no little space to each volume of the catalogue as it appeared, because its successive volumes must be regarded as additions to our literature in that they make medical libraries valuable by making their contents accessible. They appeal to the imagination as no other catalogue does, in the buried clinical records they make available. But the labor expended upon the catalogue must be watched in Washington to be appreciated. The thought necessary even

to arrange the classification and headings of subjects is infinitely greater than one could imagine who has never been brought face to face with similar work. Such classification cannot be thought out beforehand. The most elaborate system of classification carefully worked out would fail when brought into direct use, for the articles were not made to be catalogued, and conform to no system of nosology. The catalogue aims to bring out even the facts contained in the body of articles but not given in their titles, so that the most modest writer may feel sure that his article will be carefully considered by one reader, at least. There is also one pleasing thought which may comfort some individual whose careful account of a case is not given that prominence it deserves in the medical journal: that is, that the record of an individual fact is of more consequence in the eyes of the cataloguer than the most painstaking and pretentious article on the present state of medical science.

THE TREATMENT OF DIPHTHERIA.

In the last number of the *Bulletin General de Thérapeutique*, Dr. G. Guelpa, of Paris, insists on the value of irrigations of perchloride-of-iron solutions in diphtheria, and states the following propositions:

(1) Every case of diphtheritic angina not complicated with any other infectious affection is followed, almost without exception, by recovery in the space of a week, if it be combated within the first twenty-four hours of its existence by irrigations in the throat and nares of a one per cent. aqueous solution of perchloride of iron, and if these irrigations are practised at least twice or three times every hour during both day and night.

(2) In general, these irrigations in the throat prevent the extension of the diphtheria to the larynx and trachea.

(3) In cases of croup, especially if tracheotomy be early performed, pulverizations of the perchloride solution through the cannula afford a good means of combating the disease, and increase greatly the chances of success.

Guelpa claims extraordinary results from this treatment, which, he says, must be carried out pitilessly in a disease so fraught with mortality. He dwells on the importance of the solution of ferric perchloride being weak, not concentrated. A solution of one per cent. can do no harm if swallowed, or if it penetrate the larynx. Indeed, the latter contingency, according to this authority, is one rather to be sought for than avoided. There certainly, he says, is no danger that the ferric solution shall penetrate the air-passages below the larynx. The lavage of the larynx by the solution is one of the favorable conditions of the treatment; it is the only means of accomplishing the antiseptics of this organ, and it is the true preventive treatment of croup.

As for the means of making these irrigations, a common rubber ball injector with suitable nasal or

mouth-piece is used. The child (in case the patient be a child) must be held firmly, the head being pressed between the left elbow and chest of the operator, the left hand of the latter being applied to the child's forehead, while, with the right, the cannula of the irrigator is slipped into the mouth of the little patient. Advantage can sometimes be taken of the absence of a tooth for effecting this object. With the penetration of the cannula, an effort of vomiting is generally excited. Then the operator presses upon the rubber ball, and the whole region of the fauces and pharynx is thoroughly and rapidly irrigated. The operation is done in a very few seconds, and without inflicting any suffering on the patient. But little of the injected liquid is swallowed, as the pharyngeal contraction which is excited expels most of it by the mouth. The nasal injections are less easily made than the buccal, but they are often indispensable, especially where there is a tendency on the part of the diphtheritic membrane to gain the nasal cavities. To prevent this untoward result, they may be given occasionally — every two or three hours.

Guelpa claims that his method is much easier of application than the swabbings or paintings of the throat so frequently practised in diphtheria, or even than the administration of perchloride of iron mixtures by mouth at relatively short intervals.

It is needless to say that new modes of treatment of diphtheria have been the order of the day for the past forty years; but the method of Guelpa (who, by the way, is no mean authority on the subject) seems to have some measure of rationality in its favor, but the forcing a child to submit to such a process at such short intervals, will be an insuperable objection.

MEDICAL NOTES.

— In his eulogy on Dr. Agnew, Dr. Thomas, after speaking of his constant generosity to the poor and to all kinds of charitable enterprises, adds: "After thirty years of brilliant professional success, of uninterrupted health, of industry, of frugality, beyond making simple provision for the needs of those immediately dependent upon his labors, he died comparatively poor in this world's goods. Is the reason far to seek? In revealing this I violate no confidence, for this is the climax of his fame, the cap-sheaf of his career, the crowning glory of his life, to which his children point with pride! Had it been otherwise, a want of symmetry would have disturbed the perfect roundness of his career. As it is, the fair proportions of a beautiful record are left free from blemish and without spot. His income was immense, and he steadily invested it; some will say wisely, for he put it out of reach of moth, of rust, and of thieves."

— In Holland a commission has been appointed for the study and the suppression of Beri-beri. Its President is MacGillavry, Professor of Anatomy and Hygiene, in Leyden.

—A correspondent of the *American Lancet*, writing of the Washington Medical Congress, says: "While it has been a pleasure to hear our trans-Atlantic brethren, one is forcibly reminded in listening to their frequent audible and unconscious vocal expirations which create innumerable divorces between all the parts of speech of the reply—er—which—er—a—er—gentleman is—er—said to—er—have made when somebody—er—called his attention to the habit, he said: 'To "er" is human, to forgive, divine.'"

BOSTON.

—The Guild of St. Barnabas for Nurses opened its new home for nurses at No. 96 West Newton Street, Saturday evening, September 30th. Addresses were made by Rev. Dr. Phillips Brooks, Rev. F. Osborne, and Dr. Edward Cowles. The house is designed for a resting-place for trained nurses in the intervals of their professional engagements.

NEW YORK.

—The different medical schools opened their winter sessions during the past week with large classes. At the university the introductory lecture was delivered on Tuesday evening, October 24, in the new Loomis Laboratory, by Professor Wm. G. Thomson, who took for his subject "The Laboratory as a factor in Medical Education."

—Dr. Early W. Walton, house surgeon at the Manhattan Eye and Ear Hospital, died of peritonitis September 29th, at the age of thirty two. He was the son of Major M. W. Walton, a noted criminal lawyer of Austin, Texas, and was educated at the University of Virginia. He was afterwards graduated in medicine at Bellevue Hospital Medical College, and practiced in the South for five years. He then determined to become a specialist in ophthalmology and etiology, and eighteen months ago returned to New York for the purpose of studying these branches. He had held the position of house surgeon at the Manhattan Hospital but two months at the time of his death.

—Dr. Wm. M. Thallon, a distinguished young physician of Brooklyn, whose name was especially identified with the electrical treatment of uterine fibroids, died October 1st, in the 30th year of his age.

Miscellany.

BOSTON DISPENSARY.

The statistics of this institution for the year ending September 30, 1888, are as follows:

The number of new patients treated at the central office is 21,505, classified as follows:

Medical Department.—Men, 2,937; women, 4,721; children, 2,508; total, 10,166.

Surgical Department.—Men, 1805; women, 822; children, 570; total, 3,197.

Skin Department.—Men, 489; women, 401; children, 220; total, 1,110.

Department for Diseases of the Nervous System.—Men, 581; women, 381; children, 61; total, 1,023.

Department for Diseases of the Throat and Nose.—Men, 676; women, 612; children, 487; total, 1,805.

Department for Diseases of Women.—Women, 562; total, 562.

Department for Diseases of the Eye.—Men, 262; women, 278; children, 293; total, 833.

Department for Diseases of the Ear.—Men, 155; women, 202; children, 220; total, 577.

Department for Diseases of the Genito-Urinary System.—Men, 834; women, 2; children, 4; total, 840.

Department for Diseases of the Rectum.—Men, 78; women, 18; children, 5; total 101.

Orthopedic Department.—Men, 63; women, 46; children, 68; total, 177.

Dental Department.—Men, 240; women, 401; children, 473; total, 1,114.

The number of visits made by patients, old and new, at the central office is 48,154, classified as follows: Medical, 18,389; surgical, 29,765; total, 48,154. The number of patients treated in the Districts is 12,467, including 304 cases of midwifery, classified as follows: Men, 2,210; women, 4,578; children, 5,679; total, 12,467. The results of treatment in the Districts are as follows:

Discharged, cured or relieved	11,315
Removed to Hospitals	879
Died	299
Remaining under treatment	40

12,523

Under treatment at last annual report 66

12,467

The number of patients treated at the Central Office and in the Districts is 33,972

The number of cases of midwifery attended during the year 304

The number of cases of midwifery attended since July, 1856 5,343

Whole number of patients since October, 1796 997,527

Whole number of patients since July, 1856 878,724

Average daily attendance at Central Office during the year 159

Largest number present any one day, August 15 265

Smallest number present any one day, September 26 31

Number of recipes put up during the year 51,664

Number of house recipes 41,131

Number of district recipes 10,533

Largest number of recipes put up in one day, May 21 328

Smallest number of recipes put up in one day, September 26 41

Number of paid recipes 47,235

Number of free recipes 4,429

Number of paid dental patients 1,038

Number of free dental patients 76

The list of medical officers for the ensuing year is as follows:

Surgeons: Drs. J. Foster Bush, George H. Monks, Edward O. Otis, William M. Conant. Physicians: Drs. Robert Disbrow, John Dixwell, Thomas M. Rotch, Claudius M. Jones, Harold Williams, James J.

Minot, George M. Garland, Edward M. Buckingham, Vincent Y. Bowditch, William C. Emerson, Robert B. Dixon, Russell Sturgis, Thomas F. Sherman, James S. Howe, Frederic M. Briggs, Winfield B. Bancroft, William F. Temple, George E. Richards.

Department for Diseases of the Skin. — Physicians: Drs. Francis B. Greenough, Abner Post. Department for Diseases of the Nervous System. — Physicians: Drs. William N. Bullard, John A. Jeffries, Elliott G. Brackett. Department for Diseases of the Throat and Nose. — Physicians: Drs. Thomas A. DeBlois, John W. Farlow, Edward W. Warren. Department for Diseases of Women. — Physicians: Drs. Francis H. Davenport, John W. Elliot, John B. Swift, Rufus A. Kugman. Department for Diseases of the Eye. — Physician: Dr. William D. Hall. Department for Diseases of the Ear. — Physicians: Drs. George A. Leland, Henry L. Morse, William S. Bryant. Department for Diseases of the Genito-Urinary System. — Physicians: Drs. George H. Tilden, Francis S. Watson, Hayward W. Cushing, Gardner W. Allen. Department for Diseases of the Rectum. — Physicians: Drs. Walter J. Otis, William D. Hodges.

Obstetric Department. — Physician: Dr. Charles M. Green.

Orthopedic Department. — Physician: Dr. Royal Whitman.

Dental Department. — Dentist: Joseph E. Wait, D.M.D.

District Physicians. — Drs. Willis B. McMichael,

Henry Jackson, Henry C. Baldwin, George G. Sears, Silas H. Ayer, George Haven, Robert W. Greenleaf, George E. Thompson, Frederick W. Stuart.

Apothecary: Frederick H. Dudley. Assistant Apothecary, Joseph S. Lang.

WILLIAM H. H. HASTINGS, *Supt.*

Correspondence.

ANTIPYRINE IN SEASICKNESS.

Boston, October 4, 1888.

MR. EDITOR, — I beg leave to offer the following, summarized from the *Journal de Médecine et de Chirurgie*, of recent issue:

It having been reported by O. Bonnet that antipyrine in a dose of thirty grains a day sufficed, nearly always, to prevent seasickness, E. Rollet made numerous observations, *in re*, during a voyage from Marseilles to Oran. There was about three hundred passengers on board the vessel. When the ship began to pitch, and the first symptoms of "nausea" were perceived, sixty persons at least took from fifteen to forty-five grains of antipyrine. Of the whole number, four only were enough free from *mal de mer* to sit through dinner. On the return trip the result was essentially the same. It is affirmed that the drug was taken according to the directions given by O. Bonnet.

This experiment shows how difficult is the exact seeing of things which at first appear very simple.

Very respectfully,

F. B. STEPHENSON.

REPORTED MORTALITY FOR THE WEEK ENDING SEPTEMBER 30, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhoeal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	680	298	23.10	13.05	11.11	3.45	3.00
Philadelphia	1,016,758	329	111	13.50	12.00	2.70	6.36	2.40
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	760,000	—	70	24.08	6.72	5.04	2.80	10.68
St. Louis	439,160	179	70	14.72	21.76	3.84	5.76	1.92
Baltimore	435,155	157	66	21.73	11.66	12.72	3.18	5.83
Boston	407,024	187	80	15.13	13.55	2.67	4.45	7.12
Cincinnati	325,000	113	—	20.44	11.96	5.52	—	16.56
New Orleans	218,000	108	31	—	—	—	—	—
Buffalo	240,000	—	—	—	—	—	—	—
Washington	225,000	92	42	32.70	11.69	9.81	7.63	3.27
Pittsburgh	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	19	2	42.08	5.26	21.64	15.78	—
Charleston	60,145	37	12	16.20	13.50	8.10	2.70	2.70
Portland	40,000	9	2	11.11	11.11	—	—	—
Worcester	66,536	22	18	18.16	5.08	18.16	—	—
Lowell	60,530	—	—	—	—	—	—	—
Cambridge	64,079	30	15	23.33	—	19.49	3.33	—
Fall River	61,203	29	20	37.5	6.40	17.25	10.35	—
Lynn	51,467	18	—	5.55	—	5.55	—	—
Lawrence	40,175	31	17	22.61	16.15	22.61	—	—
Springfield	39,362	8	5	37.50	12.50	37.50	—	—
New Bedford	36,298	15	10	39.49	—	33.33	—	6.66
Somerville	35,307	14	8	57.12	11.28	21.42	14.28	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	9	4	11.11	—	11.11	—	—
Chelsea	27,552	9	2	—	22.22	—	—	—
Haverhill	24,979	9	4	22.22	22.22	—	11.11	—
Taunton	24,746	9	6	22.22	—	22.22	—	—
Brookton	24,284	9	1	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	4	2	—	—	—	—	—
Malden	18,932	8	4	37.50	—	12.50	—	—
Fitchburg	17,534	7	6	42.81	28.56	28.56	—	—
Waltham	16,651	1	0	—	—	—	—	—
Newburyport	15,839	5	1	20.00	20.00	20.00	—	—
Quincy	13,336	—	—	—	—	—	—	—

Deaths reported 2,047; under five years of age 842; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 464, consumption 20, acute lung diseases 185, diarrheal diseases 189, diphtheria and croup 135, typhoid fever 89, whooping-cough 35, malarial fever 28, scarlet fever 15, measles 8, cerebro-spinal meningitis 4, erysipelas two. From whooping-cough, New York 21, Washington four, Philadelphia five, St. Louis two, Baltimore, Nashville, Somerville, and Fitchburg one each. From malarial fever, St. Louis nine, New Orleans eight, Washington five, Philadelphia and Baltimore two each, Cincinnati and Charleston one each. From scarlet fever, New York 10, Fall River three, Philadelphia and Baltimore one each. From measles, New York seven, Baltimore one. From cerebro-spinal meningitis, Washington and Somerville two each. From erysipelas, New York and Haverhill one each.

In the 28 greater towns of England and Wales with an estimated population of 9,318,273 for the week ending September 15th, the death-rate was 17.7. Deaths reported 3,187; infants under one year of age, 1,087; whooping-cough 67, scarlet fever 57, measles 34, fever 32, diphtheria 35, small-pox (Preston) one.

The death-rates ranged from 13.2 in Oldham to 26.2 in Norwich; Birmingham 17.0; Bradford 14.5; Hull 14.2; Leeds 22.1; Leicester 13.9; Liverpool 19.9; London 16.2; Manchester 25.7; Nottingham 15.5; Sheffield 21.4; Sunderland 14.0.

In Edinburgh 13.9; Glasgow 16.8; Dublin 19.4.

The meteorological record for the week ending September 29, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, Sept. 29, 1888.	Barom- eter.	Thermometer.		Relative Humidity.		Direction of Wind.		Velocity of Wind.		State of Weather. ¹		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Sunday, .. 23	30.17	56.0	57.0	52.0	82.0	88.0	85.0	N.	N.E.	14	10	O.	1 .01
Monday, .. 24	30.23	52.0	56.0	50.0	75.0	81.0	78.0	N.	E.	10	2	F.	0 .2
Tuesday, .. 25	3.03	50.0	55.0	39.0	81.0	82.0	82.0	N.	E.	3	12	C.	0 .0
Wednesday, .. 26	29.52	52.0	58.0	45.0	100.0	77.0	88.0	W.	34	14	14	C.	11 .208
Thursday, .. 27	29.80	62.0	74.0	53.0	75.0	70.0	74.0	S.W.	S.W.	9	14	C.	0 .0
Friday, .. 28	29.94	54.0	63.0	52.0	70.0	63.0	66.0	W.	9	9	9	F.	3 .02
Saturday, .. 29	30.04	45.0	63.0	40.0	60.0	71.0	66.0	N.W.	N.W.	10	6	C.	0 .0
Mean, the Week.	29.56		61.0	47.0			77.0						

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT. U. S. A., FROM SEPTEMBER 29, 1888, TO OCTOBER 5, 1888

CRONKHITE, HENRY M., surgeon. On being relieved by CAPTAIN CORBETTER, will report for duty to the commanding officer, Little Rock Barracks, Ark., reporting by letter to the commanding general, Division of the Atlantic. Paragraph 10, S. O. 227, A. G. O., Washington, September 29, 1888.

ADAIR, GEORGE W., captain and assistant surgeon. Is relieved from duty at Fort Brady, Mich., and will report for duty to the commanding officer, Fort Robinson, Neb., reporting by letter to the commanding general, Department of the Platte. Paragraph 10, S. O. 227, A. G. O., Washington, September 29, 1888.

CORBETTER, WILLIAM H., captain and assistant surgeon. On being relieved by CAPTAIN TAYLOR, will report in person to the commanding officer, Fort Hays, Kan., for duty at that post, relieving HENRY M. CRONKHITE, major and surgeon, and reporting by letter to the commanding general, Department of Arizona. Paragraph 10, S. O. 227, A. G. O., Washington, September 29, 1888.

TAYLOR, ARTHUR W., captain and assistant surgeon. Is relieved from duty at Fort Robinson, Neb., and will report in person, without delay, to the commanding officer, Fort Grant, Ariz. T., for duty at that post, relieving WILLIAM H. CORBETTER, captain and assistant surgeon, and reporting by letter to the commanding general, Department of Arizona. Paragraph 10, S. O. 227, A. G. O., Washington, September 29, 1888.

By direction of the acting Secretary of War, the following-named officers of the Medical Department will report in person, on October 9, 1888, to the President of the Army Medical Examining Board, Army Building, New York City, for promotion:

MUNDAY, BENJAMIN, captain and assistant surgeon.
OWEN, WILLIAM O., JR., captain and assistant surgeon.

Upon the completion of their examination, to rejoin their stations. Paragraph 15, S. O. 225, A. G. O., Washington, September 29, 1888.

KAFFERTY, ODEN, lieutenant and assistant surgeon, U. S. Army. Will stand relieved from duty in connection with the Division Rifle Competition, the 7th inst., and under Paragraph 6, S. O. No. 2, c. s., Headquarters Division of the Missouri, will return to his proper station, Fort Clark, Texas. Paragraph 5, S. O. 95, Headquarters Department of Texas.

DEATH.

Died, in Hamburg, Germany, September 27, 1888, Samuel Eneeland, M.D., M.M.S.S., of Boston, aged sixty-seven years.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING OCTOBER 6, 1888.

HUDSON, ADRIAN, medical inspector. Ordered to Naval Hospital, Mare Island, Cal.

GIHON, H. L., medical director. Detached from the Naval Hospital, Mare Island, Cal., and proceed home.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE FOUR WEEKS ENDING OCTOBER 6, 1888.

PURVIANCE, GEORGE, surgeon. To proceed to Washington, D. C., for special duty, October 3, 1888.

STONER, G. W., surgeon. Detailed as Chairman of Board to select site for Marine Hospital at Evansville, Ind., October 5, 1888.

GOLDSBOROUGH, C. B., surgeon. Leave of absence extended fifteen days, on account of sickness, September 28, 1888.

NORMAN, SEATON, assistant surgeon. Detailed as recorder of Board to select site for Marine Hospital at Evansville, Ind., October 5, 1888.

FATTIC, J. B., assistant surgeon. To rejoin station at St. Louis, Mo., October 5, 1888.

MAGRUDER, G. M., assistant surgeon. To proceed to Way Cross, Ga., for special duty, September 15, 1888.

GEDDINGS, H. D., assistant surgeon. To proceed to Camp Perry, Fla., for special duty, September 15, 1888.

BOOKS AND PAMPHLETS RECEIVED.

Morrow's Atlas of Venereal and Skin Diseases, No. 7. William Wood & Co., Publishers.

Martin's Druggists' Directory of the United States and Canada, 1888-89, containing lists of wholesale and retail druggists and various branches connected with the drug trade. Advertiser Publishing Company; principal office, 93 Federal Street, Boston.

The Physician's Leisure Library: The Theory and Practice of the Ophthalmoscope. By J. Herbert Claiborne, Jr., M.D. Detroit: George S. Davis. 1888.

Reversive Anomalies in the Study of the Neuroses. By Irving C. Russe, M.D., of Washington, D. C., Professor of Nervous Diseases in the Georgetown University. Reprint. 1888.

Transactions of the Medico-Legal Society, April Session. Presidency of Clark Bell, Esq. Reprint. 1888.

Original Articles.

TREATMENT OF PENETRATING SHOT-WOUNDS OF THE ABDOMEN.

BY W. B. COLEY, M.D.

THIS subject is one that excited but little interest in the medical world of ten years ago. It is true that the text-books on surgery abounded in statistics derived from the reports of the more recent wars, and especially our civil war, yet the more of these they contained the more strongly were you impressed with the one great fact, standing out before all others, that penetrating gunshot wounds of the abdomen were universally fatal, and recovery the rare exception.

The treatment of these wounds was summed up in a few words. The great masters of surgery both here and abroad were firm believers in the "Laissez faire" doctrine, and non-interference was taught from every professor's chair. Keep the patient quiet, fill him with opium, fold your hands and postpone making your diagnosis until you have had the benefit of an autopsy (an aid which will but rarely be denied you), comprises the sum and substance of the old method of treatment.

It would be unfair not to mention some few but notable exceptions. Gulliver, of England, and Baudens, of France, in the early part of the century. Legourse and Thomassen later on, followed by Otis, Kinlock and Sims, of our own surgeons, boldly proclaimed their disbelief in the *let alone policy*. Some of them went so far as to put their theory to the practical test, yet so great was the weight of opinion on the other side, and so backed as it was by time-honored custom and tradition, that the advocates of interference scarcely obtained a hearing, and their teachings were quickly forgotten.

With the advent of antiseptic surgery the old question was again revived. While the profession at large was filled with wonder at the remarkable results of the ovariotomists, a few of the more thoughtful surgeons were asking themselves the question, "Is there any fundamental reason why we cannot apply these principles to gunshot wounds of the abdomen?" As early as 1882 we find Sims using these significant words: "I have the deepest conviction that there is no more need of a man dying of gunshot or other wound of the abdomen properly treated than there is of a woman dying of ovariotomy properly treated. Ovarian tumors were universally fatal until McDowell demonstrated the method of cure, which has now reached such perfection that we cure ninety to ninety-seven per cent. of all cases, and by the duplication of the same rules which guard us in ovariotomy to the treatment of penetrating gunshot wounds of the abdomen there is every certainty of attaining the same success."

What has been accomplished in the six years that have passed since those words were written shows that they were no idle words. Although as yet the prophecy of Sims has not been fully realized, enough has been done to prove that he was on the right track at least, while the constant improvement in methods and results as well, shows that we have by no means arrived at the limit of success.

I have spent a great deal of time in making a careful collection of all the reported cases of gunshot

wounds of the abdomen treated by laparotomy, and I have tabulated them and arranged them in classes with the view of bringing out the more important points, both in reference to diagnosis and treatment.

My cases were most of them collected before I had seen MacCormac's tables, and the abstracts taken from the original reports of the operators themselves. Before considering these tables and the deductions to be drawn from them it might be well to take a brief glance at the history of the treatment of gunshot wounds of the abdomen. As I have already said, the old treatment consisted in keeping the patient absolutely quiet, and the giving of large doses of opium with the idea of stopping peristalsis, and allowing nature to affect the cure by forming adhesions.

The first case that I have been able to find in which laparotomy was resorted to is the one reported by Baudens, of France, in the *Plairs d'Armes à Feu*, of 1836. The bullet entered at the umbilicus and made its exit through the quadratus lumborum, wounding the intestine in two places. Baudens boldly opened the abdominal cavity, resected eight inches of the small intestine, and united the edges with the Lembert suture. Although the patient died on the third day, the autopsy revealed a wound of the cæcum which had not been discovered at the time of operation, and fecal extravasation in the abdominal cavity. His second case proved to be a wound of the transverse colon. The abdominal wound was enlarged, intestine sutured, and the patient recovered.

In 1862, Kinlock, of South Carolina, did laparotomy on a man who had been shot in the abdomen seven months previously, but as the operation was done more to relieve the condition of obstruction resulting from the injury rather than to repair the actual injury, it can hardly be classed among these cases.

One of the most instructive of the early cases is that reported by Mr. T. N. Fitzgerald, of Australia. On February 9, 1882, he performed laparotomy on a young man who had shot himself with an ordinary shotgun loaded with small shot. He resected ten inches of the jejunum one foot from the duodenum, cut out a V-shaped piece of mesentery, sutured edges with fine carbolized catgut, washed out the cavity with 1-300 warm carbolic solution, made a counter opening in most dependent part of abdomen and inserted a drainage-tube. The patient lived 123 hours, and died of a general peritonitis. The external wound had sloughed, and the peritonitis had evidently been caused by an extension of the septic process along the track of the wound.

The autopsy revealed some interesting points. The external contour of intestine at the place of resection was so perfect that it required a very careful examination to detect the site of operation. The divided edges of the peritoneum were firmly united. The silk sutures were covered with lymph, and the catgut sutures had disappeared. On opening the bowel the edges of the mucous membrane were found in accurate apposition without any tendency to puckering or constriction.

Kinlock, of South Carolina, did a laparotomy for pistolshot wound of the abdomen in 1882, and although unsuccessful it did not shake his belief in operative interference.

The autopsy showed two additional wounds not found by the operator.

The results of operation thus far it must be con-

fessed were far from flattering. The few supporters still cling to their pet theory, but new converts were surprisingly few.

The successful case of Kocher, of Berne, in 1883, quickly followed in 1884 by the famous case of Dr. William T. Bull, of New York, really mark the beginning of the new era in the treatment of gunshot wounds of the abdomen. These cases are too well known to need a detailed description here. Suffice it to say they created a decided change in opinion both here and abroad, and the number of operations from this time on rapidly increased.

Although, first done in France, operative interference has never been looked upon with favor by the great body of French surgeons, and to-day, in spite of the very favorable results, there is a strong feeling against it. This feeling was clearly brought out by the recent discussion of this subject at the congress of French surgeons reported in *Revue de Chirurgie* of April, 1888. Laparotomy was advocated by M. Chauvel and Trelat, while the other side of the question was maintained with a good deal of spirit by M. Réclus.

He says that the existence of a penetrating wound of the abdomen by a revolver ball is to English and American surgeons an indication for immediate laparotomy. For them, perforation of the intestine is the necessary corollary of all penetrating wounds, and death the fatal result of all such wounds if left to themselves. He cites his own experiments to show that perforation is not necessarily present in a penetrating wound of the abdomen, since in one out of thirty-seven of his cases a bullet traversed that part of the abdomen occupied by the intestines without injuring them. He absolutely denies that every perforating wound of the intestine causes death, and says that this idea arose from two things — first, confusing revolver with rifle bullets; second, results of experiments on dogs. He claims that the conditions are more unfavorable in dogs on account of the much greater shortness of the intestine, and greater tendency to faecal extravasation. In order to render the conditions more equal he gave a purgative previous to experimenting, and in this way he saved a number. In regard to the mortality of perforating wounds, he says that cure is quite frequent, and to support this statement he mentions the cases collected by Saint Laurent and Mr. Nogues, nearly fifty in number, in which recovery followed without laparotomy.

He further adds that no cases were admitted that did not have the pathognomonic signs of perforation; for example, hæmatemesis, bloody dejections, faecal matter coming from wound, or expulsion of projectile by anus.

The plan of treatment advocated by Mr. Réclus is as follows: (1) Energetic compression of the abdomen to check hæmorrhage and faecal extravasation; (2) administration of large doses of opium; (3) only when the above-mentioned precautions fail is laparotomy justified.

More light must be thrown upon some very important omissions in these statements of Mr. Réclus before he can have good ground for expecting the English and American surgeons to accept his views. Suppose we accept his fifty cases of recovery without operative interference, though from the signs of perforation which he mentions as pathognomonic, we are by no means forced to accept them. Dr. P. S. Connor says,

"there is no single symptom that can be relied on as diagnostic of perforation. The vomiting of blood or bloody stools may both be the result of contusion." This rules out two of the four so-called pathognomonic signs that Réclus lays down, leaving only "faecal matter issuing from the external wound, and expulsion of the bullet per anum." Among the seventy-four cases which I have collected in which laparotomy has been done, there is scarcely a single one in which either of these signs were present, hence it is quite probable that the diagnosis of perforation, in the majority of the fifty cases, rested upon bloody vomiting and bloody stools. Yet, overlooking all this, and accepting all of the cases as authentic, what do they prove? absolutely nothing until we are told how large a number of cases that *did not* recover were found, before getting the fifty cases that *did* recover. Such an omission makes it utterly impossible to compare the results of the two methods of treatment.

Dr. E. M. Moore has collected 4463 cases of shot wounds of the abdomen. Of these 3662, or 82.7%, died. He says that to these should be added a certain number who died without medical attendance, which would probably make the percentage of recoveries less than 10%. Of all these there were only five cases of recovery from wounds of the *small* intestine.

There were 650 cases of penetrating wounds of the abdomen reported in our civil war, yet Dr. Otis, in the "Surgical History of the War of the Rebellion," says: "It may be doubted if a single uncontested case of recovery from shot wound of the small intestine was observed."

Such, then, are the results of the "let alone" policy.

Let us now see what results have followed interference.

The seventy-four cases that I have collected I have arranged and tabulated in three classes, with reference to the tissue intervening between the injury and the operation.

Class I contains only those cases operated on within the first twelve hours.

Class II contains cases operated on after twelve hours.

Class III contains cases in which the time of operation could not be ascertained.

Class I contains 39 cases. 18 recovered, 22 died. Percentage of recoveries, 43.6%.

Class II contains 22 cases. 5 recovered, 17 died. Percentage of recoveries, 22.7%.

Class III contains 13 cases. 7 recovered, 5 died, 1 doubtful. Percentage of recoveries, 57%.

The above classification shows very clearly the advantage of an *early* operation, the percentage of recoveries in cases operated on during the first twelve hours being nearly double that of cases operated on after twelve hours.

Total number of cases operated on	74
Number of recoveries	29
Percentage of recoveries	39.5

Causes of Death in the Cases that did not Recover.

Hæmorrhage	4 cases
Peritonitis	9 "
Shock	8 "
Wounds not found by operator	4 "
Pneumonia	1 "
Acute Pericarditis	1 "

Average time patient lived after operation, in twenty-seven cases, was 26 hours; which he had treated by laparotomy.

PENETRATING SHOT-WOUNDS OF THE ABDOMEN.— CLASS I.

Operator and Reference.	Age and Sex.	Size of Bullet.	Distance.	Int. bet Injury and Opera.	Character of Injury.	Condition of Patient.	Details of Operation.	Subsequent Progress.	Autopsy.	Result.
Prince, David. Trans. Am. Surg. Assn., 1887, ccxii.	M 30	22 rifle	long range	2 h.	Ex. wd., 1 in. above middle of crest of ilium, wd. of colon.	Pain in r. inguinal region, 1. 99.8°.	Non-med. incision. Intestines taken out and examined. Colon sutured. Time, 1 h. 40 m.	Following wk., T. 99.5-102°; good d e a l vomit'g. 18th day. T. 103°. 15th day pain severe, constipation, 372 c. c. pus aspirated.		R
Prince, David. <i>Ibid.</i>	M adult			6 h.	5 wds. small intest. 2 wds. of bladder.	Condition fair, shot by a snail (Several other wds.)	Laparotomy. Wds. of bowel sutured, cavity washed out.	Patient died 12 h. after operation.		D
Ramsay, North-west. Lancet, Aug., 1885.	M 7	32		6 h.	Ex. wd., 2 in. 7. med. line, 3 in. above umb. 1 wd. duodenum, contusion.	Profuse external hemorrh. Frequent vomiting, no blood, cold. T. 97.5° Blood, g a l l and mucus oozed from wd.	Med. incision. Temp. of operating room raised to 100°. Abdominal cavity full of bright red blood, cav. washed out with 1-1000 bi-chloride.	Patient did not rally and died 1 h. later from hemorrh. probably.		D
Sevastopoule, (1889) Bull. et Mem. de la Soc. de Chirg., xlii., 1887, 273.	M 30	5.5 m. in.		1 b.	Ex. wd., middle of line between right iliac spine and umbil. Large oval wd. small intest.	Cold and pale. Faecal fluid escaping from wd.	Laparotomy. Wd. enlarged to 6 in. About a quart of blood and clots in cav. Wounded portion resected and edges invaginated. Cavity washed with carbolic sol.	Patient recovered with no bad symp.		R
Skelley, Ann. Surg. July, 1887, 49.	M 21			2 h.	Ex. wd., 2 in. below and 3 in. r. of umb. No wound of intest. 6 bullet wds. different parts of body.	Pale, weak, pain r. iliac region.	Med. incision from umb. to 1 in. above pubes. Cavity washed with carbolic rain water.	In bed 21 days. Wd. healed without drop of pus.		R
Smart, W. F. B. M. J., 1835, 1, 379.	M adult	80 gr.	9 ft.	1/2 h.	Ex. wd., r. side over 6th rib, 1 in. from sternum. Wd. of liver.	Extreme collapse.	Given 60 gtt. of laudanum. No anesthetic. Incision 23 in. long, over edge of cartilage of 8th rib. Bullet found imbedded in liver.	7 h. after operation patient in a state of extreme collapse. Retard'd to work in 18 days.		R
Pozzi, Revue de chir., 1887, 1, 78.	13	7 c.		8 h.	Three wds. of small intest. and 3 contused wds. of intest. Wd. of bladder	Vomiting and bloody urine.	Bowel partially resected. Med. incision. Intra-peritoneal infiltration of urine. Time of operation, 2 1/2 hours.	Patient died in 60 h.	None.	D
Parkes, C. T. Ann. Surg., Nov., 1887.	M adult			4 h.	5 perforat. wds. of small intest. and left kidney.	Vomited blood.	Laparotomy. Med. incision. Kidney not removed.	Death in 24 h. after operation, from bleeding from kidney wd.		D
Freyer, Deut. Med. Woch. July 15, 1886.	M 19			6 h.	Intest.	Collapse.	Abdominal wd. enlarged. Intestines resected.			R
Morton, T. G. Unpublished.	36			1 1/2 h.	4 wds. stomach, 1 t. colon, wd. omentum.	Pain, no shock, vom. copious and bloody.	Laparotomy. Lembert suture. Abdominal cavity washed out.	Patient died at end of 3 days.	None.	D
Murphy, J. B. Jour. Am. Med. Assn., March 10, 1888.	M 26			2 to 3 h.	Ex. wd., 1 1/2 in. below ax. line, 1 1/2 wds. small intest.	Little shock, T. 99.0° and 100.0° rectal, P. 60 no pain, in good condition, no vomiting.	Med. Incision, 24 in. long, 1 1/2 inch solution for cavity. (Carbolic)	Patient died in 7 h.	Large amount blood in cav., and hole in renal artery.	D
Murphy, J. B. <i>Ibid.</i>	M 22			2 h.	Ex. wd 1 in. above and 2 in. to r. umb. wd. of liver, no ad. intest.	P. 66 (good vol.) some shock.	Med. incision. Abdom. cavity full of blood and clots. Time, 30 minutes.	Temp. did not go above 99°. 10 days later bullet removed from back discharged well 20th day.		R
Murphy, J. B. <i>Ibid.</i>	M 57	38	15	3 h.	Ex. wd., level with 9th rib and front of ax. line. Wd. of liver, 2 wd. of t. colon.	P. 78 (strong) no shock.	Non-med. Fecal extravasation. The two openings in colon converted into one long slot. Time 1 1/2 h.	10th day dress'g removed. Complete primary union.		R
Murphy, J. B. <i>Ibid.</i>	M 26			2 h.	Ex. wd., r. side, just below ribs, ax. line, second wd. 2 wds. stomach none of intest	Profound shock collapse.	Med. incision. Had been given 2 subcutaneous injections of morph. sulph. gr. 5, and showed symptoms of opium poison.	Patient died in 13 h.	Abdominal cavity a n. no blood.	D

PENETRATING SHOT-WOUNDS OF THE ABDOMEN.—CLASS I. (Continued.)

Operator and Reference.	Age and Sex.	Size of Bullet, Lance.	Dis- tance.	Int. bet Injury and Opera.	Character of Injury.	Condition Patient.	Details of Operation.	Subsequent Progress.	Autopsy.	Re- sult.
McGraw, T. A. Ann. Surg., Nov., 1887.	F 24	32		9 h.	Ex. wd., 2 in. above umb. and inter. r. aut. sup. spines of ilium. 2 wds. b. colon.	Bowels moderately distended. P. 120, T. 102° vomited bile, great pain, no hepatic reson.	Non-Med. incision. 4 in. long, paral. to fibres of ext. oblique. Czerny-Lembert suture.	Temp. 3d and 4th day 102° 6th day 99°. Discharged 6th week.		R
Sewell, B. M. J., Feb. 11, 1882.	male adult	shot gun	near	few b.	Small intest.					R
Farham, F. W. New Orleans M. and S. J., xiv, 508.	M 34	38	near	1½ h.	Ex. wd., 2 in. r. med. line, 2 in. bel'w umb. Wd. small intest., a colon, bladder.	Shock, rapid P. great disten- sion, rapid respiration.	Med. incision 2½ in. long. No blood urine found. Intes- tines not turned out, and cavity sewed up. Large wd. of bladder felt by rectal exam- ination.	Drainage-tube into bladder through rec- tum. Death in 44 h. after operation.	Wd. of bowel not found at operation.	D
Packard. Med. News, Mar. 26, 1887.	M 33	38	near	1½ h.	Ex. wd. 2 in. l. and 1½ in. be- low umb. 11 wds. small in- test., l. of ileo- caecal valve, ex. wd. iliac vein.	Marked collap- P. 97.5°, P. 120, vomited food and a slight amt. of blood.	Med. incision from umb. to just above pubes. No fecal mat- ter in cavity. Con- siderable blood.	Patient steady- ly sank, death in 17 h.	Slight evidence of peritonitis.	D
Carson, N. B. St. Louis Courier Med., Mar., 1887.	M 29			6 h.			Laparotomy. Bowel sutured. Drainage- tube.			D
Fox. Med. News, li, 567.	M 18		near	3½ h.	2 wds. small in- test., 2 wds. t. colon. Ex. wd. 1½ below umb. 1½ l. med. line.	Fair, P. 110, T. 98½.	Med. incision. 2½ in. above, to 4 in. below umb. Lembert su- ture. Rubber drain- age-tube. Time, 1 h. 10 m.	Discharg'd well 4 weeks.		R
Hamilton. Trans. Am. Med. Assn.	M 19	32		2 h.	11 wds. small intest., 2 a colon, 1 mes- entery.		Med. incision. 6 in. long.	13th day, grave rectal tenes- mus, due to fluctuating tumor in pel- vis. Rectal incision. 3 pints pus evacuated.		R
Keen.	F 18	32		10½ h.	Liver, stomach, kidney, sup. mes. artery and vein. Ex. wd., 4½ in. above and 5½ r. med. line.	Moderate tend- dness, hep- atic dulness not changed, pale, weak, consid. pain. Vomited 1½ pure blood.	No blood or serum in cavity, no faeces, no signs of peritonitis. Deep cut wd. of kid- ney. Kidney remov'd but peritoneum not sutured on account of weak condition of patient.	Patient died 15th day. Did well 4 days, then had chill. T. 104°, next day a second. T. 105.4°. Bel- ly respired, and explored.	General perit- onitis caused by gangrene of a contused portion near mesenteric border.	D
Kinlock, R. A. North Caro. Med. J., 1882, 10.	adult			11 h.	5 wds. small in- test., 2 mes- entery.	Slight shock, pain in abdo- men and sac' region.	Laparotomy. Wds. sutured with Lem- bert suture.	Patient died in 10 h.	2 other wds. of bowel not found at the operation.	D
Kinlock, R. A. Trans. Am. Surg. Assn., 1887.	M 27	38	near	5 h.	6 wds. small in- test., 2 wds. mes. Ex. wd. 1½ in. l. umb.	Slight shock, P. 88, T. 99°. condition good.	Med. incision, 8 in. long. Good condi- tion at end of oper- ation.	3d day, T. 102°, slight vomit. Death 4th day.	Abdomen much distended, no adhesions, 1 pint sanguinolent fluid in cavity; gap- ing wd. mes- entery.	D
Koeber.	M 14			3 h.	Ex. wd. near navel. Wd. of stomach, 1½ in. in diam- eter.	Severe abdom- inal pain, hic- cough, vom- iting, pallor, tympanites, collapse.	Large amount of dark blood in abdominal cavity. No aperture of exit from stomach. Found silk and cat- gut suture.	Recov'ry delay- ed, somewhat by formation of an abscess in abdominal wall.		R
Kollock, C. Med. News, 1887, 410.	M col. 15½	38	6	7 h.	2 wds. d. colon. 1 wd. small intest.	Restless, anx- ious, hepatic reson., tym- p. subnormal, emphysema at edges of wd.	Med. incision, 3 in. long, abdominal cav. washed out with warm carbolic. Con- siderable amount of blood and faecal mat- ter in cavity.	Patient recov'd without a sin- gle bad symp. Sutures re- moved 8th day, wd. heal- ed by 1st in- tention.		R
Lutz. St. Louis Courier Med., '86, 16, 260.	M 21	22		10 h.	6 wds. jejunum, 4 wds. mes.		Laparotomy. All wds. closed with Lembert suture.	Temp. gradual- ly rose and patient died 55 h. after operation.	Considerable sero-sanguinolent fluid in cavity, bow- els glued to- gether.	D
Manly. Trans. Int. Med. Cong. Med. News, Sept. 24, 1887.				2 h.	2 wds. d. colon, wd. sup. mes. artery.	Abdom'n much distended, evidence of fluid in cavity	Med. incision. Double perforat. colon. Wd. of inf. mes. artery. 1 gal. blood escaped. Artery ligatured.	Abdominal wd. did not unite by 1st inten- tion. Recov- ery delayed.		R

PENETRATING SHOT-WOUNDS OF THE ABDOMEN.—CLASS I. (Continued).

Operator and Reference.	Age and Sex.	Size of Bullet.	Distance.	Int. bet Injury and Opera.	Character of Injury.	Condition of Patient.	Details of Operation.	Subsequent Progress.	Autopsy.	Result.
Albee, Robert. Ann. Surg., 1886, 4, 475.	M		2 ft.	6 h.	4 wds. small intestine, 1 bladder.	Slight shock. Vom. once P. 90, moderate tym.	Med. incision, 1 pint green watery fluid with lymph and feces in abdomen cavity.	Did not come out of ether well. Restless and died 9 h.	12 oz. fluid in abdominal cav.	D
Annandale, T. Lancet, 1885, 1, 710.	M			1 h.	5 wds. small intestine, 2 colon, 2 rectum.	Shock, pain in abdomen slight.	Laparotomy. All wds. closed with Lembert suture.	Death in 24 h.	Wds. watertight, no more found.	D
Barker, A. E. E. M. J., March 18, 1888.	M	60 gr.	near	3½ h.	Ex. wd., level of lower end of sternum, 1 in. from med. line. No wd. intest., 2 oz. clots, wd. of omentum.	No vom., moderate shock, no dulness, tenderness marked. T. 98.2°.	Med. incision. Echy- mosis of liver. No wd. of viscera.	Temp. rose to 103°; fell to normal and remained. Discharged well 21st day.		R
Barker, A. E. Ibid.	M	143 gr.	near	5 h.	Ex. wd. just below a plane. Second 3 in. from first 2 wds. small intestine.	No shock.	1 in. incision, parallel to fibres of ext. oblique muscle only 1 in. between 2 wds. of intestines. 3 to 4 oz. blood clots.	Did well for 6 days and then died without any apparent cause.	Wds. of bowel all healed. 94 oz. bloody serum in cavity. Hyostatic pneumonia in both lungs.	D
Bolles, W. Not reported. (City Hosp., Boston.)	F	32	2-3 ft.	6 h.	1 wd. stomach, 2 jejunum, 2 colon.	Shock, vomiting, pulse feeble and rapid.	Non-med. incision. 6 in. long. Considerable blood in cavity. Slight trace of fecal matter.	Did not rally from operation well. Pulse could not be felt at wrist. Died in 6 h.	Wds. all tight. No more found.	D
Brown. Med. News, Feb. 18, 1888.	M	38	15 ft.	12 h.	Ex. wd., level with umb., 31 in. r. of med. line. No perforation intest.	6 hours after injury P. 35, T. 106°, 12 h. after, P. 130, T. 103°. No shock.	Med. incision from umb. to pubes. No wd. of intestine, but 6 oz. bloody serum. Cavity washed 1 to 6000 bicarbonate. Time operation 1½ h.	Wd. dressed 5th day almost healed.		R
Bull, W. T. Med. News, xlix, 607, (4th).	M	24	44	6 h.	4 perforated 2 jejun., 2 colon.	T. 98°. P. 92. In hepatic dulness dim., no distension.	Incision from 2 in. above pubes to 3 in. below sternum, meso-colon stained with blood. Time of operation 1½ to 100 carbolic.	Patient died in 3 h. Reaction was imperfect. Dr. B. thinks death was due to shock.		D
Bull, W. T. Trans. News, (3d) xlix, 624.	M	25	38	near	2 h.	Ex. wd., 2 in. below umb., 2 in. l. med. line. 2 wds. side intest., 1 sig. flexure, 1 sig. meso-colon.	Med. incision. 7 oz. bloody serum in cav. No feces. Piece of bleeding omentum tied and cut off.	Recovery delayed by giving way of sutures.		R
Cupples. Daniels Tex. Med. J., vii, 10, 1.	F		near	1½ h.	4 wds., small intest.		Med. incision 4 in. long 5 h. Reaction cavity. Time, 1 h. imperfect.	Patient died in 5 h. Reaction cavity. Time, 1 h. imperfect.		D
Fitzgerald, T. Austral Med. J., 1888, v, 35.	M	29	shot gun	near	1 h.	Ex. wd., r. lumb., reg. 35 in. long. Protrusion of small intest.	Wd. enlarged. 10 in. of jejunum resected and a v shaped piece of mesentery.	Death in 123 h. External wd. sloughed and death from peritonitis.	Bowel on line of resection perfectly united. No constriction.	D
Park, Roswell. Med. News, Aug. 4, 1888.	M	32		6 h.	Ex. wd., just below margin of liver. Shot through body. 2 wds., small intest., 1 wd., mesentery.	Severe shock.	Laparotomy. Chloro- form. Med. incision. Large amount of blood in cavity. Time of operation 1 h. 40 m. Irrigation. Drainage. Killed well.	Patient died in 53 h. after injury from acute pericarditis.	No peritonitis. Wds. healed.	D

PENETRATING SHOT-WOUNDS OF THE ABDOMEN.—CLASS II.

Operator and Reference.	Age and Sex.	Size of Bullet.	Distance.	Int. bet Injury and Opera.	Character of Injury.	Condition of Patient.	Details of operation.	Subsequent Progress.	Autopsy.	Result.
Andrews, E. Chicago Medical Jour. and Exam. Aug., 1887.	F		long range	16 h.	Ex. wd. 2 in. down and 1 from ant. sup. Spinal process of ileum. 1 perfor. intest.	At first wd. not thought to be penetrating. Evidence of peritonitis at time of oper.	Small incision (med.). Abdomen full bloody serum. Intestines red and adherent.	Pulse hardly felt and death next day.	None.	D
Billroth. R. von Hacker. Billroth Klinik, 1886.	F	63		32 h.	Under nipple. 7th rib space. Wd. stomach, liver aorta, kid., r.	Great pallor. Small pulse. Bloody vom., tympanitis.	Transverse incision 6 in. long from alba to 6th rib, 7th and 8th ribs resected, 29 Lembert suture.	Died following cere., periton., and pleuritis. Bullet found in r. kidney.		D
Bridson. N. Y. Med. Jour., adult 1887, xlv, 75.	F		near	17 h.	Ex. wd. 2 in. above umb., 1 in. l. of med. line. 2 wds. stomach 4 jejunum.	No collapse. P. 40 aeriform. T. 101.4°. Vom. thick, dark, slight tympanitis.	Med. incision, ensiform cartilage to umb. condition critical. Time of operation 2 h.	Died 3d day of acute periton.	4 wds. jejunum not found at operation.	D

PENETRATING SHOT-WOUNDS OF THE ABDOMEN.—CLASS II. (Continued.)

Operator and Reference.	Age and Sex.	Size of Bullet, Gauge.	Dis- tance.	Int. bet Injury and Opera.	Character of Injury.	Condition of Patient.	Details of Operation.	Subsequent Progress.	Autopsy.	Re- sult
Bull, W. T. (1st). Med. News.	M 22	32		17 h.	Ex. wds. 1½ in. below umb. 1½ in. to 1. 7 wds. small in- testine.	Abdominal ten- derness. No tymp. Warm con- sistent, vom. food, much abdom. pain. T. 97.8 F. 96.	Exploratory incision over wd. Then med. incision, 2 pts. bloody serum and clots in cavity. 7 wds. small intest. found; time of oper. 2 h.	Pulse went up to 112. r. 52 during oper. and breathing stopped. De- layed healing of abdom. wd. Perfect recov.		K
Bull, W. T. (3d). Ann. Surg., St. Louis, 1886, 1, 479	M 57	32	near	12½ h.	Ex. wds. 3 in. 1. of med. line 1½ to 1. wd. of exit r. side med. 1½ in. half way bet. ribs and crest of ileum, wd. of liver.	Pale, surface of body cold. T. 94. (ax.). P. 100. Shock from loss of blood.	Laparotomy in hope of stopping hemorrh. Intest. floating in blood sponged out, rapidly re-filled. P. began to fail before hemor. could be checked.	Died ½ h. from time of ether was begun.	No wd. except of liver.	D
Dandridge. Trans. Am. Surg. Assn., 1887, 216.	M 30	38	near	19 h.	Ex. wd. 1½ in. 1. of med. line 3 in. below umb. 10 wds. small intest.	Little pain, no distension. T. 97.1, no vom.	Laparotomy. Evidence of peritonitis. Cav. washed out with 1-10000 bichloride.	Died at end of 43 h.	All wds. firmly closed. No new ones.	D
Gaston. Med. and Surg. Reporter, Phila., Vol. IV, 7, 39.	M 30		near	96 h.	Ex. wd. intest. above and last rib, l. side a frac- tion colon.	Intense pain in abdomen. Great prostration, almost pulse- less. T. 103° (4th day).	Laparotomy 96 h. Dr. G. not called till then. Med. incision. Intest. greatly distended. Considered de- cern. but fluid in cav.	Died soon after oper.	Colon so firmly bound down by adhesions all passage stopped.	D
Jersey. Med. Rec., Oct. 16, 1886.	M 44	32	near	20 h.	5 wds. small in- test. 2 of mes.	Intense abdom. pain and tenderness. No tymp. Pulse rapid, full. T. 98°, no vom.	Med. incision, 3 inches above to 9 in. below umb. Bloody serum in cav. Cav. washed with warm water.	T. 102° and con- tused so to 4th day,retch- ing, vomiting great restlessness.	Edges of mes. wd. separated and sloughing	D
Lloyd. R. M. J., 1883, 1, 569.	F 19			72 h.	Ex. wd. 1. and below umb. 2 wds. sigmoid flexure, con- tused wd. of small intest. and bladder.	Little shock, no vom. Pain.	Abdom. cav. consider- able amount of foul smelling brown fluid Wd. of intest. 1 in. drainage stitched to wd.	Died 2 h. after operation.	Contused wd. of blad. and wd. of mesentery, formed.	D
Lange. Med. News (2), 1887, 630.	M 14	22		24 h.	Ex. wd. ½ in. below, 1 in. l. med. line. 7 wds. small intest.	No shock. P. 117. No pain great tenderness, some tymp. abdom. tenderness.	Laparotomy in line of bullet wd.	Recov. without a bad symp.		K
Makallar. Lancet, 1887, 1, 57.	M 22			33 h.	Ex. wd. to l. below and below umb. 2 perforations sig. flex. Con- tused wd. small intest. Wd. of blad- der and rec- tum.	Pain. Collapse, vomiting, no blood in urine for 12 h.	Laparotomy. 2 wds. of sig. flexure found and contused wd. of small intest. A tube p/s showed others.	Died 12 h. after oper. Bullet found in posi- wall of blad- der.	Faecal matter and clots in cav. and wd. of rectum found.	D
Mudd, B. H. Jour. Am. Med. Assn., 1887, 679.	M 17			72 h.	Wd. liver and stomach.	Good.	Laparotomy. Wd. of stomach sutured.	Died.	Wd. of sternum healed; extr. of blood in nasocolon.	D
Park, A. V. Jour. Am. Med. Assn., 1885, 5, 491.	M 16	22	45 ft.	22 h.	Ex. wd. mid-way bet. sym. pub. and umb. 2 in. left. 2 wds. small intest.	Great exhaus- P. 130, weak. T. 100. tymp.	Laparotomy. Incision over wd. Cav. washed with 1 per cent. of carbolic solution.	Died 16 h. after operation.	Peritonitis ex- trav. blood in cav. Con- tused wd. of intest. found.	D
Parkes, C. T. Ann. Surg., Nov., 1877.	M 45			16 h.	Ex. wd., 2 in. inside r. iliac spine. 1 wd. small intest., large size.	Fiery red blush over half of abdomen. Thoracic breath- ing. Abdom. wall hard.	Laparotomy. Med. incision. One large wd. of small intest.	Died 16 h. after oper., appar- ently from shock.		D
Priddy. Jour. Am. Med. Assn., 18, 619.	M 60	32	near	108 h.	Lacer. wd. d colon, 6 in. long. Wd. of mesocolon, f. mesentery and jejunum.	Rode a horse 4 miles after injury, when seen. Prof. shock, pulse rapid and wk. Great abdom. pain. No vom. Hiccough.	Laparotomy. Med. incision from umb to pubes. Considerable quantity of bloody serum and pus in cav. 1-1000 bichloride, wds. packed with iodoform Drainage-tubes.	Oper. lasted 55 min. came near dying on table. 2 days later, P. 180 and apparently dying. Per- fect recov. 6 weeks.		K
Richardson. New Orleans Med. and Surg. Jour., xlii, 867.	M adult	38	5	11 h.	Ex. wd., level with umb. 1 in. l. 3 wds. small intest., 1 mesentery.	Great pain, legs flexed. Ten- derness diffuse. Pro- duced a shock.	Laparotomy. Large amount blood in cav. Cav. quickly re-filled. Time 1½ h.	Died 11 h. after oper. in col- lapse.		D
Seymour. N. Y. Med. Jour., xlv, 209.	M 16	32		13 h.	Ex. wd., 2 in. above umb. and 1 l. of med. line. 2 wds., colon, 1 duod., 1 mes.	Vomited, great prostration. P. 100, severe pain but lit- tle tenderness.	Laparotomy. Med. incision 1 in. above umb. to 3 below. In- test. distended, brick red color in lustre, 2 in. color resected.	Death in 8 h.	Intest. Slight adherent, wd. united.	D

PENETRATING SHOT-WOUNDS OF THE ABDOMEN.—CLASS II. (Continued).

Operator and Reference.	Age and Sex.	Size of Bullet.	Distance.	Int. bet Injury and Opera.	Character of Injury.	Condition of Patient.	Details of Operation.	Subsequent Progress.	Autopsy.	Result.
Andrews, Jour. Am. Med. Assn., Aug. 15, 1888.		38		15 h.	Ex. wd., border of cartilage of ribs, l. of umb. No wd. intestines.	Moderate shock. Vom. consid. blood.	Laparotomy Med. incision. Considerable bloody serum. No clots nor fecal extrav.	Vom. after oper. but no blood.		R
Trelat, Gazette d' Hop., April 16, 1888.	F adult			22½ h.	Ex. wd. near umb. and to l. med. line. 2 wds. small intestines.	Pulse irregular, pallor, meteorism.	Incision non-medium, through wd. and parallel with linea alba. No blood in cavity, no pus, no extrav. feces. Time 1½ h. Lembert sutured.	Death 20 h. after operation. No rise in T.	Heart and liver very fatty and lungs congested.	D
Warren.	M 18	38		24 h.	Ex. wd., midway bet. umb. and ant. sup. spines ileum, 5 wds. of intest., 2 mes.	Pulse feeble, rapid. T. 36° Legs flexed on thighs and thighs on abdomen.	Laparotomy. Med. incision. Umb. to pubes. Time 1½ h.	Death 14 h. after oper.		D
Frick, A. P. (U.S. Army). Phila. Med. Times, xviii 459.	M 57	44	1-2 ft.	6 d.	Ex. wd., midway bet. axil. and ant. sup. spine ileum, 5½ in. from med. line, r. side, second wd. of exit, 1 h. lower. Fract. 4th, 8th 9th ribs; long wd. liver.	Not found until 25 hours after injury. Brought to Camp hospital 2 days later. T. 99.2° Third day T. 104°. Fourth day T. 102°.	Laparotomy. incision bet. wds. of entrance and exit. 6 in. long. Ribs resected. Long laceration wd. of liver. Abscess of liver 1 in. deep. Time 35 m.	Lacerated part removed. Irrigated 1-1000 bichloride. Drainage tube, discharge of bile 10 days. Well 10 weeks.		R
Labbe, Revue d'Chirurgie, April, 1888.	M 29			15 h.	5 double perforations ileum 1 wd. mesentery.	Cold, almost pulseless, syn. T. 36°. 1 c. Collapse.	Laparotomy. 1½ qts. blood in cav. Wd. of mes. Source of considerable hæmorrh. Peritonitis began. Large amount of fecal matter in cavity. Irrigated with boiled water. Time 1 hour, 10 minutes.	Seemed a little better after oper., but died 20 h. after oper.		D

PENETRATING SHOT-WOUNDS OF THE ABDOMEN.—CLASS III.

Operator and Reference.	Age and Sex.	Size of Bullet.	Distance.	Int. bet Injury and Opera.	Character of Injury.	Condition of Patient.	Details of Operation.	Subsequent Progress.	Autopsy.	Result.
Dennis, Med. News, 1886, 223-253.	M 23	32			Ex. wd. 1 in. below stern. No intest. wd. Wd. l. lobe liver. Wd. portal vein.		Laparotomy. Med. incision. Abdominal cav. full of blood, tremendous hæmorrh. from liver wd. Patient become nearly pulseless. Transfusion 12 oz. of salt solution into radical artery.	Rapidly sank and died of hæmorrhage.	No wds. of intest. found.	D
Dennis, <i>Ibid.</i>	F 26	32			Ex. wd., ½ in. l. umb. 7 wds. small intest., 1 wd. mes. Wd. iliac veins.	Profound shock T. 100, but little abdominal pain. Hep. resonance.	Laparotomy Med. incision. Abdominal cav. full of venous blood. Deep seated hæmorrh. that could not be controlled. Oper. had to be stopped. 7 wds. intest. sutured.	Lived 48 hours was stimulated every few minutes.	No more wds. found.	D
Griffith, North-West Lancet, 1885, iv, 412.	M									R
Legourese, Quoted by Dennis										R
Legourese, <i>Ibid.</i>										R
Baudens, Chirurgie d'Arme					Ex. wd. near umb. 2 wds. small intest.		Abdom. wds. enlarged. 8 in. intest. resected.		A wd. of cecum and fecal extrav.	D
Baudens, <i>Ibid.</i>					Wd. t. colon.		Fæcal extravasation abdom. wd. enlarged. Intest. sutured.			R
Hedden, J. W. Trans. Mo. State Med. Assn., 1886.	M 30				Ex. wd. Epigastrium, wd. of liver.	Great pain in side and back, dyspnoea.	Laparotomy. Incision through wd., 5½ in. long. Piece of clothing and 4 oz. blood removed from abdom.	Recov. with no bad symp.		R
Pirogov, Ladsenbeck's Archiv., xxvii, 278.	adult				Ex. wd. near umb. 4 perforated wds. small intest. 4 in. resected.		Laparotomy.	Case was lost sight of at end of 5 days. Was then doing well.		?

PENETRATING SHOT-WOUNDS OF THE ABDOMEN.—CLASS III. (Continued.)

Operator and Reference.	Age and Sex.	Size of Bullet.	Distance.	Int. bet. Injury and Opera.	Character of Injury.	Condition of Patient.	Details of Operation.	Subsequent Progress.	Autopsy.	Result.
Case, C. E. Med. News, Sept. 24, 1887, 378.	M	32			Ex. wd., 2 in. fr. umb. 2 wds. of bowel		Laparotomy. Considerable quantity of blood in abdon. cav. and a doubtful wd. of intest.	No bad symp.		R
Pickett, M. Med. Press, W. S. V., 1886, 5, 6, 1, 247.	M	13			Wd. abdominal wall.	No shock.	Exploratory laparotomy			R
Dean, D. W. Unpublished, St. Louis City Hosp.	M	16			Wd. intestines.	Condition at time of oper. not known.	Exploratory laparotomy. Intest. sutured and cav. cleaned.			D
Nauereide, C. B. Phila. Academy Surg., 1886.					2 wds. stomach 2 wds. duodenum.	Little pain or shock, bloody vom. later.	Laparotomy. Lembert sutured.			D

He said: "What I wish to emphasize as bearing on the application of laparotomy to the treatment of wounds of the abdomen is that many cases present none of these symptoms; that the sudden onset or the development of a general peritonitis is the first indication of intestinal wound; and again, that a bullet that has entered the abdominal cavity in the region occupied by the intestine is much more likely to injure the gut than not. Experiments have shown it possible to avoid the gut on the cadaver, but clinical evidence is lacking to support it."

Dr. Moses Gunn, of Chicago, says: "I think we are fully warranted in resorting to laparotomy for our diagnosis," and I believe the best American surgeons hold this opinion. The analysis of these seventy-four cases treated by laparotomy furnishes very strong evidence in favor of this method of treatment.

The percentage of recoveries is constantly increasing as the technique of the operation is becoming better understood. There is one very important as well as very practical question upon which the leading surgeons seem to be divided; namely, shall operative interference be confined to our large and well-equipped hospitals, with their skillful surgeons, or shall we give it a wider application, and carry it into the country and village practice?

The remarkable cases reported by Dr. Priddy, of Virginia, and Dr. Kollock, of South Carolina, show what can be done in the latter field and under the most unfavorable conditions, and justify us, I think, in extending this method of treatment to all cases in the country as well as the city.

A CASE OF VOLVULUS.¹

BY J. COLLINS WARREN, M.D.

EXAMPLES of this affection are so rare that the notes of this case, though brief, seem worth recording.

Mr. M. fifty-two years of age, had enjoyed good health as a rule previous to his last illness. He had, however, had three mild attacks of bilious colic, during which he was attended by Dr. James B. Ayer. The first of these occurred December 20, 1883; the second, July 15, 1884; and the third, August 26, 1885. During one of these attacks icterus appeared. In 1886, Dr. Ayer consulted me about some enlarged glands in the patient's neck, and a fulness of the abdomen; but his general condition appeared to me at that time quite good.

About July 15, 1887, Mr. M. was taken with another attack of colic, the pain being chiefly at the right of the epigastrium and also in the back, but improved rapidly after a subcutaneous injection of morphine administered by Dr. James Ayer; but on July 22d, the pain returned. Dr. Ayer writes that he had from the first but little appetite, and resisted taking much nourishment, and suffered from inanition throughout. The pulse, temperature, and urine, were at this time normal. Early in his illness he called in a man who practiced massage upon him. Dr. Ayer cautioned him against the use of too much force; and, at his suggestion, the massage was finally abandoned. The abdominal pain became gradually more intense, but it did not prevent him from going out for a short time daily. It was sufficiently severe to require a hypodermic injection of one-quarter to one-third of a grain of morphine subcutaneously, followed by the use of laudanum during the night.

During the last few days of his illness the abdominal pain became more severe, and morphine was given every three or four hours; the abdomen became harder and more prominent. There was no vomiting at any time; the bowels were regular during the first week and then became loose.

On August 8th, Dr. Ayer called in Dr. Fitz, in consultation whose diagnosis is given in his own words:

"The symptoms were not especially urgent until, a short time before my visit, an elevation of temperature and a rapid pulse had been observed for a few days; the abdominal pain was situated near the navel; micturition was scanty and painful. I made no note of the duration of the intestinal obstruction, but am satisfied it was very acute, as the patient's condition gave rise to but little alarm until within a short time of my visit. He appeared anxious, and suffered chiefly from paroxysmal pain near the navel, with a constant feeling of distress in that region. The physical examination of the abdomen showed a moderate general distension, but a deep-seated resistant tumor as large as an infant's head near the navel. It was elastic, sharply defined above, but became gradually lost on palpation downward. Percussion over the tumor gave a dull resonance, and there was dullness in the flanks and in the hypogastric region. The condition was regarded as one of intestinal obstruction (a twist or incarceration); and immediate surgical interference was considered essential."

On seeing the patient with Drs. Ayer and Fitz the same afternoon, it was evident to me as well as to them, that the patient's condition was an extremely

¹ Read before the Boston Society for Medical Improvement, May 23, 1888.

grave one. There was an anxious and pinched expression, and the pulse was weak and rapid. The patient had occasionally moved about the room, although suffering acute pain. It was thought by all doubtful whether the patient could survive an operation; but the signs of obstruction were so marked that it was decided to operate, and give the patient his only chance of recovery.

Operation.—At 4 p. m., August 8th, an incision was made on the median line, diverging slightly to the left at the umbilicus, about four inches in length directly over the tumor. On opening the abdominal cavity and pushing aside the omentum, this tumor was found to be formed by a twisted coil of intestine, which immediately presented itself. On close examination it was found that a loop of intestine, some nine or ten inches in length, had been twisted on itself, and the loop thus formed was bent over slightly to the left. The whole loop was highly congested, and the bent portion of a deep chocolate color. It required some little force to unfold the bowel, and it was then noticed that the omentum was thickened and rigid. Considerable bloody serum flowed from the peritoneal cavity during the operation. The coil was returned to its natural position, and the wound closed with silk suture. All steps of the operation were made with due antiseptic precautions, and the duration of the operation did not exceed twenty minutes.

The patient was put to bed, and hot-water bottles applied, and brandy and ice ordered. During the evening morphine was given for the relief of pain, which still continued, and the patient slowly sank, and died on the following morning, at six o'clock.

The autopsy, performed by Dr. S. J. Mixer, showed the seat of the twist to be about the beginning of the ilium. The condition of the constricted bowel appeared to be good; but the mesentery was greatly thickened, and had lost its flexibility, and the vessels were thrombosed. There was an incipient peritonitis. The liver was somewhat enlarged. The gall-bladder was distended, containing a dozen or more good-sized gall stones. To the immediate right of the gall bladder was an abscess, containing about two ounces of pus, which did not appear to communicate either with the gall-bladder or the peritoneal cavity. All other organs were normal.

The usual seat of volvulus is at the sigmoid flexure and in the lower portion of the ilium. As the twist was situated near the junction of the jejunum and the ilium in this case, it may be regarded as an unusual example of this affection.

Whether the massage of the abdomen which was performed in this case, and was done with somewhat rotary movements, had anything to do with the establishment of a volvulus is quite uncertain. The question may, however, with propriety be raised whether manipulation of the bowels, in a state of unusual sensitiveness caused by deep-seated inflammation, may not be followed by an abnormal peristaltic action, which might render a twisting of a loop of intestine possible. The constant moving about of the patient up to the last day of his illness is also a factor which should be taken into account.

Precisely how long twist had existed in this case it is not possible to state with any certainty, owing to the masking of the symptoms by inflammation elsewhere in the abdominal cavity. The condition of the

bowel and its mesentery, and the firm clots in the mesenteric vessels, showed that strangulation was so far advanced that a return of the circulation to all parts of the implicated area could be made only with difficulty. It seemed better, however, to trust to nature's efforts than to attempt resection of the bowel.

Some individuals appear to be more susceptible to this accident than others. König claims even a geographical distribution for it. It has, for instance, been observed with unusual frequency in Russia. The explanation is supposed to be the unusual length of the small intestine, due to a coarse vegetable diet, the length ranging, in cases observed, from twenty to fifty-six feet. The pedicle of the mesentery is in such cases much shorter in comparison to its length and breadth than in the normal. A long mesentery may occur, also, in individuals with a large abdominal cavity, as in old people with relaxed abdominal walls, or women who have borne a large number of children.

REPORT ON PROGRESS IN THERAPEUTICS.¹

BY FRANCIS H. WILLIAMS, M.D., AND SAMUEL DELANO, M.D.

PASSING now to its therapeutic use, von Jaksch,²⁵ professor at Gratz, in a comparative estimate of various *antipyretics*, gives first place to thallin as the quickest and surest antipyretic, and the one most free from dangers. Von Jaksch recognizes in full the great value of antipyrine, but warns against the intemperate use of a substance which may so easily produce unpleasant consequences. Antipyrine is in no way superior to the others, and he has many times seen bad symptoms follow in its train, as sweating, chills, vomiting, cyanosis, while a destructive action on the blood he considers established. In general, he warns against a misuse of antipyretics, as the reduction of the fever is not always of importance to the patient. Molliere⁴¹ institutes a comparison between a series of typhoid cases treated respectively by antipyrine and the cold bath, the tables showing more or less decidedly in favor of the bath. But nothing could be more untrustworthy than a comparative mortality percentage based on a relatively small number of cases, which Molliere has given us. The bad effects of antipyrine as witnessed by him are, however, of practical import, and in his experience they have been common. In one case there was great prostration and jaundice, with subnormal temperature of 96.8°. In another, death with eclampsia, while the autopsy showed but slight change in the kidney. In two cases out of fourteen there was an eruption.

Beyond its antipyretic use, now well established, and in regard to which there is nothing new, hardly a disease or condition, could be named to the relief of which antipyrine has not been applied. The success in so universal an application of the drug is surprising, and the reports of its effects are full of an enthusiasm that seems exaggerated. On nothing, however, do observers so unannouncedly unite as on its merits as an analgesic. So important have the French believed this use of it that they proposed the substitution of the name *analgesine*.

¹ Concluded from page 358.

²⁵ Robin. Bull. Acad. d. Méd. d. Par., 1887, No. 49, p. 701.

²⁶ Hénocque. Gaz. heb., January 13, 1888, p. 23.

²⁷ Wilson. Jour. Nerv. and Ment. Dis., 1888, p. 46, 43.

²⁸ Von Jaksch. Schmidt's J. B., 1888, H. p. 131; Wien. Méd. Presse, 1888, No. 6, p. 31.

²⁹ Germain See. Bull. Acad. d. Méd., September 6, 1887.

³⁰ Sturge. Brit. Med. Jour., 1888, p. 243.

⁴¹ Molliere. Lyon Méd., 1888, p. 280.

(Fränkel makes five grains equal to one-thirtieth of a grain of morphine). First applied to the relief of migraine (of which some mention was made in last year's report) its use has been extended to all painful affections. In migraine and cephalalgia its success has been firmly established as a fact by scores of observers, so that one should certainly try this remedy first of all. In relieving pain it does not produce sleep, but for the relief of pain and to procure sleep as well, antipyrine and chloral make a good combination. Germain Sée⁴⁰ prefers antipyrine subcutaneously to morphia, because it does not produce bad after-effects, as vomiting, nor excitement, nor stupor, and may be repeated many times without danger of morphine habit (antipyrine habit?). In many cases it is also *curetative*. Germain Sée has used it in various head pains, as rheumatism, gout, neuralgias, biliary and renal colic, angina pectoris, and asthma, and believes it will take the place of morphine. Subcutaneously it is used in fifty per cent. solution, fifteen minims. Hirsch⁴¹ was one of the first to make use of it thus, and had great success in various painful conditions. As a precipitate of antipyrine deposits in the syringe, Hirsch advises washing out with carbolic solution, which indicates when the syringe is clean as its milky combination with antipyrine ceases to be formed. Berdach⁴² has also subdued all forms of pain with the subcutaneous injection. Following the injection is a local feeling of tension and a smart burning sensation, continuing a few seconds; the pain should be relieved within five minutes, and the relief lasts six hours. In a few cases indurations follow at the seat of the injection. Jentlings has seen ecchymoses; no abscesses are reported. Jennings mentions nausea and vertigo as frequent consequences of its hypodermic use. Wilson⁴³ finds five to ten grains constantly relieving pain unaccompanied by fever without producing subnormal temperature. Against all these and many other favorable reports must be placed that of Wossido,⁴⁴ who was only successful with subcutaneous use of antipyrine in one neuralgia out of four.

Still more recently there has been published testimony to the *local anæsthetic* effect of antipyrine. Wolff⁴⁵ has used it in a very large series of cases, and advises its use in all local superficial pains where a prompt action is wanted. For the effect is obtained within five minutes, and lasts ten or twelve hours. The only drawback has been the burning, which lasts about a minute. (For this a combination with cocaine has lately been suggested). This action adapts it to, and Wolff has used it with the greatest satisfaction in, (1) lumbago and muscular pain (in some cases *curetative*); (2) chest pains of phthisis; (3) neuralgias of superficial nerves; (4) for diagnosis (acute chest affections, fractures, etc.); (5) asthmatic attacks; (6) in place of morphia, when that is undesirable, as in children.

At the time of making the last report antipyrine and antifebrin had had a few trials in acute rheumatism. Evidence has now multiplied, and the weight of it in regard to antipyrine is not in favor of its being a substitute for sodium salicylate, though it is useful. Germain Sée⁴⁶ in acute rheumatism with fever, gives salicylate; in rheumatism without fever, or with heart complications, antipyrine. Wilson⁴⁷ finds it much inferior to the salicylate. Fränkel,⁴⁸ in thirty-four cases, observed in all but two, amelioration of symptoms and shorten-

ing of the attack, fifteen relapses, and an average duration of twenty-five days, against 35.2 with the salicylate. Johnson reported four cases in all of which the temperature was reduced, but only one of them was relieved. Brooks has used it in a large number of cases, and in many found it successful. It often succeeds where salicylate has failed, and it is a good remedy for chronic cases.

In whooping-cough there seems to have been substantial success. Sonnenberger⁴⁹ was the first to report a series of cases numbering seventy. The remedy should be given continuously, and especially distinguishes itself in cases taken at the outset. Of these the average duration was three to five weeks, and the number of paroxysms six or seven a day. Griffith,⁵⁰ using it in fifteen cases, declares it shortens the duration and diminishes the paroxysms. His dose was small, not over three grains, and this caused no eruption or bad symptom. Dubousquet-Laborrierie⁵¹ had complete cure in eleven out of fifteen cases, in from twelve to sixteen days. (The ordinary duration he estimates at forty to fifty days). The remedy diminishes the number of paroxysms, and reduces the case rapidly to one of catarrh. Dose, five to fifteen grains to child two years old; fifteen to one drachm to older children. He had two deaths, and two cases of erythema.

In chorea the results are not so satisfactory. While Legroux⁵² considers it the surest and quickest remedy we have, in six cases of his reducing the usual duration of seventy to ninety days to six to twenty-seven days, in doses of fifteen grains, no one would like to repeat in his own practice the experience of Bokenham.⁵³ In the first of his cases twenty grains t. i. d., for two weeks, though it had a good effect on the chorea, produced an erythema and malaise. In the second case there was no effect on the chorea, but an increase of urine and much thirst. Here fifteen to twenty-five grains was taken, t. i. d., for three weeks. In the third case there occurred on the third day vertigo, drowsiness, delirium, lasting five hours; difficult respiration and fever, increased amount of urine, and an obstinate diarrhoea, lasting three days; by this time, though, the chorea was cured! Case four was cured in seven days. In case five the first dose caused vertigo and cold extremities. In the sixth case a rash appeared in two days, and the chorea was worse. With the dose reduced the chorea disappeared with the rash. Bousse⁵⁴ reports one severe case in a child of eight years, where there was improvement after four doses of eight grains, and a cure in nine days under same dose t. i. d. In another case a complete recovery took place in fourteen days, but after the first dose the clonic movements of the limbs (Schlieder Krämpfe) which had been very severe, became less, and talking, before impossible, was again under control. Quite at variance with these observers is Perroud, who does not share their enthusiasm. Out of his four cases, none was there complete cure, and in only one unmistakable improvement (forty-five grains pro die).

The observations on epilepsy are interesting, as one might expect antipyrine to be of service here from its action on the nervous system. Bokenham,⁵⁵ using it

⁴⁰ Fränkel. *Deut. Med. Wochenschrift*, 1887, No. 41.

⁴¹ Sonnenberger. *Lyon Med.*, 1888, Feb. 12, p. 262.

⁴² Griffith. *Ther. Gaz.*, 1888, p. 81.

⁴³ Dubousquet-Laborrierie. *Bull. Théor.*, 1888, May, p. 385.

⁴⁴ Legroux. *Deut. Med. Wochenschrift*, 1888, Feb. 23, p. 158.

⁴⁵ Bokenham. *Præflection*, 1888, p. 246, ib. p. 59.

⁴⁶ Bousse. *Le Franco Med.*, 1888, Feb. 2, p. 157.

⁴⁷ Hirsch. *Berl. Klin. Woch.*, 1887, p. 663.

⁴⁸ Berdach. *Münch. Med. Wochenschrift*, 1888, No. 12, p. 200.

⁴⁹ Wossido. *Berl. Klin. Wochenschrift*, 1888, No. 19, p. 381.

⁵⁰ Wolff. *Ther. Monthie*, 1888, p. 273.

in twenty inveterate cases, found it prevented the seizures in eleven, failed in four, and improved the condition in five. Robin,⁶⁰ on the contrary, does not find it influential over the attacks, but adapted to diminish the secondary mental disturbance, headache, and neuralgias.

Dupuy⁶⁵ extolled antipyrine as a sovereign remedy for sea-sickness, maintaining that fifteen grains, *t. i. d.*, three days before sailing, and continued two days after, gave the best of results in eleven cases, and that, too, in patients who previously had always had a sad experience. His observations were confirmed by Ossian-Bonnet, who found the drug absolutely reliable. Quite the opposite was the experience furnished by (as Rollet⁶⁶ relates) one hundred and twenty French medical men on their way to attend a congress at Oran. The voyage occupied forty-one hours, and almost all were sick, though antipyrine had been freely taken by all, according to agreement. There was the same result on the return.

According to Hénoque,⁶⁷ antipyrine is a remarkable hæmstatic. It may be applied in powder, or solution, or ointment. In epistaxis the powder may be insufflated, or a solution of one to five used. For a bleeding surface, an irrigation of one to twenty is sufficient. For cases of cancer where there is both sloughing and bleeding, antipyrine seems to possess a happy combination of qualities (antiseptic and hæmstatic).

In labor, the claims made for it seem to be worth testing. Thus Steinthal,⁶⁷ in a primipara in whom the os had been slowly and painfully dilating for twenty hours, gave thirty grains by enema. Pain ceased for an hour, but the dilatation and action of the uterus proceeded. Gerard⁶⁸ saw a five months' fœtus born without pain after two enemata of thirty grains each.

ANTIFEBRIN.

Very few special articles have been devoted to antifebrin. Guttman⁶⁹ praises it very highly in rheumatism. He has used it in fifty-two cases of acute, twenty-nine of chronic, and one hundred and sixty-seven of rheumatism in general—certainly quite enough to furnish important conclusions. He has found it wonderfully prompt and sure, but our faith may well be shaken by other statements; namely, that the duration of the longest case (in which all the joints were successively affected) was only seven days; that there was not a single heart affection in fifty-two cases, and only one relapse! The dose was twelve to fifteen grains, *t. i. d.*, and there was not a single bad symptom, except sweating.

In epilepsy, Borosnyoi⁶⁰ compared antifebrin in nine cases with bromide, and with no medicine at all. Bromide is much superior; antifebrin in general does not diminish the attacks, and in cases where increased doses seem to have some good influence it is not advisable to continue it, as Borosnyoi in all cases has observed cyanosis. Germain Séé⁶¹ finds antifebrin better than antipyrine in the pains of tabes, or where there is compression of the cord, or in neuritis; but in some patients with tabes antifebrin has caused marked and alarming cyanosis.

PHENACETIN.

Though this substance was discovered only as late as February, 1887, by Kast and Hinsberg,⁶² yet it is being rapidly tested, and has won much favor as an antipyretic and analgesic. It is the acetyl compound of phenetidin, or the ethyl ether of paramido-phenol. It crystallizes in a form much like antipyrine, and has no taste, color, or odor. It is practically insoluble in hot or cold water, relatively soluble in alcohol (one to thirty), and quite soluble in ether. To use it, an alcoholic solution would make the quantity of alcohol too large, especially for children, so that it is best given in powder, in which form, owing to its absolute tastelessness, it is not disagreeable. An average dose is about seven grains. All observers agree that $gr. xv = gr. xxx$ of antipyrine $= gr. vii$ of antifebrin. Its antipyretic action commences in from one-half to one and one-half hours, according to different observers, reaches the maximum in from two to four hours, and lasts from four to seven hours. This seems a pretty prompt effect, considering its insolubility, but a fact ascertained by Misrachi and Rifat⁶³ is looked upon by these observers as explaining it. Phenacetin is insoluble in lactic acid in the cold, but heat the mixture slightly, and twenty parts become soluble in one.

Given to animals, it is well tolerated. That so large quantities are well borne lead Misrachi and Rifat⁶³ to conclude that it is not toxic, or much less so than antipyrine and antifebrin. Hinsberg and Kast,⁶⁴ by large doses, induced symptoms of poisoning, consisting of rapid respiration, vomiting, staggering gait, cyanosis, and methemoglobin was demonstrated in the blood, but these animals recovered. Given to healthy persons, it has produced but little effect. (According to Hoppe and Kobler, some hypnotic effect, with now and then some sweating).

As an antipyretic, it seems to be absolutely sure, reducing temperature as well as antipyrine, but without its bad effects. Von Jaksch⁶⁴ records that in one case of a child, one-half to three grains caused profuse sweating, with intense cyanosis and collapse, but others have had no such experience in a large number of cases. Hoppe⁶⁵ once saw an exanthema, as from antipyrine; so, also, Valentin.⁷¹ No observer, with the exception of von Jaksch,⁶⁴ has seen the collapse, cyanosis, and vomiting so often associated with the antipyretic action of antipyrine and antifebrin. Some have not even observed sweating to accompany it. It usually produces a sense of comfort, and patients are apt to sleep after it. The duration of the afebrile state seems to be rather shorter than with antipyrine, though, according to Roe, it is longer. To keep up an afebrile state, Misrachi and Rifat⁶³ have found that, at least for phthisical cases, six grains must be given every three hours.

The first doses act with more effect than the later ones, but its continued use, even in children, has not been attended with bad results. Kast and Hinsberg⁶² have shown that it is best given when the temperature is rising, and in one large dose.

⁶² Kast and Hinsberg. *Ctbl. f. med. Wiss.*, 1887, No. 9.

⁶³ Rifat. *Bull. Therap.*, June 15, 1888, p. 481.

⁶⁴ Von Jaksch. *Wein. med. Presse*, 1888, No. 6, p. 41.

⁶⁵ Hoppe. *Ther. Monatshefte*, April, 1888, p. 100.

⁶⁶ Heunier. *Ther. Monatshefte*, March, 1888, p. 103.

⁶⁷ Müller. *Berl. Klin. Wochenschrift*, July 23, 1888, p. 613; and

⁶⁸ Münch. Med. Woch. July 10, 1888, p. 474.

⁶⁹ Röhden. *Deut. Med. Wochenschrift*, May 3, 1888, p. 366.

⁷⁰ Lepine. *La Semaine Méd.*, December, 1887.

⁷¹ Kobler. *Wien. Med. Woch.*, 1887, Nos. 26 and 27.

⁷² Valentin. *Ther. Monatshefte*, July, 1888, p. 330.

⁶⁵ Dupuy. *Deut. Med. Wochenschrift*, Feb. 23, 1888, p. 158.

⁶⁶ Rollet. *Leon Med.*, April 25, 1888, p. 635.

⁶⁷ Steinthal. *Deut. Med. Wochenschrift*, 1888, No. 9.

⁶⁸ Gerard. *Rev. méd.*, d. l. Suisse Rom., 1887, 11, p. 642.

⁶⁹ Guttman. *Berl. Klin. Wochenschrift*, 1887, No. 24, p. 943.

⁷⁰ Borosnyoi. *Ctbl. f. med. Ther.*, March, 1888, p. 47.

⁷¹ Germain Séé. *Ctbl. f. kl. M.*, March, 1888, p. 213.

Quite as unanimous are the different observers in praise of its analgesic qualities. They agree that it is superior to antipyrine, because no bad effects attend it. For this purpose somewhat larger doses are necessary, and its effect is not to be expected before one to two hours. Hoppe⁶⁵ and Heuser⁶⁶ recommend especially its trial in migraine and neuralgias. Hoppe treated twenty-five cases, giving seven to fifteen grains with good success. On the contrary, Misrachi and Rifat⁶⁸ find it inferior to antipyrine in migraine, calling attention to the following fact, which must be often of some importance; namely, that in case of vomiting so often associated with headache, phenacetin, on account of its insolubility, could not be administered by the rectum. These observers, though, used it in forty-five cases of severe neuralgias and muscular pain, with perfect success in eighty per cent., partial in five per cent., and failure in fifteen per cent. The results seemed especially favorable in long-standing, obstinate cases; as, for example, a lumbago of three years' standing, and similar cases. In many the continued use produced a cure. In five cases of pneumonia, besides reducing the temperature, it lessened in a marked degree the pain in the side and dyspnea. Müller⁶⁷ finds thirty grains to one drachm necessary for the relief of pain. Misrachi and Rifat⁶⁸ believe it to have some local anæsthetic action, as tested by holding the hand in an ethereal solution. (The same property has been claimed for antipyrine.) In one case of incurable cancer of the tongue, where the pain was most intense, it had a remarkable effect of this kind used as a powder.

Röhden⁶⁸ calls it a specific in acute poly-arthritis rheumatica. In a large number of patients he has used only phenacetin, and declares that it acts quicker and better than salicylic acid or antifebrin. Forty-five grains *pro die* kept the fever down, and rapidly moderated the pain and swelling. Müller⁶⁷ also finds it a remedy admirably suited for the onset of this disease.

Misrachi and Rifat⁶⁸ find it especially well adapted to chronic gastric troubles attended by pain, because it is non-irritating. Antipyrine has often failed them because of its opposite effect, even when associated with sod. bicarb., as recommended. They indorse it, too, in the suffocative attacks induced by any form of laryngitis in children, as well as in whooping-cough. Lepine⁶⁹ recommends it in the pains of tabes. Like antipyrine, it is antiseptic, but bacteriological investigations by Kobler⁷⁰ have not been satisfactory, on account of its insolubility. Röhden⁶⁸ recommends it highly as an antiseptic powder, forming, with the secretion, a crust, under which healing takes place.

Thus far, then, only good reports have been given of phenacetin, and while it is well not to be too enthusiastic (for, as Misrachi and Rifat say, we are just beginning to find out that *antipyrine* has its drawbacks), it seems likely to prove an addition to our resources.

ICHTHYOL.

This substance has been a remedy of the past year, and some review of its uses may be profitable. It occurs in two forms, in compound with ammonia as a sulfonate of ammonia and with sodium as a sulfonate of sodium. The first has been most used and is of a brown color and syrupy consistency; the soda compound is more like tar. Both salts are soluble in water. Lorenz⁷² found experimentally that it was a

strong antiseptic, and clinically it so proved itself. In burns, especially of the first degree, it is very efficient either with vaseline or in a two to ten per cent. solution. Lorenz first recommended it in erysipelas where he saw the most satisfactory results. Ichthyol, ether and glycerine are used in equal parts, the bluish being painted three or four times a day and wool or cotton applied, (for the most part after twice painting the redness disappears, and the skin wrinkles), or a colloid may be formed of ichthyol one part, ether one part, and colloid fifteen parts.⁷³ In strong enough solution it is an irritant to the skin, but in weaker strength softens the epithelium and causes proliferation of the cells of the rete. Zeisler, and after him Unna, recommended highly its use in many skin diseases such as eczema, sycosis, acne rosacea, herpes, etc. Lartigau⁷⁴ secured good results in all skin affections in which the epithelium is intact. On the other hand, Jackson⁷⁵ has been very much disappointed in its use, it not having shown itself so good in his twenty-two selected cases as many other older remedies.

In skin diseases it should also be given internally. When taken in doses of four to seven grains, the urine diminishes in amount, and turns a violet color. The urea is less, and other important chemical changes are to be noted. Zuelzer⁷⁶ was a very enthusiastic advocate of its use internally, to promote nutrition in chronic wasting diseases; as, for example, chronic nephritis and diabetes. Following him, a favorable influence over many conditions has been attributed to it, but especially over chronic hyperæmias of pharynx and larynx. Asthma, disturbances of digestion, pelvic neuralgias, sciatica, chronic rheumatic and gouty conditions. It was left for Nussbaum⁷⁷ to discover (?) the link which bound these varied affections to the remedy in a true therapeutic relation; this he finds in the physiological action of ichthyol in constricting dilated bloodvessels. In his experience all the affections which ichthyol benefits are associated with, or dependent upon, a condition of vascular dilatation or "anomalies of the circulation." Nussbaum has neither proven this to be a true physiological action of the remedy, nor, what would be attended with great difficulties, shown that his pelvic neuralgias, digestive disturbances, etc., are dependent upon an increased vascularity, and the explanation has very much the look of a theory to harmonize a mass of heterogeneous clinical observations.

The two very latest contributions to the question are those of Lorenz⁷⁸ and Meyer,⁷⁹ and their conclusions are almost diametrically opposed. Lorenz, like Zuelzer, extols ichthyol with well-nigh unbounded enthusiasm for its superb influences on the general condition; maintains that it increases the weight, improves the appetite, general feelings and appearance of the patient, and recommends it in *all* conditions of debility. In his hands the remedy has never caused disturbances. The eructations tasting nastily of the medicine (a result noted by many observers), disappeared in a few days. In chronic rheumatism and chronic nephritis, the results have been of the best.

Meyer,⁷⁹ on the other hand, finds it free from bad consequences in only two out of sixteen patients,

⁷² Amer. J. Pharm., Aug., 1888.

⁷³ Lartigau, *Prog. Med.*, 1887, No.

⁷⁴ Jackson, *J. Cent. and int. Dis.*, June and July, 1887.

⁷⁵ Zuelzer, *Mouthf. f. p. Derm.*, 1886, *Id.*, v. No. 12.

⁷⁶ Nussbaum, *Ther. Mouthf.*, Jan., 1888.

⁷⁷ Lorenz, *Berl. Kl. Wchnschft.*, July 16, 1888, p. 587.

⁷⁸ Meyer, *Ibid.*, p. 588.

among the effects being sickness, vomiting, burning in throat, feeling of fatigue, and in many the nasty after-taste. No improvement in the general condition was noticeable, though all of the sixteen took the remedy continuously for three weeks. In regard to the rheumatism which the patients had in a severe and very chronic form, the results were thoroughly unsatisfactory and discouraging; with the exception of his first case in which the success was marvellous, Meyer could see no effect whatever from the remedy. Indeed, two patients said they were worse.

As to the dose, Nussbaum⁷⁷ gives one and two-thirds grains t. i. d., increasing to ten or twelve t. i. d.

THE IODOFORM QUESTION.

Ever since the Danish experimenters, Heyn and Rovsing⁸² published their sweeping denunciation of iodoform as an antiseptic, observer after observer has come forward with his contribution to the merits of the case. Freyer has put all these together to determine the present status of the question, and abstracts of the various papers, with the references, may be found by consulting his article.⁸⁰ A similar résumé is given by von Kahlden.⁸¹ In general, the results obtained have been such as to confirm the statements of Heyn and Rovsing. In the main, the experiments, whether in artificial culture or on animals, showed that iodoform has no direct antibacteriological action on the different microorganisms in general. Only three observers seem to prove the opposite, and Freyer calls their conclusions strongly into question; for example, Sattler declared that a silk thread covered with a fine layer of iodoform showed only a limited development of bacteria, but Freyer wonders if the iodoform did not form a mechanical protection. In regard to Sönger's conclusions that iodoform hinders the development of the bacillus of anthrax, Freyer declares them flatly contradicted by his own experiments as well as many others, and finds in the prevention of contact an explanation for the failure of the culture to inoculate on a wounded surface.

In any case, Freyer goes on to say, the many positive experiments according to which pathogenic bacteria still continue active and capable of developing, though intimately mixed with iodoform, force us to the conclusion that in general, iodoform is no antiseptic or parasiticide, in the sense of a disinfecting agent, even though on single bacteria, as, for example, the cholera bacillus it acts destructively, and in the case of others hinders growth. Of the application of iodoform to wounds and suppurating surfaces, it may be said that it hinders the free formation of pus in spite of the fact that it is not directly destructive to the cocci of suppuration; but it is to be noted that no surgeon relies upon the direct antiseptic action of iodoform, no matter how enthusiastic he may be in advocating its use; in other words, no surgeon pins his faith to the use of iodoform alone but first conducts an antiseptic operation and then makes the wound aseptic before using iodoform. Even Mikulicz himself, the warmest defender of iodoform, rinses his iodoform gunge in carbolic before applying. The local anæsthetic effect of iodoform should not be forgotten, but its great value to the surgeon lies in its power to diminish secret on, and that for a long period.

This, various observers, but especially de Ruyter,⁸³ believe to be connected with the action of free iodine on the ptomaines generated by the bacteria. De Ruyter found that when pus and iodoform were mixed and allowed to stand, after three days iodine compounds were present, and second, that the ptomaine cadaverin formed an inert compound with iodoform. To draw from this a general conclusion upon the action of iodoform in wounds, however, is unjustifiable, because, even supposing that ptomaines played so important a rôle in surgical infection, hitherto all attempts to demonstrate ptomaines in connection with the commonest and most feared bacilli (suppuration, erysipelas, etc.), have failed; nor would it help the position of iodoform at all because the possession of a positive action on ptomaines (formed secondarily to bacteria), would not save it from condemnation as a surgical antiseptic; namely, a substance capable of disinfecting wounds and of hindering general infection by destroying the bacteria (Rovsing). It would explain, however, as Rovsing⁸⁴ points out, the favorable action of iodoform in regions where decomposition and the formation of stinking ptomaines is unavoidable; namely, in the rectum, mouth, nose, and in part in the vagina. Yet even here the want of antiparasitic power is often displayed, adds Rovsing, for he has repeatedly seen cases of extirpation of the lower jaw or of the uterus per vaginam, die of septicæmia, even when the use of iodoform kept the wounds sweet and fresh in appearance. Neisser,⁸⁵ who is the last to investigate the question, declares that no simple picture of the processes going on in wounds can be formed; in general, he finds iodoform first antiparasitic after certain reducing processes, whether on the part of the tissues or of the bacteria themselves, have liberated free iodine or hydriodic acid, which alone are of antibacteriological significance.

SUBSTITUTES FOR IODOFORM.

(a) *Bituminated Iodoform*.—This originated with Ehrman, assistant in the clinic for syphilis, Vienna, who furnishes a description and report of its use in the *Centrall. f. gesamte Therap.*, July, 1888, p. 385. After much experimenting he succeeded in combining tar with iodoform and forming this substance, which, under the microscope, shows no longer the characteristic iodoform crystals, but only hyaline plates. The iodoform odor cannot be distinguished though it is brought out by a large quantity of water; on this account there might be some odor in wounds with abundant secretion. The peculiar odor is that of tar, which may be covered by styraç. Ehrman gives the results in twenty-two cases of chancreoids and buboes, iodoform being alternated for purposes of comparison; the results were uniformly good, some cases doing well under the new preparation, where the iodoform failed. Ehrman places three points of superiority to its credit, (1) absence of disagreeable odor, (2) absence of the eczema and erythema which iodoform often causes, (3) a uniformity of action on granulating surfaces, which iodoform often seems to lack.

(b) *Szoiodol*.—This compound was introduced by Lassar (*Ther. Monatshefte*, 1887, p. 439). It is a white powder, showing under the microscope flakey leaf-like crystals, containing iodoform (42%) phenol and sulphur, easily soluble in water and alcohol, and very stable

⁸⁰ *Therap. Monatshefte*, June, 1888, p. 287; July, p. 334.

⁸¹ *Centbl. f. Bakteriologie*, 1877, pp. 169 and 191.

⁸² Heyn and Rovsing. *Fort. chrifte d. Med.*, June 15, 1887.

⁸³ De Ruyter. *Schmidt's J. B.*, 1888, No. iv, p. 19.

⁸⁴ Rovsing. *Fort. d. Med.*, August 1, 1888, p. 569.

⁸⁵ Neisser. *Virch. Archiv.*, Bd. 110, lit. 2, 3.

in mixtures. It is borne well in powder and ointment by the healthy skin, and is soothing to an inflamed and irritable integument. Lassar used it in five to ten per cent. powder and paste with the zinc oxide,—amyl, vaseline base of his paste, or with laudlin. He had good results with it in acute and chronic eczemas,—herpes, impetigo, inflamed skin and mycotic diseases. In varicose ulcers he prefers it to salicylic acid. Fritsche (*Ther. Monatshefte*, 1888, June, p. 283), has used it in diseases of the nose and larynx with the greatest satisfaction. There are, in all, four combinations of the substance with bases; namely, with sodium, potass, zinc, and mercury. The first two, of a bitter, soapy taste and smelling of lye; if applied to the nasal mucous membrane pure, cause only a moderately strong burning, and an increased secretion of mucus. The zinc ointment must be reduced to one-fifth to one-tenth, and the mercury salt, which is very irritating, to one-tenth to one-twentieth. All were used as powders only. In atrophic catarrhs, ozema and pharyngitis sicca. Fritsche had much better results than with other applications. The secretion was increased, the swelling of mucous membrane, where present, diminished. Operative wounds in the throat and nose healed much more quickly than usual. All of the thirteen cases of tubercular ulceration showed tendency to cicatrize, but at the time of writing no ulcer had completely closed.

SACCHARIN.

This substance, now in use since 1879, when it was discovered by Remsen and Fahlberg, has been the subject of much discussion of late because of the extensive use being made of it in manufactures. In France, especially, advantage has been taken of its cheapness and its being free of import to use it in great quantities under the name of *sucre de cologne*, in place of cane sugar, in the making of syrups, liquors and confections; while in Germany beer and cocoa have been thus adulterated. Its degree of sweetness is 280 times that of sugar. So important did the question become that finally measures have been adopted in both England and France restricting its use to purely medicinal purposes.⁶ In medicine its chief uses have been in diabetes, and as a corrigent, and it has been looked upon as harmless; but several observers have recently come forward to point out its bad effects. Worms⁷ especially emphasizes the necessity of a more exact knowledge of the physiological action of saccharin. Given to five diabetics in the dose of half a grain, t. i. d., in three of the cases it could not be borne longer than eight or ten days, but then caused nausea, severe gastric pains, and a persistent sweet taste in the mouth. So far as known it is not toxic, and it is said that the whole amount taken is eliminated in the urine unchanged. Perhaps the digestive disturbances may have been owing to impurities, as other observers have found it well tolerated; or the explanation may be found in the fact recently observed by Paul, that saccharin (solution 1-500) retards in an appreciable manner the digestive action of the gastric and pancreatic fluids. Paul⁸ has also shown that it has marked antiseptic properties. A solution 1-700 prevents development of the straphylococcus pyog. aer.; it also destroys all the microbes

developed in saliva, a solution 1-200 prevents ammonia change in the urine. Consequently Paul recommends its employment in fluids used for lavage of stomach and bladder. Mosso had previously noticed the fact that the urine of animals taking it kept longer, and Little⁹ has reported a series of cases where urine ammoniacal from chronic cystitis has become sweet and acid under its effect. In one case of multiple calculi the urine which had been intolerably putrid for three months, became normal in three or four days and continued so.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.

COUNCILLORS' MEETING.

A STATED meeting of the Councillors was held at the Medical Library, Boston, on Wednesday, October 3, 1888.

The President, DR. D. W. CHEEVER, called the meeting to order at 11 A. M. Seventy-seven Councillors were present.

Delegates to other medical societies were appointed:

Vermont Medical Society: Drs. F. H. Brown, of Boston; F. H. Thompson, of Fitchburg.

New York State Medical Association: Drs. E. B. Harvey, of Westboro'; J. F. A. Adams, of Pittsfield.

Medical Society of the State of New York: Drs. W. Lullags, of Boston; F. W. Chapin, of Springfield.

In accordance with the recommendation of the Committee on Membership, one Fellow was allowed to resign, and eight Fellows were placed on the retired list.

On recommendation of the Committee on Publications, the following votes were passed:

That the Councillors hold their annual meeting on the first day (Tuesday) of the annual session of the Society, at 11 o'clock A. M., instead of at 7 P. M., as has been the custom in recent years.

That the Committee of Arrangements be instructed to provide a place for the delivery of the Shattuck Lecture on the evening of the above-named day.

The committee announced that they had selected Dr. George B. Shattuck, of Boston, to deliver the Shattuck Lecture at the meeting of the Society in 1889, and that he had accepted the appointment.

The Committee on Medical Diplomas reported the names of several colleges, recommending that they be added to the list of those whose diplomas are recognized for the purpose of admission to the Society. The recommendation was adopted.

Dr Walcott offered the following, which was adopted:

That in the opinion of the Councillors of the Massachusetts Medical Society the present epidemic of yellow fever in several States of this Union has again made evident the imperative need of some organization on the part of the general government for the protection of the public health; an organization that shall be independent of existing bureaus, and solely devoted to this most necessary function of any form of government.

That this resolution be sent to the President of the United States, to members of Congress, and to the Boards of Health of the several States.

⁶ B. M. & S. J., 1888, Vol. 99, p. 187.

⁷ Worms, La. Kib. med., May 13, 1888, p. 231.

⁸ Paul, C. Rev. u. d. Acad. d. Med. July, 13, 1888, p. 443; Gaz. Hebd., 1888.

⁹ Little, Dub. J. Med. Sc., June, 1888, p. 439.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

CHARLES HARRINGTON, M.D., ACTING SECRETARY.

REGULAR MEETING, Monday, May 28, the president, DR. WADESWORTH, in the chair.

DR. J. C. WARREN showed a patient from whom the superior maxilla had been extirpated for sarcoma of the antrum, and gave the following account of the case:

The patient was forty-one years of age. About four years before his entrance into the hospital he began to have difficulty in breathing through the left nostril, with occasional epistaxis. Three years ago polypi were removed by Dr. Knight, but with slight relief to the obstruction, which has continued since with occasional discharge of bloody fluid from the nostril. About eight months ago, a bulging in the roof of the mouth was noticed, which gradually increased.

The finger introduced into the naso-pharynx detached a growth protruding from the left nostril, and occupying the vault of the pharynx. This growth was not observed in an examination made a few months earlier, showing that the tumor had grown from the maxilla, and was not a naso-pharyngeal polyp.

The incision through the integuments was that which follows the lower edge of orbit, side of nose and median line of upper lip. The growth was found to have absorbed the greater portion of the maxilla. A few nasal polypi were removed also.

The hæmorrhage was easily controlled. On stitching back the cheek a few sutures were taken to unite the mucous membrane of the cheek to the soft palate, and thus diminish somewhat the opening left in the roof of the mouth. The cavity was packed with iodoform gauze, and the surface of the wound in the mouth was painted with "antiseptic varnish," (equal parts of compound tincture of benzoin and an ethereal solution of iodoform), which covered the wounded surfaces with a coating not easily removed. The external line of incision was painted with iodoform collodion, no other dressing being applied.

Convalescence was uninterrupted, the temperature not rising above 99°.

As you see, the external scar is now scarcely perceptible, and the falling in of the cheek is prevented by a plate with an air space, supported in part by a gold spring attached to two false teeth in the lower jaw.

Articulation, as you hear, is perfect. A careful examination of the interior of the pharynx, made recently by Dr. Languaid, showed that there was no sign of a return of the disease. Dr. W. F. Whitney's microscopical report showed the tumor to be a round-cell sarcoma.

DR. E. H. BRADFORD reported a case of laparotomy for purulent peritonitis. He said:

The case is interesting simply for the result after laparotomy for probable tubercular peritonitis in a child. The child was brought to the hospital with an enlarged abdomen. It was aspirated upon the side, and found to contain pus. The abdomen was then opened, and two quarts of thick fluid removed. This differs from most cases of laparotomy for tubercular peritonitis, in that it was not simply serum with clots of tubercular matter, but it was thick pus, as thick as in any abscess. It was just pointing at a point near the umbilicus, and it was opened at that spot. A drainage-tube was inserted, which ran down to the

true pelvis, and the cavity washed with 1-10,000 corrosive and hot water, and the wound pulled apart in order to see what the contents of the peritoneum were. After the fluid had been removed the liver sank, and you could see the surface of the liver in the wound. It seemed to be dotted with tubercles, as well as one could tell. A portion of the peritoneal sac was removed and sent to the Medical School for examination, but no tubercles were found, so that it seems to be a question as to what the diagnosis is. The rest of the history presents nothing peculiar except this, that at the end of two dressings — five days I think it was — the contents ceased to be purulent, and there was a serous discharge from the bottom of the cavity. The cavity not draining perfectly, it was dressed, I think, every day for a while, and at the present time there is a small cavity about an inch deep which still secretes serous fluid. The drainage-tube was removed at the end of a fortnight, I think, and the wound allowed to heal up, but the temperature rose, and it was found that there was still a certain amount of the cavity which had not filled up. Consequently the drainage-tube was re-inserted, and the patient now carries a small drainage-tube, there being a small cavity. The operation excited no shock to speak of, as will be seen by the temperature chart, and she was up and walking at the end of a fortnight.

I operated upon a second case a few days ago, where there was very little fluid. The intestines were adherent, and tubercles were found. This also shows the safety of laparotomy in these cases, for there was no shock. In fact, this child, the day after the operation, wanted to get up and walk around. The evacuation of the pus seemed to give relief.

DR. MAURICE RICHARDSON: Did I understand Dr. Bradford to state that this pus was in the general peritoneal cavity, and not shut off at all?

DR. BRADFORD: It was not shut off at all. I could put my hand above the liver and down into the pelvis, and the intestines were all pushed back upon the spinal column, so as to be flattened out, and they did not seem to be adherent. In fact, it was not an encysted peritonitis at all. I could put my hand around anywhere. I made an incision so that I could get in pretty nearly my whole hand. What the pathology of the case is I don't know. I expect Dr. Rotch to be here. It was his case first, and afterward it came under Dr. Morrill's care, and it was at his suggestion that I made the laparotomy. The child was in a shocking condition before the operation, and she is fattening up now.

DR. HOWANS: It is an interesting question in these cases whether a careful toilet of the peritoneum should be made or not, it having been suggested that careful sponging in between the coils of intestines might tend to produce a slight inflammation, perhaps a slight general peritonitis, which, the theory is, would tend to cause an absorption of the tubercular deposits, thus aiding the cure. The question would be, in a case of this sort, whether a child in such poor condition could stand such an operation; but it seems to me certainly advisable in such cases to make a very careful toilet in the hope that it might tend towards the absorption of the morbid products.

DR. BRADFORD: Dr. Rotch saw the case before the operation, and perhaps would say something about the diagnosis.

DR. ROTCH: The case was exceedingly interesting,

and I should say a rare one. The child had, besides a very much distended abdomen, almost complete flatness on the left side of the chest, excepting that there was a small portion of the upper left front, which was resonant. It also had some flatness in the right front, beginning at the third rib. Above that it was resonant, but there was also a certain amount of flatness in the lower part of the right back, and a few râles in the right axillary region. I supposed that the pressure of the fluid in the abdomen, by pressing on the lungs, was partly causing the increased area of flatness, but I always suspected that there was something more; that there was an infusion in the left chest at least; and that the absolute dullness in the right chest was caused by pressure from the liver, the fine râles being of an edematous character. I thought there was a possibility of there being a left-sided empyema with perforation of the diaphragm. That should be thought of. Unfortunately was not able to examine the child after the operation until to-day, as it has been covered with antiseptic dressings. The impulse of the heart was displaced and raised. I supposed that the impulse displacement was from pressure. To-day I find a certain amount of dullness, not amounting to the flatness which existed at the time that Dr. Bradford performed the operation upon the abdomen, but dullness in the lower two-thirds of the left axillary region and in the lower two-thirds of the left back. The impulse of the heart is not so far to the left as it was before, but there is a certain amount of dullness over the lower two-thirds of the sternum, which I should account for by the physiological hypertrophy of the heart at that age. The child is at an age when you frequently find dullness over the lower two-thirds of the sternum which you do not find in younger children, or after the twelfth or fourteenth year. It seems to me that there are adhesions in the left side of the chest, and that the thoracic part of the case is of some importance, and has not been fully explained. It is known that in children especially, when there are these large abdominal effusions, we do get a great deal of dullness, amounting to flatness, in the chest, apparently from pressure, that passes away. But this has not passed away; there is a certain amount left there. I am not fully prepared to say whether there was an empyema in this case, because I cannot explain the signs in the right side unless there was something also on that side. We now find a return of respiration and fremitus, but only to a certain degree. They are very much such signs as you get in the adult chest with very thick adhesions. But on the right side, where you would expect the lung to expand, I still get signs of dullness and diminished vocal resonance and fremitus, so that I think it is a very complicated case. There were some little white pin-head points on the liver. We did not find any of the shot-like feeling that was found in the case that Dr. Cabot operated upon. I mention these thoracic signs merely because I think you have to take them into consideration in the case, as indicating a possible empyema with perforation.

Dr. BRADFORD: There seemed to be some induration in the region of the cæcum, but the history was not that of perityphlitis.

Dr. ROTCH: The child had pertussis and measles about four months before being seen by me. The abdomen was noticeably enlarged only one week before she entered the Hospital, and about ten days before she was operated upon.

Dr. FRANKLIN B. STEPHENSON presented a patient with

PUERILE GENITALIA.¹

Dr. MAURICE RICHARDSON, in presenting

A NEW FORM FOR DRESSING IN CASES OF EMPYEMA,

said: It has been for a long time a very desirable thing to get a tube in empyemas which will have a valve action. At least, I have considered it so, and I have tried to get for the dressings in the permanent incision in empyema a tube which will allow drainage of the chest and prevent air going back again, so that when the lung has been gradually expanded it will be held out. Dr. Cabot's original dressing consists of some gauze and a layer of mackintosh, making a valve action. In a prolonged case that I had I got up a valve more complicated, consisting of the double tube, such as Dr. Cabot uses, with a guard of rubber, such as the dentists use for a rubber dam. Next to that I use borated cotton of sufficient thickness, and a piece of the rubber sheet on the outside of that. There is absolutely no impediment to the evacuation of the contents of the chest. In the cases in which I have used this the lung has expanded very well.

Dr. J. C. WARREN read a paper entitled

A CASE OF VOLVULUS.²

Dr. RICHARDSON: I saw this case at the time of operation, and the most remarkable thing about it, as I remember it, was that the strangulated bit of intestine could be felt very distinctly through the abdominal wall. I never before had any idea that that condition produces a distinct tumor, as it did in that case.

Dr. PRIZ: I have very little to add in regard to the case. It represents one of the rarest forms of obstruction, and, in regard to its seat, one of the rarest places for the twist to occur. At the same time, it illustrates in certain respects the difference in the condition of the abdomen which exists when the twist is high up. It was conspicuous in this case that the abdomen was not considerably distended. There were not many intestinal coils, and obstinate, continued vomiting was not a conspicuous symptom. These conditions have been considered of importance in discriminating between the twist high up and that low down, the twist low down giving extreme distension of the abdomen and very persistent nausea and vomiting. Although the operation in this case, as well as in many other cases, terminated fatally, at the same time, the discovery of any such a lesion as this at the post-mortem examination is always suggestive that an operation might have prevented death, if in time. In most of these cases the peritonitis is so far advanced, and the prostration of the patient is so extreme at the time of the operation, that only a few hours of life remain afterward; but in this patient that Dr. Warren operated upon the time of the occurrence of the twist did not appear evident from the symptoms.

Dr. HOMANS: In regard to the massage as having had any effect in the causation of the twist, it may not be uninteresting to say that in cases of ovarian tumor with twisted pedicle there is not infrequently a history given of patients having been in the habit of rubbing the abdomen to relieve the pain and make it feel easier, so that possibly the massage might have had something to do with it.

¹ To be published later in this Journal.

² See page 380 of the Journal.

DR. CUTLER: I would like to ask Dr. Warren how far the thrombi reached that were found at the post-mortem examination; whether they went beyond the mesentery.

DR. WARREN: The autopsy was performed hastily, Dr. Fitz not being present, and that point was not accurately determined.

DR. CUTLER: Of course, if it were high up, the question of resection would not come in. I would like to ask, also, if the pedicle was long or the mesentery unusually long.

DR. WARREN: I should say that there was no especial abnormality in that regard. In this case the bowel was in precisely the condition of bowel in strangulated hernia. It was pushed up, apparently, against the abdominal wall and crowded over, and that peculiar kink which it had was somewhat hard to free. It had to be snapped out straight before it was untwisted.

I would like to mention a case that I saw yesterday, a fibrous tumor of the uterus, which was a case that I had seen some months before. It had come to the Hospital for diagnosis, and the diagnosis had been made of fibroma of the uterus, with ascites. As in some cases, there was a leak through the umbilicus, and a small tumor filled with fluid was present at the first examination. There was no hernial or omental protrusion, because the fluid occupied the abdominal cavity and pressed back the contents. Lately, the patient was tapped at the Hospital for purposes of diagnosis, but no operation was performed. She had been tapped twice since her removal from the Hospital by Dr. Bush, whose patient she was. Yesterday morning, according to his statement, she had an attack of indigestion from some fish or something which she had eaten for breakfast. Vomiting continued, with great pain in the region of the umbilicus, and Dr. Bush was sent for, and found a strangulated umbilical hernia. I saw the case with him in the afternoon, and we made attempts at reduction by taxis, but these were rendered futile by the very large amount of fluid in the sac, which prevented us from getting at the intestine, although it could be felt at certain points by pressure. The sac was laid open, and a considerable quantity of dark intestine was found protruding from a hole which would admit about the two fingers. The strangulation was relieved in the usual way, the intestine returned, and the wall sewed up with deep sutures, and the incision wound was sewed up with superficial sutures. The patient was in a comfortable condition to-day. I mention the case as a complication which occasionally, I believe, is known to occur as the result of ascites.

Recent Literature.

Hygiene for Base-Ball Players. By A. H. P. LEUF, M.D., Director of Physical Education at the University of Pennsylvania and at Swarthmore College. Octavo. pp. 131. Philadelphia: A. J. Reuch & Co. 1885.

The importance of the "National Game" as a factor in the life and amusements of the people of the United States is illustrated by the appearance of a number of pamphlets upon the subject, and especially

by the fact that it has been considered worth while to publish a book like the "Hygiene for Ball-Players," treating the subject from a somewhat scientific standpoint.

The ideas presented are not strikingly new to the ball-player, but their collection and arrangement in some sort of order is done here for the first time. Throwing, and especially pitching, being the muscular acts of the greatest individual importance in playing base-ball, it is to them that a large amount of space is devoted. The muscles and bones used in these acts are looked at with a sufficiently great thoroughness to give the player an idea of their functions, and the figures used to illustrate this part of the book are enough to answer their purpose. The greatest interest to a non-player will probably lie in the chapters devoted to the explanation of "curve-pitching."

In these days, the sceptics as to the actual "curve" of the ball in any direction but downwards in its course from pitcher to catcher seem to have disappeared entirely, although it is not yet ten years since the writer was told by a professor of physics that such a thing was impossible, as being a violation of the laws of nature, this gentleman ascribing the sometimes violent efforts of the batter to reach an out-curve entirely to the effects of an "optical delusion." By what freak this sudden imperfection of eyesight should make its appearance he was unable to say. It has been an undisputed fact among ball-players that a pitched ball may be made to alter its course in a plane different from that naturally produced by the force of gravity, and that this alteration in course is at the command of the pitcher of the ball. The old explanation of the methods of production of these curves — given for the most part by scientific men — were laughable in many cases. In the book under consideration there is the first accurate description of the phenomenon that the writer has happened to see in print.

Bruises and dislocations are the principal accidents to which ball-players are liable that require immediate attention, and the value of the immediate application of ice to such injuries has been so often illustrated that the stories of recoveries told here are not in the least incredible. The advice, to let liniments alone, is good, as well as that suggesting persistence in the moderate use of a sore or strained member. The exercises suggested for putting a man in condition for active work upon the ball-field, and for keeping him so after he is there, are good, and it is refreshing to see the great importance of "going slow" at first thoroughly insisted upon.

Altogether, the book is a valuable one to put in the hands of young enthusiasts, and it might be well for some of the older heads to look at it — the better to be ready to help the boys in learning the "great American game." H. C. E.

The Disorders of Menstruation. By EDWARD W. JENKS, M.D. Being No. 11 of the Physicians' Leisure Library. Geo. S. Davis, publisher. 1887.

This little manual considers amenorrhœa, menorrhagia and metrorrhagia, dysmenorrhœa and derangements of the climacteric. It covers the whole ground of the subject in a clear, practical and concise manner, and though there is nothing novel in it, it will serve as a safe guide for the practitioner to follow. It is in a convenient form to be put in the physician's satchel and read in the intervals of busy work.

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THE PRESIDENT'S PENSION VETOES.

Few doctors can have escaped the importunities of the old soldier who desires to connect his own military service with the Pension Bureau. Some of the most uncomfortable duties that fall to the lot of the conscientious physician lie in connection with pension applications. Wife, children, relatives, friends, and legal adviser of a deceased soldier conspire to obtain from the doctor some sort of an affidavit that will assist in gaining a few dollars a month from the government. The doctor might be excused for saying in his wrath that the patriot legions of twenty years ago are transformed into cormorants, if he retracts it when his wrath has passed away.

Perhaps nothing more significant has ever been published than a recent pamphlet which has been freely circulated among physicians — and we know not how much wider — entitled the "Soldier's Manual." It contains no reference whatever to a soldier's duties, but is made up of a digest of the United States pension laws and kindred subjects. The government has wisely endeavored to care for its old soldiers, but its very liberality begets greed. The necessary rules of the Pension Bureau seem sometimes hard, and attempts to evade them are numerous. Congress is often appealed to to override regulations, and the frequent personal bills are not very closely scrutinized. The President has reviewed somewhat closely these special pension bills and issued a series of special pension vetoes, which, from their number, if for no other reason, attract very general attention, and are praised or condemned, usually according to the political views of the reviewer. Of most of these pension vetoes we do not pretend to judge, but many of them are so strictly medical in the questions involved that it seems almost a duty to consider them, if it can be done, from a pathological standpoint.

Universal medical experience will endorse the remark that most careful scrutiny on the part of pension authorities is necessary to avoid fraud. To preserve

the beneficent character of the pension as a gratuity from a grateful country to those who have suffered for their country's sake, it must not be given to those whose disabilities were incurred in drunken brawls or in attempts to desert, nor ought it be granted on fraudulent certificates.

To remain as it ought — a mark of honor — a pension must be granted on reasonable grounds, and not because of the importunity of the applicant or the favoritism of his congressional representative, and the vetoes of the President seem calculated to restore the pension to its proper status.

One class of the vetoes seems specially worthy of the doctor's notice; namely, those relating to the surviving relatives of soldiers who have committed suicide. To pension the wife and family of a suicide because of his death would present to some of our old soldiers a most dreadful alternative. Doubtless many of them would trouble their consciences not a little as to their duty did they know that their death would insure an income to those dependent upon them, and it is not impossible that suicide might be urged upon some of them by the relatives who expect to survive.

In regard to one particular case, the President says: "The verdict returned upon the coroner's inquest, founded upon a friendly examination of all the facts surrounding the melancholy death of this soldier, made at the time of death and in the midst of his neighbors and friends, both by what it contains and by what is omitted, together with the other facts developed, lead me to the conclusion that if a pension is granted in this case, no soldier's widow's application based upon suicide can be consistently rejected."

At the Paris International Medico-Legal Congress of 1878, Dr. Jeannel made the very striking proposition that the corpses of all suicides be furnished to the medical schools for dissection, except in cases where the victims were insane or irresponsible. He believed that such a regulation would seriously diminish the number of suicides. It was objected that such a law would aggravate the situation of families so unfortunate as to have a suicide occur in their midst, to which it was answered that the consequence upon the family was one of the real arguments for the passage of such a law, because the suicide, if sane, would consider the consequences of his act, and the results to the family must operate in many cases as an enormously powerful restraint. If disastrous consequences to surviving friends be regarded as a restraint, the opportunity to benefit one's family would certainly be an inducement to suicide.

There can be little doubt that cases arise for which the laws are not adequate, where Congress may wisely override the strict legal ruling of the Pension Bureau, as it has done with the executive approval in numerous instances. The recently issued report of the Pension Commissioner gives somewhat fully the manner in which special pension bills are investigated at the Pension Office, which shows that the greatest care is exercised in the matter.

This is not an attempt to prostitute the JOURNAL to political purposes, but simply to express what must seem evident to medical men, that some, at least, of the special vetoes are right and just, from a medical standpoint.

ON THE TREATMENT OF HÆMORRHIAGES BY REVULSION OVER THE HEPATIC REGION.

THE *Bulletin Générale de Thérapeutique* (July 30th) contains an interesting article by Dr. L. H. Petit, in which this writer insists on the rôle of the liver in the pathogeny of hæmorrhages, and the benefits of revulsion over that organ. He reports seventeen cases, mostly examples of hæmorrhages from hæmorrhoids, from the nares (alarming epistaxis), from the lungs (hæmoptysis in the phthisical), in which the application of a large fly-blister over the liver promptly and effectually arrested the hæmorrhages. Many of these cases came under the observation of Professor Verneuil, occurring in his service; six of them were borrowed from Dr. Alexander Harkin's report in the *Lancet*, October 30, 1886.

Dr. Harkin, it will be remembered, treated his cases of epistaxis, bleeding piles, etc., by the application of a blister, eight inches by four inches, for eight hours over the region of the liver, to be followed by cotton-wool dressing. The rationale of this treatment is thus set forth: "The frequent occurrence of epistaxis in youth is evidently due to the excitement and hyperæmic condition of the liver and digestive organs during the period of active growth, and the constant demands on its functional activity. The liver at this stage closely approximates to the condition in after life which is the causal factor in the development of piles, and as such is equally amenable to treatment, in accordance with etiological principles; the derivative that cures the hæmorrhoidal flux as certainly puts an end to the epistaxis, the outcome of hepatic congestion." Dr. Petit takes the same view, and remarks that physicians and surgeons, from Galen downward, have been in the habit of treating rebellious epistaxis by the application of cups to the region of the liver when the blood flowed from the right nostril, and over the spleen when it flowed from the left; this practice, however, was wholly empirical, no reason being assigned for it. To Verneuil belongs the credit of systematizing this mode of treatment (he makes use, sometimes, of large fly-blisters, sometimes of cold douches over the hepatic region), and of showing the intimate relationship which exists between the hepatic circulation and that of the mucous membranes of the entire alimentary tract, especially of the hæmorrhoidal vessels of the rectum. Verneuil also calls attention to the frequent coincidence between hepatic congestions, whether occurring in connection with the latent and benign affections of the liver, or in cirrhosis and epistaxis, or bleeding piles, the latter yielding when the hepatic affection is relieved.

In confirmation of this position, an interesting case

is reported which occurred in the practice of Dr. Tachard, of Colombes, (cirrhosis, epistaxis, arrest of the hæmorrhage by a blister); another occurring in the service of M. Reclus (rebellious bleedings from mouth and nose, cure effected by a blister over the right hypochondrium); a third communicated by Dr. Salles, of Boulogne on the Seine, in which gingival and nasal hæmorrhages, accompanying cirrhosis of the liver, were kept in abeyance by like means. Even grave hæmoptyses, occurring in phthisis, have proved amenable to the same treatment.

Dr. Petit terminates his paper with the following conclusions:

"Divers spontaneous hæmorrhages, medical or surgical, supervene in persons who are subjects of a chronic hepatic affection.

"A great many facts having demonstrated that there exists a close relation between spontaneous hæmorrhages and chronic affections of the liver, it seems logical to treat the hæmorrhage by revulsion, practised over the region of the liver. This treatment has determined the final arrest of the blood-flow in the majority of cases.

"Whenever, then, the practitioner is in presence of a patient suffering from spontaneous hæmorrhage, he will find an indication to examine the state of the liver, and if this organ does not present its normal characters, to apply a blister over the hepatic region."

MEDICAL NOTES.

— Dr. William Osler, Professor of Clinical Medicine in the University of Pennsylvania, has been appointed physician to the Johns Hopkins Hospital and Professor of Medicine in the Johns Hopkins University, at Baltimore. Dr. Osler took his degree at McGill University, Montreal. He subsequently studied in London, Berlin, and Vienna, and, in 1885, was appointed Gulstonian lecturer in the Royal College of Physicians, London, and in 1886, Cartwright lecturer in the College of Physicians and Surgeons, New York. Professor Osler resigned his chair at the University of Pennsylvania to accept the position at Baltimore. The clinic at the Hospital will probably be open to a limited number of physicians this winter, but not yet to medical students.

— The French minister of education has given his approval to the custom established for some time in Austria of pensioning professors who have reached the age of seventy, and pensions have already been granted to a certain number of professors, notably to Professors Bouchardat and Hardy in Paris, and Townes in Nancy.

— The following delicious coroner's verdict is in print, apparently a specimen of Baboo English, that is English as written by a native of India. This was rendered upon an ill-fated Hindoo. "Pandoo died of the tiger eating him; there was no other cause of death. Nothing was left except some fingers, which probably belonged to the right or left hand."

—On August 31st, the chemist Chevreuil in Paris, celebrated his one hundred and second birthday. Of other chemists now living, Bunsen, in Heidelberg, is 77 years old; Professor Kopp, author of a "History of Chemistry," 71 years; and A. W. Hofmann, in Berlin, 70 years; Professor Fresenius, of Wiesbaden, has also reached the age of 70. Wöhler, died at 84; Dalton, at 78; Faraday, at 76; Gustav Rose, at 75; Regnault and Berthollet, at 74; Gay Lussac, at 72; Priestley, at 71; and Liebig, at 70.

—The *Lancet* says that Dr. Dumont, of Louvain, has undertaken a series of researches on the effect of coffee drinking on the urine, from which it appears that, though the diurnal quantity of urine is not seriously interfered with, the composition undergoes a very decided change. Dr. Dumont kept the subjects of his researches for some days on ordinary diet, the constituents of which were determined. During part of the time only was coffee added, the quantity being three cups — corresponding to about two ounces of roasted coffee — per diem. By regular and careful analyses of the urine, it was found that during the days when coffee was taken the urea passed was increased by about seventy-five grains. The effect on the urea was produced immediately the coffee was commenced, and as soon as it was omitted the quantity of urea returned to that which it had exhibited previously.

—The *British Medical Journal* says that the construction of the new waterworks at Yokohama, under the superintendence of General Palmer, R. E., was a formidable undertaking. The intake is about twenty-five and a-half miles from the filtering beds, and the work was rendered extremely difficult in various places by the rugged and hilly nature of the country, which necessitated the opening of a temporary road, the erection of several bridges, and the excavation of cuttings; but, in spite of all obstacles, the undertaking was completed within the specified time. The British consul at Yokohama, in his report, anticipates that the health of the town will be greatly improved by the introduction of a plentiful supply of wholesome water, and that it will prove instrumental in protecting the community against the ravages of cholera. In consequence of the success which has attended this undertaking, several other towns have applied for a similar water-supply, and the subject is now being carefully studied. In Tokio, also, arrangements are about to be made for improving the supply. The difficulty at present consists in providing the funds, amounting to about a million sterling. The city has 1,300,000 inhabitants, and enough water would have to be provided for 2,000,000. The question is a pressing one for Japanese towns, because the wells are, for the most part, fouled owing to their proximity to the rice fields.

NEW YORK.

—The New York State Medical Association held its fifth annual meeting at the Hotel Brunswick, October 9th, 10th, and 11th, with Dr. John Cronyn, of Buffalo, presiding. In addition to the usual addresses and a large number of separate papers, there was on

each of the three days an elaborate, set discussion. The first was on "Nosography," introduced by Dr. Alfred L. Carroll, of New Brighton, Staten Island, and participated in by Drs. E. G. Janeway and C. A. Doremus, of New York; S. T. Clark, of Lockport; F. M. Ross, of Elmira; H. D. Didama, of Syracuse; and others. The second was on "Tumors" (general consideration of tumors from a surgical point of view), introduced by Dr. J. W. S. Gouley, of New York, and participated in by Drs. J. D. Bryant, F. S. Dennis, Stephen Smith, and W. T. Bull, of New York; C. B. Nancrede, of Philadelphia; C. T. Parkes, of Chicago; E. M. Moore, of Rochester; and others. The third was on "Puerperal Septicæmia," introduced by Dr. C. C. Frederick, of Buffalo, and participated in by Drs. W. T. Lusk, H. M. Biggs, and John Shady, of New York; E. D. Ferguson, of Troy; F. W. Ross, of Elmira; and others. The annual banquet was held on Wednesday evening, and on Thursday the following officers were elected for the ensuing year: President, Dr. William T. Lusk, of New York; Vice-Presidents, First District, Dr. S. H. French, of Montgomery County; Second District, Dr. R. C. McEwen, of Saratoga County; Third District, Dr. Elias Lester, of Seneca County; Fourth District, Dr. T. D. Strong, of Chautauqua County; Secretary, Dr. E. D. Ferguson, of Troy; Treasurer, Dr. J. H. Hinton, of New York.

—In consequence of the prevalence of small-pox in certain districts of the central and western portions of the State, the State Board of Health has issued a circular giving minute details for isolation and disinfection, and urging the necessity of vaccination. The disease is said to have broken out in the Cattaraugus Indian reservation, and Dr. J. C. Davis, of Versailles, has been appointed by the Board to act as Health Officer on the reservation, subject to the approval of the Indian Commission, and charged with the duty of making general vaccinations.

Miscellany.

THE NEW OUT-PATIENT BUILDING OF THE BOSTON CHILDREN'S HOSPITAL.

THE Children's Hospital moved into its present quarters on Huntington Avenue in December, 1882. When first occupied, the hospital consisted of a central administration building and one wing, which contained the two wards. A second wing was intended to complete the building. The fourth story of the central building had a separate entrance, and was intended for use when needed for the isolation of contagious cases.

As originally built, it was intended to devote the basement of the central or administration building to the out-patient service. When the building was first erected the horse-cars were not running on the avenue, and for a long time afterwards they ran only at comparatively long intervals, and in consequence the out-patient service was small. With the new facilities of the hospital, and in spite of difficulties in reaching the

place, it grew rapidly. As means of reaching the hospital have increased and its reputation has grown, the out-patient service has also grown, until the original quarters have proved entirely insufficient. Not only was the room insufficient and the ventilation inadequate, but the presence of so large a number of little patients with their parents was felt to be a source of danger, if not of present harm, to the more permanent patients on the upper floors.

A new building was soon seen to be necessary. The points of a desirable out-patient department were carefully considered until, after much thought, plans were agreed upon, and a building erected in accordance therewith, which is but just completed and occupied.

The new building comprises three stories and a basement. The third story is not intended for out-patient use. It has an entirely separate entrance, and does not communicate in any way with the lower stories. It is intended to be available for the complete isolation of patients with contagious diseases, thereby relieving the fourth story of the administration building from such use.

The entrance for out-patients is in the centre of the length of the building, where they enter through a vestibule into a spacious, well-lighted waiting-room, amply supplied with retiring rooms. A little room close by the entrance is intended for the immediate reception of any child that presents an appearance that arouses suspicion of contagious disease, or of such a state of filth as makes it an improper object to be in the same room with other children. At the right of the entrance is the record-room, where the previous record of an old case is looked up, or a preliminary record of a new case is taken. Opening from the other side of the waiting-room is a small room devoted to the surgeon in charge, and another room intended to be used as a sewing-room, and supplied with a sewing machine and other necessities.

Running from the waiting-room towards the Huntington Avenue front is a hallway, from which open on each side a series of small rooms, each containing a table and chair. Each of these rooms is intended for the reception of a mother and child, and in each one a child can be undressed and examined separately. It is intended to put children known to be particularly noisy and unruly into two rooms in the most remote corners, where their noise will be least likely to disturb and frighten those children still waiting in the reception room. There is also in the north-east corner of this floor a small room fitted up as an operating room, where such operations as may properly be done on out-patients can be performed. This little room presents some interesting features, with its rubber mat with corded edge under the operating table, and its general fittings for antiseptic work.

The basement contains rooms for work in plaster-of-Paris, with apparatus for suspending patients, and what may be described as a gymnasium for exercises intended to correct deformity or develop special limbs and muscles. There is also upon this floor a large room intended as a museum or depository for examples of various splints and models, and such plaster casts of deformities as naturally accumulate in such a hospital.

In the rear in a one-story addition is the workshop, with a gas engine to supply power, where the apparatus of the hospital is made.

The second story is devoted to the medical depart-

ment. Here the number of small rooms is less, but sufficient to allow of auscultation and careful examination in separate apartments. There is also a room intended for use as a lecture-room. This floor also contains a dark room for photography, which has become an important adjunct to hospital service.

It is not easy to give a very accurate idea of this building by mere verbal description; but as a whole it presents as comfortable and convenient quarters for out-patient service as can be desired.

The new wing of the hospital proper is soon to be added, probably within another year.

THE TREATMENT OF WHOOPING-COUGH.

In a leading article, the *Therapeutic Gazette*, September 15th, sums up the results of several reports on the value of antipyrin and of sulphur fumigation in controlling pertussis.

Dr. Genser in a paper read before the Society of Physicians in Vienna, states that he has treated more than two hundred cases of whooping-cough on two entirely different plans of treatment. In one class various medicinal powders were employed after the method of Michael, by insufflation into the nasal fossæ; the other class was treated by the administration of the antipyrin given internally. The plan of insufflation was employed in seventy-six cases, the powder of benzoic acid being used. The results obtained were only passable, the average treatment lasting for forty-three days. About the only advantage of this treatment being that, as a rule, it suppresses vomiting, although this advantage is greatly counteracted by the difficulty of application and the high state of excitement which its employment usually occasions. On the other hand, antipyrin administered by the mouth was generally efficacious, the author's results appearing to show that this remedy not only diminishes the number of spasms of coughing in the twenty-four hours, but also their duration and intensity. In the majority of cases the duration of treatment was not more than twenty-four days. The average dose was $1\frac{1}{2}$ grains daily for each year of age, so that a child of five years would take in forty-eight hours fifteen grains of antipyrin given in syrup. In five cases complicated by pulmonary lesions this method only gave negative results.

Dr. Laborderie published in the *Bulletin Général de Thérapeutique*, May 15, 1888, results even more favorable. In eleven cases he obtained a complete cure in twelve to sixteen days, although he lost one case, a little girl of 1 year of age, and one of $3\frac{1}{2}$ years from capillary bronchitis and broncho-pneumonia. In these two cases, where the attacks came on forty to sixty times a day, antipyrin appeared to have no useful effect. He also had an incomplete success in a child who had forty to fifty attacks a day. This child, however, was rapidly cured when moved to the country. Finally, in a child 10 years of age the treatment had to be abandoned on account of nausea, diarrhœa, and gastric distress.

Dr. Laborderie always employs antipyrin without any other internal medication, although he makes use of fumigations of turpentine. The dose which he employs has been from 5 to 15 grains for children up to two years of age, and from 15 to 60 grains for elder children and adults. He gave it in Vichy water

flavored with raspberry syrup. He recommends that the patients, after receiving this medicine should take a little milk or soup. He claims that children with rare exceptions support this method of treatment. It is not dangerous; it is easy to administer and to oversee; the spasms were rapidly calmed, and the period of decline occurs within a few days.

Mr. F. E. Manby, in *The Practitioner* for August, 1888, confirms the value of sulphurous acid fumigation in whooping-cough.

The method is the following:

"The children are in the morning put into clean clothes and removed elsewhere. All their clothes, toys, etc., are brought into their bedroom and sulphur is burnt upon a few live coals in the middle of the room. The fire is allowed to remain in the room for five hours, and then the windows and doors are thrown open. The child sleeps in the room the same evening. About twenty-five grammes (a little under an ounce) of sulphur to every cubic metre may be burnt; this is equivalent to rather more than ten grains per cubic foot. As the additional precaution was taken of having the day-room fumigated in a like manner during the night, the children practically lived in an atmosphere of diluted sulphurous acid gas for some days."

Mr. Manby claims that in every instance, without exception, his observation leads him to look upon the method as a practical cure in whooping-cough; the cough is lessened in frequency, expectoration of the thick clogging mucus much facilitated, paroxysms lessened in violence, and sickness after them as a consequence scarcely known. The children pick up quickly, and in no case has the cough lasted in its form of reduced violence more than a fortnight after the treatment commenced. The action of sulphur can scarcely be attributed to anything but its germicide properties, so that the natural inference would be to combine sulphurous fumigation, which at best can do no harm, with the internal administration of antipyrin.

PHYSIOLOGY AS SHE IS TAUGHT IN THE PUBLIC SCHOOLS.

We have previously had occasion to refer to the defective and distorted character of some of the textbooks authorized by school boards for the teaching of physiology (and of the effects of alcohol and tobacco). That the work accomplished is sometimes as unsatisfactory as the methods used, is shown by a thoughtful article by "a teacher" in the *Popular Science Monthly* for August. The curious hodge-podge produced in the minds of many pupils is illustrated by instances taken from the writer's own observation, and by others quoted from English reports on the same subject, from both of which we ask no apology for quoting the following somewhat extended citations:

"It is supposed, says the *London Architect*, that sanitary science may be taught as easily as morality by listening to a teacher reading from a book. The children fail to catch the words, or they attach no meaning to them. Here, for example, are verbatim copies of the exercises in one of the Greenwich schools:

"Infections are brought on by bad smells, such as small-pox, measles, scarlet fever, glass-pox, &c. they are brought on by bad drainages, sewers; they must be well ventilated. Infection disease are caught by touching such as charcoal, chloride of lime, etc.

Measles, fever are called disinfectionous because they are catching.—Fainted. If a person as fainted, take her out in the open air lay her down with her head. And do the clothing round the neck and dashed cold water in the face and hand and put smelling-salts to her nose. Digestion is paines in the head, paines in the stomach, bad tempers. From digestion comes consumption, information, head-ache, neuralgia."

"In the English official reports we read that 'an examination of girls in board schools for prizes offered by the National Health Society revealed some curious items of information.' One reply to 'Mention any occupation considered injurious to health' was: 'Occupations which are injurious are carbolic acid gas, which is impure blood.' Another pupil said: 'A stone-mason's work is injurious, because when he is clipping he breathes in all the chips, and then they are taken into the lungs.' A third says: 'A boot-maker's trade is very injurious, because the boot-makers press the boots against the thorax; and therefore it presses the thorax in, and it touches the heart; and if they do not die they are cripples for life.' With a beautiful decisiveness, one girl declares that 'all mechanical work is injurious to health.' A reply to a question about digestion runs: 'We should never eat fat because the food does not digest.' Another states that 'when food is swallowed it passes through the windpipe'; and that 'the chyle flows up the middle of the backbone and reaches the heart, where it meets the oxygen and is purified.' Another says: 'The work of the heart is to repair the different organs in about half a minute.' One little physiologist replies: 'We have an upper and a lower skin; the lower skin moves at its will, and the upper skin moves when we do.' One child enumerates the organs of digestion as 'stomach utensils, liver, and spleen.'

"In the clever little book compiled by Miss Le Row, entitled 'English as She is Taught,' appear the following genuine answers by pupils in reply to questions upon physiology and hygiene. Presumably, most of these answers are from American pupils in American schools."

"...sillogogy is to study about your bones, stum-mick and vertebry.' 'When you have an illness it makes your health bad as well as having a disease.' 'The body is mostly composed of water and about one half is avaricious tissue.' 'The body has an infinite number of bones joined together by the joints.' 'The spinal column is made of bones running all over the body.' 'Digestion belongs to the lower animals.' 'Digestion is the circulation of blood.' 'Digestion is reducing our food to plump.' 'Digestion is when food is taken into the stomach.' 'The gastric juice keeps the bones from cracking.' 'The eyes are set in two sockets in a bone which turns up at the end and then becomes the nose.' 'The three coverings of the brain are the diameter, the perimeter and the trachea.' 'The growth of a tooth begins in the back of the mouth and extends to the stomach.'

As an additional contribution to answers, we add the following, taken by the writer from the note-books of pupils of one of the *high schools* of this country:

"Anatomy is dissecting of bodies generally lifeless.' 'Anatomy is study of parts of the body, physiology, study of action of parts, hygiene is application of these parts' (italics are ours). 'Kinds of bathing, adapted to the age, quantity, quality and health of the person.' 'Superuator are the muscles about the

back.' 'The hygiene of a muscle should have proper rest and exercise.' 'Hygiene is the study of the time and manner of the action of the muscles and large blood-vessels.' 'The month is the commencement of the alimentary canal, and it extends through the throat, œsophagus into the stomach.' 'The extent of the month helps the digestion of food.' 'Nervous system a decided part of the body.' 'A young person who goes to parties and has great excitement has generally some brain trouble, such as St. Vitus dance.' 'It is far more reliable to drive out the fire of a room and put on extra clothing than it is to put on no clothing and sit in front of a burning fire.' 'Soap is important in carrying off the fat of the body.' 'What is eaten by the body has sometimes been taken as food.' 'The third cavity is the pelvis, which contains the vital organs.' 'In a diet of twenty-four hours a man should eat some of all the

nutritious articles.' 'The first step in digestion is mastication and insalivation. Second, the muscles of the gullet.' 'A person is in fair health when he has the ability to accommodate himself to change of climate and the ability to endure.' 'Respiration is the exchange of carbonic acid for oxygen.' 'The substitution of catholic for carbonic acid is frequently met with.' 'The times for bathing depend on the age of location and of heat of the individual.' "These exercises may be thought amusing," says the English periodical already quoted, "but it should be borne in mind that every word represents more or less pain to some unhappy child in endeavoring to recall ponderous words which were without meaning. Education in sanitary matters is desirable, but, as it is conducted at present in public schools, it must injure children's minds by habituating them to the use of words which they cannot understand."

REPORTED MORTALITY FOR THE WEEK ENDING OCTOBER 6, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	621	287	22.21	14.88	9.60	1.92	4.00
Philadelphia	1,016,738	344	124	15.40	18.40	3.10	3.90	3.90
Brooklyn	751,432	207	138	20.46	12.87	9.90	1.65	4.95
Chicago	700,000	286	1.9	23.45	22.11	7.10	4.55	7.70
St. Louis	449,160	178	77	32.48	12.88	10.08	1.68	15.12
Baltimore	437,155	158	76	18.40	10.08	4.50	4.41	5.04
Boston	407,024	171	63	22.62	13.34	10.44	5.84	5.83
Cincinnati	325,000	—	—	—	—	—	—	—
New Orleans	248,000	113	39	21.36	11.57	7.12	.89	5.34
Buffalo	240,000	—	—	—	—	—	—	—
Washington	225,000	96	35	31.20	21.84	10.42	4.16	4.16
Pittsburgh	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	125,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	24	8	29.12	16.64	20.80	4.16	4.16
Charleston	60,145	48	8	16.64	8.32	4.16	2.08	8.32
Portland	40,000	14	2	28.56	28.56	7.14	14.28	7.14
Worcester	76,328	39	—	20.48	20.48	10.24	5.12	—
Lowell	60,750	—	—	—	—	—	—	—
Cambridge	64,079	31	15	35.53	12.62	12.62	9.69	6.46
Fall River	61,203	28	11	39.27	7.14	10.71	17.85	7.14
Lynn	51,467	17	0	17.94	29.40	5.88	5.88	—
Lawrence	40,175	16	4	12.50	6.25	6.25	6.25	—
Springfield	39,652	11	1	27.27	—	—	27.27	—
New Bedford	36,298	16	9	—	25.00	—	—	—
Somerville	33,307	13	5	46.32	7.69	38.45	7.69	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	11	6	—	9.09	—	—	—
Chelsea	27,552	11	0	9.09	—	—	—	9.09
Haverhill	24,979	10	3	—	30.00	—	—	—
Taunton	24,246	9	2	11.11	—	—	—	—
Dorchester	21,784	12	3	8.33	25.00	8.33	—	—
Gloucester	23,167	—	—	—	—	—	—	—
Newton	21,105	6	3	16.66	25.00	16.66	—	—
Malden	18,942	5	1	50.00	—	—	—	20.00
Fitchburg	17,534	11	6	18.18	9.09	18.18	—	—
Waltham	16,051	3	0	—	33.33	—	—	—
Newburyport	13,839	5	1	20.00	—	—	—	—
Quincy	13,336	—	—	—	—	—	—	—

Deaths reported 2,610: under five years of age 1,060; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 548, consumption 371, acute lung diseases 183, diarrhœal diseases 215, diphtheria and croup 142, typhoid fever 85, whooping-cough 46, scarlet fever 29, malarial fever 26, cerebro-spinal meningitis 11, measles 10, small-pox one. From whooping-cough, New York 16, Brooklyn, Baltimore and Washington five each, Philadelphia, St. Louis and New Orleans three each, Cambridge two. From scarlet fever, New York 10, Philadelphia seven, Chicago six, Brooklyn four, Fall River and Lynn one each. From malarial fever, St. Louis, New Orleans and Washington six each, Brooklyn three, New York two, Philadelphia, Baltimore and Charleston one each. From cerebro-spinal meningitis, New York four, Chicago and Worcester two each, St.

Louis and Baltimore one each. From measles, New York nine, Boston one. From small-pox, New York one.

In the 28 greater towns of England and Wales with an estimated population of 3,398,275 for the week ending September 22d, the death-rate was 18.0. Deaths reported 3,242; infants under one year of age, 1,093; acute diseases of the respiratory organs (London) 179, diarrhœa 325, measles 50, whooping-cough 61, scarlet fever 40, fever 38, diphtheria 29, small-pox (Hull) one.

The death-rates ranged from 11.1 in Bristol to 27.8 in Preston; Birkenhead 19.8; Birmingham 15.5; Bradford 20.2; Brighton 13.9; Hull 15.0; Leeds 22.3; Leicester 18.3; Liverpool 18.4; London 15.8; Manchester 27.6; Nottingham 14.5; Portsmouth 22.8; Sunderland 21.8.

In Edinburgh 17.5; Glasgow 19.2; Dublin 18.5.

The meteorological record for the week ending October 6, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, Oct. 6, 1888.	Barom-eter.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather. ¹		Rainfall.		
	Daily Mean.	Daily Mean.	Maximum.	Minimum	8.00 A. M.	8.00 P. M.		Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Sunday, ... 30	29.08	44.0	54.0	36.0	65.0	52.0		58.0	N.W.	N.W.	7	5	C.	C.	.010	T.
Monday, ... 1	29.16	48.0	52.0	38.0	64.0	54.0		78.0	S.W.	S.E.	8	12	F.	R.	.13	.13
Tuesday, ... 2	29.51	55.0	64.0	50.0	57.0	69.0		83.0	S.W.	N.	6	11	R.	C.	.30	.30
Wednesday, ... 3	29.80	42.0	56.0	40.0	77.0	69.0		73.0	N.	W.	12	12	O.	C.	0.20	T.
Thursday, ... 4	30.10	44.0	53.0	34.0	58.0	54.0		76.0	W.	W.	18	6	C.	C.		
Friday, ... 5	30.04	57.0	69.0	47.0	77.0	73.0		74.0	S.	S.W.	12	12	F.	F.		
Saturday, ... 6	29.95	55.0	57.0	53.0	85.0	88.0		86.0	S.W.	E.	7	5	R.	R.		.24
Mean, the Week.	29.46		57.0	43.0				73.0								

O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. A., FROM OCTOBER 6, 1888, TO OCTOBER 12, 1888

MCACHEM, FRANK, major and surgeon, U. S. A. Died at Fort Douglas, Utah, October 4, 1888, at twenty minutes past one, P.M.

DAVIS, WILLIAM B., captain and assistant surgeon, U. S. A. Is granted leave of absence for six months, by direction of the acting Secretary of War. Paragraph 12, S. O. 232, A. G. O., October 5, 1888.

MAUS, LOUIS M., captain and assistant surgeon. Is relieved from duty at Fort Schuyler, N. Y., by direction of the acting Secretary of War, and will report in person to the commanding officer, Fort Porter, N. Y., for duty at the post. Paragraph 10, S. O. 236, A. G. O., Washington, October 10, 1888.

SPENCER, WILLIAM G., captain and assistant surgeon, U. S. A. Is granted leave of absence for two months, by direction of the acting Secretary of War. Paragraph 11, S. O. 236, A. G. O., Washington, October 10, 1888.

BANISTER, JOHN M., captain and assistant surgeon. The leave of absence granted in S. O. No. 210, September 10, 1888, from this office, is extended one month, by direction of the acting Secretary of War. Paragraph 2, S. O. 232, A. G. O., October 5, 1888.

WILLIAMS, JOHN W., major and surgeon, on duty with battalion on duty at Fort Wadsworth, N. Y. H. Is granted leave of absence for one month, with permission to apply to the proper authority for an extension of one month. Paragraph 1, S. O. 209, Headquarters Division of the Pacific, Governor's Island, New York City, October 4, 1888.

By direction of the acting Secretary of War, the following-named officers of the Medical Department will report in person on the dates set opposite their respective names, to the President of the Army Examining Board, Army Building, New York City, for examination for promotion

MCKEILL, JAMES C., captain and assistant surgeon, Oct. 16.
MCRIELEY, GEORGE, captain and assistant surgeon, Oct. 16.
JOHNSON, RICHARD W., captain and assistant surgeon, Oct. 9.
Upon completion of the examination the officers named will rejoin their proper stations. Paragraph 5, S. O. 231, A. G. O., October 4, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING OCTOBER 13, 1888.

BATES, N. L., medical inspector. Detached from the "Pensacola" and placed on waiting orders.

FARWELL, W. G., surgeon. Ordered to United States Receiving Ship "Franklin."

SCOTT, H. B., passed assistant surgeon. Detached from the New York Bay yard, and ordered to the Naval Hospital at Mare Island, Cal.

MACGILLIVER, A. F., surgeon. Ordered to duty at headquarters of the Marine Corps.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held Monday, October 22, at the Medical Library, at quarter of eight, P.M. Reader: Dr. H. E.

Stedman: Subject: "On Medical Advice regarding the Marriage of Subjects with a Personal or Family History of Insanity." Dr. S. J. Mixer will report "A Case of Torio's Operation for Obstruction by Uterine Fibroids, saving both Mother and Child."

F. B. HARRINGTON, M.D., Secretary.

OBITUARY. DR. JOSEPH SARGENT.

Dr. Joseph Sargent, for half a century an eminent practicing physician at Worcester, died of pneumonia after a few days' illness, on October 13th. He was the son of Col. Henry Sargent, of Leicester, and born December 1815. In 1838 he graduated from Harvard College, and after a year's study with Dr. Flint, at Leicester, entered the Harvard Medical School, and received a degree in 1837. After a year in the Massachusetts General Hospital, he studied for two years in Europe, and in 1840 began practice at Worcester. He rapidly gained the confidence of the people and of his colleagues, and by constant study has kept himself abreast with his profession in its remarkable growth of two generations. He was a Counselor and Vice-President of the Massachusetts Medical Society, and the founder of the Worcester Society of Medical Improvement, which has existed for forty years. He had great influence in the establishment of the Worcester Lunatic Hospital and in the building of the City Hospital and the Washburn Memorial Hospital. Dr. Sargent's interest was not confined to his profession; his was a rare combination of professional sagacity, business insight and integrity, and literary and scientific attainments. He held positions of trust in several Worcester institutions, and was a trustee of the recently established Clark University. For many years he was a member of the council of the Worcester Antiquarian Society, and his articles were always full of information and welcomed for their literary excellence. He possessed the cheerful temperament that makes a physician's presence in a sick room so welcome. In 1841 Dr. Sargent married Miss Emily Whiting of Cambridge, who survives him, with four children of mature years.

OPENING OF THE BUILDING AT THE CHILDREN'S HOSPITAL.

The Managers of the Children's Hospital, on Huntington Avenue, cordially invite the medical profession to visit the new out-patient's building on Saturday, October 20, 1888, from 10 A.M. to 4 P.M.

BOOKS AND PAMPHLETS RECEIVED.

Embryo of a Parasitic Entozoon from a Human Tooth. By Jabez Hogg. F.R.M.S., M.R.C.S., etc. Reprint. 1888.

Remarks on Pelvic Inflammations and the Management of their Residues. By William Warren Potter, M.D., Fellow of the American Association of Obstetricians and Gynecologists, Buffalo, N. Y. Reprint. 1888.

Electrolysis; Its Value in Diagnosis as well as in Treatment of Intra-Abdominal and Extra-Pelvic Tumors by the aid of a New Instrument. By Eugene C. Gehring, M.D., St. Louis, Mo. Reprint. New York: William Wood & Co. 1888.

Hayes Process of, and Apparatus for Generating and Applying Anæsthetics. With Testimonials, and an Address on the Science of Anæsthesia, delivered to the Cincinnati Medical Society, December, 1887, by Dr. Hayes, of Pittsburgh, Pa.

Original Articles.

SOME GYNECOLOGICAL CASES TREATED BY THE FARADIC CURRENT.

BY F. H. DAVENPORT, M.D.,
Assistant in Gynecology, Harvard Medical School.

THE increased attention paid to the value of electricity in various departments of medical knowledge is a sufficient excuse for bringing the results of my experience to your knowledge to-night. The number of cases I have to report is not large, nor can the result in many of them be called striking. They may, however, serve to throw some light upon the limits within which we may expect this agent to do good.

In no branch of medicine has electricity made such rapid strides as a therapeutic agent, as in gynecology. Within a few years Mundé has published an article on "Electricity as a Therapeutical Agent in Gynecology," in the *American Journal of Obstetrics*, and Engelmann has read a most elaborate paper on this subject before the American Gynecological Society, published in the first volume of their Transactions.

Apóstoli, whom Engelmann, possibly with an unconscious wit, calls the apostle of gynecological electro-therapeutics, has familiarized us with his, it may be, extreme views of the possibilities of this agent, and recent standard works on diseases of women, are not complete without a chapter devoted to its consideration.

The application of electricity is by no means a simple matter, and aside from the abstruseness of the subject, the expense of the apparatus, and the expenditure of time necessary to carry out the treatment have undoubtedly contributed to its neglect. The batteries themselves are expensive, and the instruments of precision necessary to an intelligent appreciation of what is being done, necessitate an even greater outlay. Most writers claim that the application must be a prolonged one, fifteen minutes to half an hour, though Engelmann has had most satisfactory results from much shorter sittings, from two to eight minutes, the average being perhaps five. These objections are valid when one is prepared to treat a large number of cases including tumors, in the elaborate and precise way recommended by the distinguished writers above mentioned, but it has seemed to me that good results, equal to and even better than those obtained by other well-known methods, may be attained by this agent applied simply and with inexpensive apparatus.

One of the questions to be solved before beginning treatment in the given case, is which current to employ, the galvanic or the faradic, nor are the instructions for their use clearly laid down in most writings on the subject. Engelmann says the galvanic current, which is constant, has a decided chemical action, hence it is valuable above all for destroying morbid tissue when strong currents are used, for promoting absorption of morbid structures and stimulating healthy nutrition when weaker currents are used. The negative pole is the most active chemically, possesses the highest destructive power, and tends to produce hæmorrhage; the positive pole is less painful, sedative with mild currents, and is decidedly hæmæstatic.

The faradic current, which is interrupted, exerts a mechanical effect upon muscular tissue, and is used to

stimulate to contraction best with slow interruption of the current, while with very frequent interruptions it has a soothing effect. There is not apparently much difference in the therapeutic action of the different poles, though the negative pole is the more painful.

These are in general the principles upon which we apply the different currents, and though in the main the results have been satisfactory, yet longer and more careful observations are needed to enable us to decide which current is to be used, and how.

I have for some time been in the habit of applying the galvanic current in cases of nervous debility, where sleeplessness was a prominent symptom. A mild current given at bedtime along the spine for from ten to fifteen minutes, has given very good results. So, too, in cases of pain in the ovarian region, even though there were no pathological changes to be made out by vaginal examination, the galvanic current has given a certain amount of relief. For the past six months I have been using the faradic current in these cases, and as it seems to me with better success.

The battery which I have used has been the small battery of Gaiffe, which is probably familiar to you all. It is not a powerful battery, but I have almost never felt the necessity of a stronger current than this will furnish. Where the poles were to be used on the external skin I have used the metal electrodes, either covered with chamois skin or absorbent cotton. If one pole is to be applied to the vagina or uterus, an olive-shaped metallic tip on an insulated rod has been used. These tips come of different sizes, and can be either introduced into the uterine canal, or the larger sizes used in the vaginal cul-de-sacs. The usual duration of the applications has been ten minutes, rarely twelve or fifteen. I will give briefly the history of a few cases in which I have used the faradic current.

CASE I. Mrs. B., consulted me in August, 1887. She is thirty-six years old, has had one child, one miscarriage. Her principal complaints are: constant backache, bearing down, dysmenorrhœa and menorrhagia, the sickness lasting two to three weeks, and using from twenty-five to thirty napkins. Examination showed the uterus in normal position, but enlarged, the cavity measuring three and one-half inches. Diagnosis, areolar hyperplasia. Applications of tincture of iodine and later impure carbolic acid, were made at intervals to the uterine canal, and she was given fluid extract of hydrastic canadensis in the intermenstrual period, and ergot at the time. The dysmenorrhœa was relieved, and the amount of the flow lessened, so that in December she used only nine napkins. Since then the average has been twelve to fourteen. In December, a Chadwick pessary was introduced to relieve some of the pressure from the heavy womb. This helped the backache and bearing down, but the size of the uterus remained the same. April 2d, began faradization with one pole against the cervix, the other on the abdomen over the fundus uteri. This was applied twice a week for ten minutes. The second day following the treatment there was always increased pain, but on the whole the patient felt better. April 30th, the uterus measured two and three-quarters inches, and May 16th, two and one-half. During the first few treatments the patient distinctly felt the uterus contract rhythmically at intervals of perhaps a minute, such contractions being accompanied by pain.

¹ Read before the Boston Society for Medical Observation, June 4, 1888.

CASE II. Mrs. S., first consulted me in March, 1886. She was four months pregnant, and severe flowing had just come on. Miscarriage occurred that night, and the placenta, which was adherent, was removed with fingers, curette and placental forceps the next day. She gave the following history: Had been married eighteen years, had three children, and this was her fourth miscarriage. Menstruation, which had been scanty and at irregular intervals before marriage, had been gradually growing more profuse, until it now occurred every twenty-four days, and lasted a week. The flowing was profuse, accompanied with clots. On account of the menorrhagia, she had been curetted three times with but little effect on the amount of the flow. Suffers a great deal from backache, bearing down pain, especially before the sickness, constipation, pain in the left ovarian region. An examination after the patient had recovered from the miscarriage, showed subinvolution of the uterus and vagina, the uterus retroverted and flexed, the cavity measuring four inches, cystocele and rectocele, less from loss of the perineum than from the laxness of the vagina. The womb was restored to its normal position by systematic packing, and held in place by a soft rubber bulb pessary. The length of the pessary, five inches, gives an idea of the amount of the subinvolution present.

The pessary was worn a year with comfort, but there was little change in the size of the uterus. March 1, 1887, the operation on the posterior wall was performed. This was followed by a considerable amount of nervous prostration, from which the patient recovered slowly. Her local symptoms improved after the operation. Menstruation was less profuse, backache and bearing down had disappeared.

March 17, 1888, began faradization to the uterus. One pole was passed into the uterine canal as far as the fundus, the other placed on the abdomen. This method of application was found to be painful, and was followed by considerable soreness the next day: the olive-pointed electrode was, therefore, substituted, which was passed just within the external os. Applications were given every other day, except during the menstrual period, for two months. The uterus then measured on three different times two and three-fourths inches, three and one-half, and three inches. This variation seemed to me to depend upon the time of the month when the measurement was taken, as the larger depth, three and one-half inches, was found just before the menstruation. Two days after the flow it was three inches, about midway between the two periods it was only two and three-fourths. There has been a noticeable improvement in the patient's general condition and strength. The tone of the vagina has improved, so that a smaller pessary will soon be needed.

CASE III. Miss R., thirty-three years old, consulted me in February, 1888, with the following symptoms: For some months has been troubled with pain in both groins, especially the left; has constant backache; menstruation regular, but scanty, using from three to six napkins, and inclined to grow less from month to month. She has usually some dysmenorrhoea, and is also troubled with slight leucorrhoea. Has indigestion, soreness in pit of stomach, sour eructations, and constipation. Vaginal examination showed an enlarged, sensitive, and prolapsed left ovary, which was two or three times its normal size. There was also slight endocervicitis. The faradic current was applied from the left cul-de-sac of the vagina as near

the prolapsed ovary as possible to the abdomen, over the ovarian region, for five minutes, and for five minutes over the stomach and bowels. The treatment was begun February 24th and given every third day, and there was almost immediate improvement in the digestive symptoms. March 17th, after seven treatments, the prolapsed ovary could not be felt *per vaginam*, and the patient reported herself as feeling well, and discontinued treatment.

CASE IV. Mrs. IL, thirty-two years old; one child fourteen years ago. Had a very severe laceration of the cervix and perineum, both of which were operated on: the cervix in 1885, and the perineum in 1887. In September of that year she came under treatment again for pain in her left side, situated two or three inches above the groin, very severe for two or three days before the catamenia, and relieved by the onset of the flow. When the flow stops for a day, which it is apt to do, the pain is excruciating. There is at times pain during the interval, and a constant feeling of soreness. Her general health has been very much improved since the two operations. Vaginal examination revealed nothing but a possible increased thickening of the left side.

The galvanic current was first tried, nine to twelve cells of the McIntosh battery. This application was followed by sleeplessness and depression. After several treatments these effects ceased, but there was rather an increase of pain for twenty-four hours, and when it did reappear it was more severe than before. Treatment was discontinued. March 2, 1888, faradization was begun, and applied twice a week for two months from the vagina to the abdomen part of the time, and part of the time from one side of the abdomen to the other. The relief to the pain was quite marked for two days following the application, and, on the whole, its severity was lessened. The pain at the last menstruation was not so severe.

CASE V. Mrs. G., twenty-five years old; married five years; no children. Was well until marriage; then menstruation began to be delayed, until it now occurs at a varying interval of from five to eight weeks. It lasts five days, and she flows rather profusely, using twenty-five or more napkins. She suffers considerable pain all over the abdomen the first twenty-four hours, so that she cannot bear the weight of the bed-clothes. She has, also, cramp-like pains and pain in the thighs. Suffers somewhat from leucorrhoea. Has constant backache and pain in both groins. A satisfactory examination being impossible on account of the sensitiveness and the thickness of the abdominal walls, ether was given. The examination showed an enlargement of both tubes and a general thickening of the tissues, in which the ovaries could be felt, but from which they could not be isolated. The uterus was normal.

The faradic current was first applied from each cul-de-sac to the abdomen, the only apparent effect of which was a diminution of the soreness of the abdomen. The menstruation in April, which occurred after a few applications, was, if anything, more painful, but the amount was less, only seventeen napkins being used. The constant pain in the back was now the most annoying symptom, so the method of application was changed. The positive pole was placed over the painful region of the back, and the negative over each ovarian region for five or six minutes, and as strong a current as could be borne was used. This was sometimes as much as the small battery would give.

The result was the entire relief of the backache for three days, and only a slight return on the fourth, and this, too, in spite of unusual fatigue. A vaginal examination at this time showed marked improvement in the condition of the left side, both as regards the amount of thickening and the sensitiveness. Very little change on the right.

CASE VI. Mrs. F. Married for fourteen years. One child thirteen years ago. One miscarriage. She has had a history of chronic invalidism dating from child-birth. Had her perineum operated on at the City Hospital four years ago, and following it had a pelvic abscess. Later her uterus, which was retroflexed and adherent, was partially replaced by packing at the Free Hospital for Women. When she consulted me in May, 1887, I found her uterus still retroflexed, and an extremely sensitive mass to the left. Her principal symptoms at that time were severe and constant pain in the left side and back, dysmenorrhea and great weakness. Under prolonged treatment by packing, the uterus was got nearly forward, but was held a little to the right side. The left side was too sensitive to admit of a pessary being worn which would hold the uterus where it should be. January 16, 1888, applications of the faradic current were begun, and kept up for two months, twice a week, one pole in the left cul-de-sac, the other on the abdomen. The only effect was a slight diminution of pain for, at most, twenty-four hours after the application, and this result did not always follow.

In April she was examined under ether, and the mass was clearly made out to be an enlarged tube and ovary of the left side. In view of her long history of suffering, and the failure of ordinary methods of treatment, the removal of the diseased tube was advised, and she will enter the hospital in the fall for that purpose.

CASE VII. Mrs. T., thirty-six years old; a widow. Has had one child, fourteen years old, and one miscarriage. Two years ago had an operation for double laceration of the cervix performed. She consulted me again in November, 1887, on account of a profuse watery discharge from the vagina, beginning two days after menstruation, and lasting until four or five days before. This discharge is clear, odorless, non-irritating, and necessitates the use of a napkin. It is apt to occur in gushes, especially on change of position. She complains of pain in the right side. Menstruation lasts eight days, and is more profuse than formerly. Examination under ether showed the uterus enlarged to the size of two fists, more especially towards the right. The cavity measured four inches in depth, and nearly normal in direction. Right ovary normal; left ovary enlarged to size of hen's egg; not very hard. Diagnosis: Interstitial fibroid, enlarged left ovary.

Faradization was begun early in February of this year, and treatments were given every other day. The March sickness was very much less in amount, and the watery discharge during the inter-menstrual period was confined to a few days. The pain in the right side was diminished. The method of application was from the right cul-de-sac to the abdomen. Improvement continued in April. Treatment was then suspended, as the patient left town for the summer. There was no perceptible decrease in the size of the tumor. A letter dated May 13th, says: "I am now unwell, this time just on time, and very little for me. I am even better than usual."

CASE VIII. Mrs. P. was operated upon by Dr.

Baker at the Free Hospital for Women in 1882 for the removal of tubes and ovaries. She made a good recovery, and was able to go to work and earn her own living. In October, 1887, she was again admitted to the Hospital, complaining of pain in the abdomen. Under ether a small fluctuating cyst was made out to the left of the uterus, which was aspirated and several ounces of serous fluid drawn off. In December she returned with a history of pain and soreness in the abdomen to the left of and a little higher than the umbilicus. No cause could be detected for it on vaginal examination, and it was decided to be neuralgic in character, and faradization was recommended. This was applied from one side of the abdomen to the other, moving the poles about from place to place for ten minutes every other day for several weeks, with complete relief to the pain. The intervals were made longer and longer, and finally treatment was suspended as the pain did not return.

These few cases illustrate to some degree what classes of diseases may be expected to be benefited by the use of the faradic current. Inasmuch as its principal effect, especially with slow interruptions, is to stimulate muscular fibre to contraction, we should expect it would be of service where there was a lax atonic condition of the muscular structure of the uterus, such as we find in subinvolution. The first two cases were of this class, and the improvement in the size of the uterus after a short course of treatment was very marked.

The effect of the current with frequent interruptions is of a soothing character, and is shown by the relief to pain following its use. Four cases were characterized by pain, usually in the back and one or both groins, in all of which there was found evidence of disease of the appendages of one or both sides of the uterus. Case III, where one ovary was enlarged and prolapsed, but freely movable, improved the most in the shortest time. In less than a month the ovary could not be felt. Case IV, where there was an indefinite thickening of the left side, apparently the result of some old inflammatory process, the result was less satisfactory. In Case V, with both ovaries and tubes more or less glued together by inflammatory products, there was considerable relief to the pain and an improvement in the condition of the left side, as shown by the vaginal examination. Case VI, with a long list of chronic invalidism dating from the birth of her child, constant suffering, history of pelvic abscess, and where the examination showed a probable pyosalpinx, did not improve at all.

These different results in the different cases would lead us to expect good results from the faradic current where the tissue changes in the tubes and ovaries were slight, or where there was not much inflammation. Cases of simple prolapse, or of neuralgia of the ovary, would be most likely to respond to this form of treatment, and the result is probably due to a combination of both effects, that of stimulation to the muscular structure, perhaps, too, to the muscular coat of the arteries, thus helping the circulation, and of the soothing effect of the current with frequent interruptions.

Case VII, that of fibroid, though no diminution in the size of the tumor was apparent, improved markedly as regards the menorrhagia and the watery inter-menstrual discharge; I should, of course, expect more from the galvanic current in such a case.

Case VIII was one of pain, having its seat either in the abdominal walls or the coats of the intestines, and independent of the uterus. It was at times more an extreme soreness rather than a pain. Here the faradization did excellent service.

My cases are too few and my experience too limited to warrant any great expectations from this agent. It is not a panacea, nor does it work magical cures. I have, however, become convinced that cases of the character of those described in this paper have improved more rapidly than when treated by other methods. These are cases for which I would have applied tincture of iodine and glycerine dressings, and I think the faradization has worked decidedly better. The immediate effects of the treatment have been more favorable. Usually the application has been followed by a feeling of restfulness and quietude of the nervous system, which has lasted for several hours.

I am well aware of the imperfections in my method of applying it. The battery is simple, without any means of indicating or regulating the number of interruptions, and it has been necessarily empirical. I have so far failed to see any harm from its use, and my results have been sufficiently satisfactory to encourage me to make further trial of it.

VALVES IN THE VEINS OF THE HUMAN INTESTINES.¹

BY W. S. BRYANT, A.M., M.D.

HISTORY.

CHARLES ETIENNE described valves in the portal system of man, which he called apophyses, and which he compared to the valves of the heart. Bauer met valves in the short veins which run from the stomach to the splenic veins in man, which Cruveilhier was unable to verify.

Milne Edwards says that among mammals there are no valves in the portal system, but that in some species one meets in these vessels valves more or less numerous.

"Dr. Cresp, of England, has described valves in the splenic veins in some of the inferior animals. In one of the mesenteric veins of the reinder he showed forty-two pairs of valves." (From the *N. Y. Med. Journal*, 1865.)

Hjrtl, in the *Lehrbuch der Anatomie*, says: "Only in the portal vein of the rodents have I found a very pretty spiral valve of three to eight revolutions."

Sappey has described some valves belonging to the portal system of veins. These were found in the falciform ligament of the liver in very small veins.

Dr. Hochstetter recently, in the *Archiv für Anatomie und Physiologie* (1887), from whose article I take the liberty to quote at some length, because his is the most complete work on the subject, notes the following observations, which I have been able to confirm for the most part. He found that in the newborn infant the venous branches upon the stomach were furnished with valves, one in each minor branch, very rarely two. These valves were bicuspid, and usually placed in those vessels at or near their open-

ings into the main branches. The branches of the coronary vein of the stomach oftentimes appeared to have a relatively small number of valves. In the great omentum the veins had valves at the venæ gastro-epiploicæ, and wherever smaller branches emptied into greater. "With increasing age, the valves become little by little incompetent: first, in the gastric branches of the venæ gastro-epiploicæ dextra near the pylorus, next along the great curvature in the branches of the venæ gastro-epiploicæ sinistra and in the venæ gastrice breves, so that they persist longest in the branches which empty into the communication (if there is any) between the two venæ gastro-epiploicæ. Towards the twentieth year of life no venous branches along the great curvature of the stomach seem any longer to possess competent valves. Comparatively late the valves of the superior branches of the coronary vein become incompetent, and, last of all, usually those in the veins of the great omentum, where I sometimes found, even in very old people, perfectly competent valves."

"The valves become incompetent with increasing years by becoming smaller little by little, so that the two opposite edges of the valves no longer touch when the vessel is completely filled. Finally, only two bow-shaped linear seams, corresponding to where the valves had been attached, remain, and these can disappear, so that no trace of the valves is left." Dr. Hochstetter goes on to state that in many animals valves are found in the gastric veins, and in some they are more numerous than in man.² In the horse, he found them throughout the gastro-splenic veins. He also found them in the main, as well as the small branches of the gastric veins in antelope dorkas, sheep, goat, and in carnivora (dog, fox, cat, and otter). They were most numerous and best developed in the dog and cat. He found valves also as well developed and as numerous in the horse and hog as in the beasts of prey. In the rabbit he found only a very few valves, and these were in the gastric veins; while in the hedge-hog and bat (*vesperugo noctula*) he found none. On a close examination of two monkeys, he found good evidence of valves in the smaller veins, especially towards the great omentum and here and there in the branches of the gastric tributaries of the venæ gastro-epiploicæ, or there were dilatations, indicating the former presence of valves. Dr. Hochstetter says it is not surprising that the valves in the branches of the portal vein become incompetent with age when we consider that many of the valves of the extremities do not last to maturity.

METHODS.

Professor Dwight has aided me with his able supervision in making the following observations:

Last winter, while making general injections of the abdominal veins in dogs, I noticed that the injecting mass rarely entered the small veins of the intestines, and, on close examination, found the obstruction was due to valves. I then made injections of the portal system in several animals and in the infant at birth, and lastly in adult man, with what results will be shown later.

The methods I used were calculated to show only competent valves. A coarse injecting mass that

¹ A Graduation Thesis. The investigations were made in the Anatomical Department of the Harvard Medical School in the winter of 1887-8.

² Heule had already mentioned valves in the branches of the portal vein of mammals. Weigle found them in mammals and the horse. G. Leising, C. Müller, and F. Müller mention some valves in the splenic vein of the domestic animals.

would not pass through the capillaries, such as gelatine thickened with Prussian blue, was used. If competent valves occurred, their presence was at once shown by the arresting of the mass in the course of the vein. When the mass is thus brought to a standstill, a minute examination is necessary to show the nature of the obstruction, and a microscope of low power is useful.

A number of the valves discovered in this way, with the vessel still distended, were hardened and sectioned with a microtome. The valves were then seen cut at various angles according to the plane of the section.

Figure 1 is from a microphotograph by Mr. G. W. Fitz, of a vessel from the jejunum of a woman, prepared and cut in the preceding way. The section is longitudinal to the vessel dividing the two cusps of a valve.

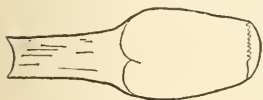


FIG. 1.

For a thorough view of the structure of the valves in contradistinction to their position, clear gelatine can be used for an injecting mass. The advantage of this is its transparency, for when a vein having a valve distended with clear gelatine is cleanly dissected, the outline of both its parts can be seen through the walls of the vessel, either with the naked eye, if the valves are large, or with a low power of the microscope if they are in the smaller veins.

OBSERVATIONS.—ANIMALS.

In the search for valves the veins of the intestines in the following animals were injected—guinea pig, rabbit, cat and dog. No evidence of valves was found in the guinea pig. In only one rabbit the veins of the last four or five inches of the large intestine were found well furnished with valves. These valves were placed along the attached border of the intestine in the mouths of the *venæ breves*. Figure 2 shows a portion of that intestine (rabbit), natural size, with the valves diagrammatically represented.



FIG. 2.

The cat was found to have a considerable number of competent valves at varying intervals along the intestine. They were usually most numerous in the vicinity of the cæcum, above and below, and occurred in a double series, one at the mouths of the *venæ breves*, and the other at the mouths of their principal tributaries.

The dog was found to be furnished with a more efficient set of valves than any of the other animals examined. The valves were found the whole length of the intestine with only here and there a spot where the injecting mass had entered the fine veins. In these places there was usually some indications of the presence of an incompetent valve. The valves usually occurred in a double series, more rarely triple or single. The most constant valves were at the mouths of the main tributaries of the *venæ breves*. The next most constant were at the mouths of the *venæ breves*, and the least constant were placed somewhere in the secondary tributaries. In one dog a valve was found in the inferior mesenteric vein a short distance from its lower extremity.

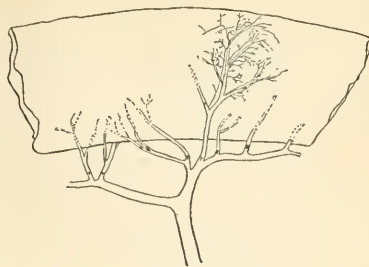


FIG. 3.

Figure 3 represents a portion of a dog's small intestine, actual size, with diagrammatic valves.

MAN.

Infants at birth, children, and adults were examined.

INFANTS AT BIRTH.

In infants, valves were found at irregular intervals along the whole course of the intestines, more numerous on the large intestines than on the small. On the large intestine they occurred in the intestinal veins (*venæ breves*) at or near their mouths, and sometimes in the mouths of the main tributaries of these veins. This was more frequently the case on the cæcum. The number of valves varied with the individual; in the majority of cases more than half of the *venæ breves* of the large intestine contained valves.

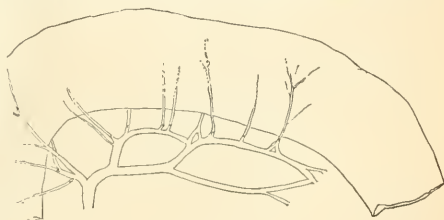


FIG. 4.

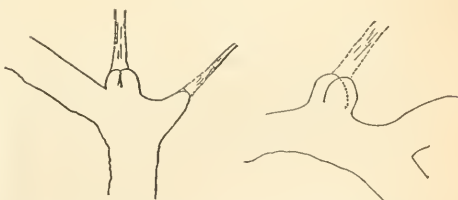


FIG. 5.

FIG. 6.

Figure 4 is a portion of the large intestine of an infant at birth, one and one-half natural size with diagrammatic valves.

Figures 5 and 6 are from microphotographs by Mr. G. W. Fitz, of the valves themselves of the large intestine, injected with clear gelatine, showing the outline of both cusps of a valve, through the anterior wall of the vein. On the small intestine the venous valves were arranged in somewhat the same way. They were found in the intestinal veins (*venæ breves*) at or

near their mouths, and at the mouths of the superficial branches of these veins. There is a much smaller number of valves here than in the large intestine; however, they are rarely entirely absent and occasionally are found in as many as one in five of the *venae breves*.

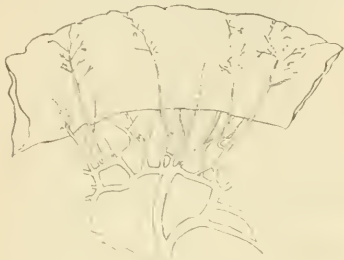


FIG. 7.

Figure 7 is the portion of the small intestine of an infant at birth, twice the natural size, and with diagrammatic valves.

The following table shows the percentage of valves found in a number of the infants examined, taking 100 as the greatest possible number; that is, one at the mouth of each one of the *venae breves*:

No.	1.	In large intestine, 100%...	In small intestine, 20%
2.	"	100 ...	" $\frac{3}{4}$
3.	"	90 ...	" $\frac{1}{2}$
4.	"	87 ...	" $\frac{11}{16}$
5.	"	85 ...	" $\frac{12}{16}$
6.	"	84 ...	" $\frac{4}{16}$
7.	"	80 ...	" $\frac{1}{16}$
8.	"	77 ...	" $\frac{17}{100}$
9.	"	63 ...	" $\frac{17}{100}$
10.	"	32 ...	" $\frac{1}{100}$
11.	"	25 ...	" $\frac{10}{100}$
12.	"	20 ...	" $\frac{0}{100}$
13.	"	10 ...	" $\frac{3}{100}$
14.	"	4 ...	" $\frac{1}{100}$
15.	"	2 ...	" $\frac{0}{100}$
16.	"	0 ...	" $\frac{2}{100}$
17.	"	0 ...	" $\frac{0}{100}$

CHILDREN.

Only three children were examined. The youngest was about two weeks old. The large intestine had valves in about ten per cent. of the *venae breves*, and in the small intestine three valves only were seen. The next child was about five months old. In this there were only four valves found which were on the jejunum. The third child was ten years old and quite rachitic. No valves were found on the large intestine. The valves found on the small intestine were most numerous in the jejunum. There were twelve valves in the *venae breves*, and thirty valves in as many superficial branches of the *venae breves*. These superficial tributaries arise from the surface of the intestine and empty into the *venae breves* a short distance from the intestine.

ADULTS.

A number of human adults were examined with the following results. Few valves were found in any one individual, even the youngest, and it did not ap-

pear that age after adolescence had much influence on the number of valves on the intestines. When the veins in the other parts of the great omentum were intact, I noticed that valves were less numerous along the free border in those veins which in the erect position would be nearly horizontal. Also that the disappearance of valves seemed to begin in one or two of the main veins lying near the centre of the omentum, and that the valves disappeared in the direct course of these veins before they did in their tributaries.

In the intestines of most adults there were a few valves remaining in the *venae brevis*. These were usually on the ileum near the caecum.

Figure 8 is from a microphotograph by Mr. G. W. Fitz of a valve from the caecum of an adult. The injecting mass is clear gelatine, and the outline of both the cusps of the valve are seen clearly through the wall of the vessel, frequently on the jejunum. They are most numerous at the mouths of these veins, but there are sometimes two more sets of valves in other portions of the superficial vessel, making in all three sets of valves.

As autopsies were the chief source of material, in but few cases the whole intestine could be examined, and in many only a small portion, so that the table is not as complete as might be desired.

The following table shows the number of competent valves found in the various parts of the intestines of human adults.

No.	On Caecum.	On rest of Large Intestines.	On Small Intestines.		Total.
			In <i>venae brevis</i> .	In superficial branches.	
1	5	2 on ascending colon.	22 (2 feet examined.)	56 (2 ft. examined.)	85
2	Not exam.	11	3	43	62
3	1	None in ascend. col.	18	20	60
4	1	None in ascend. col.	9 (mostly in ileum.)	37 (mostly in jejunum.)	47
5	None.	3 (close 4 non-comp.)	3 (mostly in ileum.)	23	26
6	None.	6	13	15 (mostly in jejunum.)	33
7	None.	None.	1	None.	19
8	None.	None.	3	12	13
9	None.	None in ascend. col.	Not examined.	7	11
10	None.	None.	None.	3	5
11	None.	None.	None.	None.	3
12	None.	None.	None.	None.	0
13	None.	None.	None.	None.	0
14	None.	None.	None.	None.	0
15	None.	None.	None.	None.	0
16	None.	None.	None.	None.	0
17	None.	None.	None.	None.	0
18	None.	None.	None.	None.	0
19	None.	None.	None.	None.	0
20	None.	None.	None.	None.	0

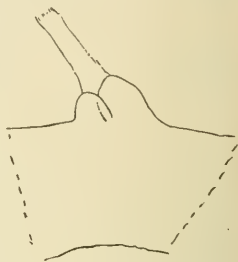


FIG. 8.

The valves of the intestinal veins, like those of the rest of the portal system, are bicuspid. They are also thin and delicate, and in the infant extremely elastic. In man the line of contact of the two halves of the valves, in the majority of cases, is nearly parallel with the course of the intestine.

The number of subjects intermediate between the infants at birth and the adults which were examined is very small, and the conclusions based on them may have to be altered after a wider experience.

CONCLUSIONS.

These observations show that at birth the valves on the intestines are quite numerous in man, and at this age they are more abundant on the large intestine. Also that in a few months the valves either disappear or become incompetent, with few exceptions. In adult man there are usually a few valves, and these are more abundant in the small intestine, especially in the superficial tributaries of the *venae breves*. These valves are more numerous in the jejunum, and disappear as we approach the caecum.

Though the valves just described were discovered since Hochstetter's paper was written, his remarks on the significance of valves in the portal system will apply to them. After alluding to the fact that the presence of valves in the branches of the portal vein seems widely spread among mammals, he says: "But only in individual species, as in the beasts of prey, do the valves possess great importance in connection with the circulation. In many species they are to be considered much more as rudimentary organs, which act either only in youth, as in men and perhaps the ape, and later in part or wholly disappear, or for the most part, as in the rabbit, are very imperfect."

Clinical Memoranda.

PUERILE GENITALIA.¹

BY F. B. STEPHENSON, M.D., U. S. N.

ALTHOUGH the subject is mentioned by the ancients, from an examination of modern literature it appears doubtful that reliable data on cryptorchidia exist earlier than about 1720. Since then a great variety of cases have been reported, as given, for instance, by Godard ("La Cryptorchidie," par Ernest Godard, Paris, 1857).

One or both testicles may continue in the abdomen, or be fixed more or less permanently in some portion of the passage to the bottom of the scrotum. Occurring normally at or near birth, complete descent has taken place as late as twenty-five (Godard) and thirty-five years of age (Mayer). When other signs of non-perfection exist, such as a weak voice, delicate structure, thin pubic growth, etc. (showing absence of masculine organism), virility is more than doubtful. The retained (undescended) seminal gland often undergoes a sort of fibrous transformation; or, various degenerations, as fatty, tuberculous, cancerous. An ill-located testis occasionally becomes troublesome, inflamed, from mechanical relations; it has been mistaken for an inguinal gland and for a hernia.

Dissection has shown that, sometimes, one of the

pair is absolutely wanting, only rudimentary traces of the cord, etc., being found.

The testimony is rather conflicting as to whether double non-descent causes sterility. Godard, from microscopic examination, decides that where the testes remain in the abdomen procreation is impossible. John Hunter admitted that he had seen one case where they continued in the abdomen, and the person had all the passions and powers of a man. Two cases of undescended testicle are reported (*The Lancet*, June 16, 1877) where other signs of virility (as normal penis) existed, both having offspring. Another case, aged twenty-six, had both partially descended, with diminutive penis. After having seen his future marital companion the parts took on active growth: at twenty-eight years they were of normal size, and the man became a father (Curling, from Wilson).

When the sperm glands are in malposition outside of the abdomen, the ability to perform their office will be variously modified by the relations of surrounding structures, as to pressure chiefly. In any case, the prognosis must depend much upon other signs of adult physiology.

The preceding case resembles that now presented, which may be described as double inguino-scrotal cryptorchidia. The man is twenty-two years of age, generally well formed, of normal, healthy blood connection. The penis is of infantile size, though the patient states that erection has taken place, with the usual sensation on ejaculation, the organ then becoming about double its length when flaccid. Neither testis is in its natural place; the right can be easily pushed down, while the left may be felt near the pubic attachment of the scrotum; both are very small.

Another man, aged nineteen, recently seen, was well formed; had a very long trunk; penis unusually long and thick; right testicle larger than the average; left not apparent in the scrotum or elsewhere. He said that his brothers and sisters had children; that he did not know himself different from other boys; that he first noticed absence of testis when seven years of age. He appeared dull of intellect.

Dr. Marshall, in nearly 111,000 recruits, met with one case only where the two glands had not come down. He found, in 10,800 recruits, one double ectopy, eleven of single displacement (five right, six left).

Cryptorchids may be arranged in three classes:

- (1) Those having neither desire nor power of sexual intercourse.
- (2) Those having power of sexual intercourse, but incapable of fertilizing.
- (3) Those having the desire and capacity for sexual intercourse, possessing normal semen, but who fear to marry because they think the testes useless, not being in the scrotum.

Little is known as to the cause. Some cases are hereditary. The dissection of one case showed no structural impediment to natural descent. Various anatomical abnormalities have been alleged without much logical basis. Lesions of adjacent parts (as gubernaculum) may hinder the usual course. Scarcely more can be assigned in explanation of origin than "incomplete development."

In this connection, it may be said that some observers consider feeble intellectual powers a consequence, or concomitant of such abnormality, but proof thereof has not been found in professional archives.

In regard to treatment, we find the account of one

¹ Read before the Boston Society for Medical Improvement, May 28, 1888.

case where the gland was forcibly removed from the canal and pushed to its natural place in the scrotum, but without success. No operative interference or manipulation, except to relieve pain from mechanical relation of parts, seems to have been reported as beneficial. Godard gives several cases similar to the first, now shown. In his book are a number of plates showing dissections.

According to the testimony as recorded, it is evidently unscientific, as well as unkind, to affirm as yet absolute sterility simply from cryptorchidia. A man's life may be made miserable by such a suspicion. However, the bearing of this condition on the question of marriage is worthy of serious consideration.

It may be of interest to add that these anomalies of testicular position have been observed in the dog and horse. Such displacements are analogous to conditions permanent in some of the lower animals. In this respect, the chimpanzee most resembles man. The upright posture is alleged to have causal influence on normal descent in the human anatomy.

A CASE OF APPENDICITIS, WITH AUTOPSY.

BY E. WARNER, M.D., WORCESTER, MASS.

On the evening of July 19th, was summoned hastily to a patient, Mrs. W., aged fifty-nine, who was found to be moribund, extremities cold and pulseless, countenance indicative of great distress, very restless, complaining more particularly of pain in the right iliac region.

It was suspected to be a case of pericæcal trouble, and a case for which at an earlier moment operative treatment might have been of service. In fifteen minutes after arrival the patient was dead.

From friends the following history was obtained. On the 13th, the patient complained of feeling chilly. On the 14th, had decided chills and pain, followed by sweating. Tried to walk on the street, but had to return. On the 15th, was more comfortable. On the 16th, resumed the attempt to walk on the street; and though suffering considerable from pain all the time, took quite a long walk and attended to some business. The following night pain increased, and vomiting occurred. The night of the 17th, patient was described as "up and down all night with the pain." The 18th, was passed amidst great pain and suffering; and at ten P. M., a "spasm" was reported, lasting about half an hour. On the 19th, loose, watery stools occurred, having been previously constipated, and the patient would scream when the abdomen was rubbed.

She had complained at times for about four weeks of a little pain in the right iliac region. Had a previous attack, as the friends said, a year and a half before. There was an old umbilical hernia which had given the patient more or less trouble for several years.

Up to noon of the day she died she was under the care of a so-called Christian Scientist. At this time a clairvoyant was called, who years before had been the medical adviser, who had sufficient skill to detect the gravity of the case, and with conscientious regard for the care of the patient, advised to call a regular physician immediately. It was evening before the regular physician was summoned, and an hour later the writer saw her in consultation, with the result above described.

Autopsy the next day. On section, a layer of fat

two inches or more in thickness over the abdomen was divided. The whole colon was greatly distended with gas, and from the right side chiefly, and coming from below, purulent fluid appeared at the opening: this being removed by sponge, and recent light lymph adhesions broken up, the appendix came prominently into view. It was attached by recent lymph adhesions to a coil of small intestine. On its anterior border and near its junction with the cæcum, appeared in full view a perforation large enough to admit the point of an ordinary director. It was thickened, dark colored, and about the size, in length and breadth, of a little finger. It contained some small fecal masses, about the size of large white beans. The sigmoid flexure seemed to be held down by firm and old adhesions. Apparently deposits of lymph had formed partitions sufficient to prevent the general peritoneal cavity from becoming involved in peritonitis. Had the patient lived longer, it may be a question whether general peritonitis, or a localized abscess had been the result. The inflammation of the appendix had progressed so rapidly and its perforation had followed so promptly a partition wall of lymph of sufficient strength to retain the pus deposit had not been thrown out. The cæcum appeared entirely healthy, the vermiform appendix seemed the only part originally at fault.

This case seemed to throw light upon the conclusion reached by Dr. Thomas G. Morton when he says: "Recent pathological researches have demonstrated that, as a rule, in cases presenting the well-recognized characters of typhilitis the symptoms are almost invariably due to appendicitis. Exceedingly rare are the cases in which the cause resides in the cæcum. Pericæcal abscess may then, in most cases be said to mean disease of the appendix vermiformis."

Dr. H. H. Smith, of Philadelphia, says appendicitis is mostly met with before forty-five; perityphilitis is rare after forty. He quotes Bauer as stating that typhilitis is most common between sixteen and thirty-five. It will be noted that this patient was fifty-nine. The umbilical hernia was of the small intestine, its anterior wall at one point having been protruded till it had assumed much the shape and size of a soft rubber nipple. Beyond this the part seemed normal. The great distress and rapid exhaustion of these cases is very striking. Symptoms so characteristic and formidable when once seen cannot be easily forgotten.

Christian Science seems to be quite popular in this city. A recent case, of newspaper notoriety, has just been reported, where the suffering of the patient was so severe as to arrest the attention of the near neighbors, and in which the resulting death was returned as due "to change of life," has this very morning, August 22d, in our local papers a note of apology from the near relatives, stating that the treatment was satisfactory to them and according to the wishes of the patient. How horrible must be the sufferings of a patient under appendicitis and receiving only the treatment of a Christian Scientist!

First Undertaker: "Well, we can't complain much of dulness of business.

Second Undertaker: No; it is true we have no cholera or yellow fever this summer, but there is a very encouraging epidemic of the mind cure in places. — *Life.*

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

T. F. SHERMAN, M.D., SECRETARY.

REGULAR meeting, Monday, June 4th, at the Medical Library, 19 Boylston Place, Dr. E. N. WHITTIER, in the chair.

DR. F. H. DAVENPORT read a paper on

SOME GYNÆCOLOGICAL CASES TREATED BY ELECTRICITY.¹

DR. FRANCIS MINOT said he was especially interested in the cases of subinvolution of the uterus reported by the reader, as his experience in the treatment of such cases by electricity had been limited. He had frequently found electricity of value in cases of amenorrhœa, though it was often difficult to say how much credit should be given to the electricity *per se*, and how much to the moral effects of the treatment on the patient, especially in cases of delayed menstruation where pregnancy was feared. In other cases of amenorrhœa it has a tonic effect. He has often found it of service in amenorrhœa produced by a sea voyage, one electrode being applied to the back, and the other over the pubic region or over the ovaries.

DR. MINOT asked the reader if he had treated fibroids of the uterus by electricity, and if it controlled the hæmorrhage in those cases.

DR. DAVENPORT replied that he had not, but had seen cases of fibroids treated by electrolysis with good result, the positive pole in the uterus, with the negative pole outside.

DR. E. O. OTIS said: I want to show this patient, upon whom I made a

PERMANENT OPENING FOR EMPYEMA

in February last. The case is, briefly, as follows:

This woman lived in an unhealthy tenement, was much below par from overwork and her unhealthy surroundings, and was taken sick on the 9th of January last with symptoms of trouble in her left chest. It was one of those obscure cases in which the difficulties of making a definite diagnosis were great. One day the evidence seemed to be in favor of pneumonia, the next of a pleuritic effusion. On the 22d of January I felt tolerably sure of an effusion, and aspirated. I obtained serum. I aspirated again on the 29th of January, and again on the 5th of February, obtaining pus. I made a permanent opening, February 7th, between the eighth and ninth rib, and inserted a drainage-tube of moderately large calibre. I think I struck the diaphragm, and, in consequence, was not able to obtain good drainage. After trying different drainage-tubes, I found I could do the best without any by inserting the glass tube of the syringe directly into the opening and washing out the cavity in this way, as I was obliged to do daily for a while, in order to keep the cavity clean. I used various antiseptic fluids, but found a bichloride solution of 1 to 8,000 strength the best. She had constant afternoon fever until about the middle of April. On May 1st the discharge ceased, and on May 8th the wound was healed. She gained in flesh rapidly, gaining eight pounds in sixteen days. She has fair resonance and respiration on the affected side, and is in good general condition.

¹ See page 397 of the Journal.

as you see. From the date I made the permanent opening until all discharge ceased was eighty-three days. Knowing what I do now of the admirable effects of creoline, I should use a solution of this for washing purposes in a future case.

DR. MINOT asked why the opening was made so low.

DR. OTIS replied that he had obtained pus through the aspirating needle as low, and had made the permanent opening in the same place, using the aspirating needle as a guide.

NEW YORK STATE MEDICAL ASSOCIATION.

FIFTH annual meeting, held at the Hotel Brunswick, New York, October 9, 10, and 11, 1888.

THIRD DAY.—AFTERNOON SESSION.

DISCUSSION ON PUERPERAL SEPTICÆMIA.

The discussion was opened by CARLTON C. FREDERICK, M.D., of Erie County, who read a paper, in which he propounded the questions which follow. In the course of it he said that more cases occurred in primipare than in pluripare, and that the danger of infection in any case was in direct proportion to the avenues of approach left open for the invasion of sepsis. The importance of prophylaxis was, therefore, evident, and the strictest antiseptic precautions should be employed in every case of labor. Among the measures that he advocated was the use of a vaginal douche of bichloride solution (1 to 3,000) before delivery. The placenta should always be removed with the patient on her back, in order to prevent the ingress of air, which was likely to take place if she were in Sims's position. After delivery the perineum should be examined, and sutures applied if there was any rupture. If for any reason it was necessary to introduce the hand into the uterus, an intra-uterine injection of bichloride solution (1 to 4,000) should subsequently be employed. He advocated the use of the antiseptic pad, and said that vaginal injections were unnecessary. When the bowels or bladder were evacuated the patient should be raised to the upright position, in order to drain the uterus and vagina. He said that he felt that the necessity of complete antiseptics as a means of prophylaxis was not yet sufficiently understood by the rank and file of the profession.

As regards the prognosis of puerperal fever, the purely septic forms were the most dangerous, unless the condition was promptly and thoroughly treated. When septic germs had once gained entrance into the blood and the lymphatics they were beyond the reach of the physician; but further infection could generally be prevented, and if the patient's strength could be kept up the hope might be entertained that the poison would be eliminated from the system. The point of production and the point of absorption was when there was a solution of continuity in the tissues, and putrid lochia were a potent cause of infection.

When septicæmia declared itself, vaginal injections of bichloride solution (1 to 2,000) should be employed at intervals of from three to six hours, according to the urgency of the symptoms. After the use of the douche the patient should be required to sit upright, to drain the parts. All necrosed patches in the genital canal should be touched with equal parts of the solution of the persulphate of iron and the compound

tincture of iodine, as recommended by Lusk, and if there were any diphtheritic patches the chloride of zinc should be employed, as advocated by Garrigues. It was probable that the intra-uterine douche had been resorted to too frequently, and that the real benefit in most of the cases where it was used resulted from vaginal irrigation. Among the dangers likely to arise from this practice was one that had been overlooked; namely, that of conveying septic material from the vagina into the cavity of the uterus. If the intra-uterine douche was deemed necessary the patient should be placed in the lithotomy position, and from one to three pints of bichloride solution (1 to 4,000) carefully injected. Afterwards the uterus should be squeezed dry, a pencil of iodoform inserted into its cavity, and ergot administered to insure contraction. In controlling high temperature, antipyrine, or, preferably, antifebrin, was often of service.

QUESTION I.—What facts can be cited in support of the doctrine that the puerperal febrile diseases owe their origin to the action of micro-organisms?

Discussed by HERMANN M. BIGGS, M.D., of New York County.

He referred to nature's safeguards against infection, and said that the natural resistance of the tissues must first be overcome before septic germs could obtain an entrance. In the normal parturient woman the lochial discharge and the abundant secretions of the parts continually protected the wounded surfaces. The uterus was also kept tightly closed up by its own contractions, and the epithelium of its cavity protected its orifices with an impenetrable shield. If, however, anything occurred to diminish the quantity of the lochia; if the uterus did not contract properly; if the vital resistance of the tissues were reduced by depressing influences of any kind; or if portions of membrane or blood-clots were retained in the uterus; and if, under any of these circumstances, microbes were introduced, it was evident that the most favorable conditions were present for the development of puerperal septicæmia.

With these points in view, it was easy to understand how the use of antiseptic precautions was so efficient in preventing this condition. If, in the first place, an antiseptic vaginal douche were employed during and immediately after labor, and if, in the second place, an antiseptic dressing were kept applied after delivery, infection was much less likely to occur than if these measures were not resorted to, and if it did occur it was apt to do so at a later period, when a better opportunity was afforded for counteracting its effects. The different conditions met with in different cases explained the various forms of puerperal septicæmia met with. After death, pyogenic organisms had been met with in the milk-glands, in the lymphatics, and in various organs throughout the body, and it had been demonstrated that they were eliminated during life by the kidneys and other excretories. The streptococcus pyogenes was found in a large number of cases, and it was probable that this was identical with the streptococcus of erysipelas. The next most common bacillus met with was the staphylococcus, the ordinary microbe of suppuration. The puerperal febrile diseases were, therefore, a class of affections closely allied to infectious surgical diseases. The bacilli of the latter were known to be capable of producing all the conditions met with in puerperal septicæmia. The abolition of the latter from maternity hospitals constituted one of the most remarkable chapters in the his-

tory of bacteriology, and hence the conclusion could not be avoided that these diseases were of bacterial origin.

QUESTION II.—Is there a specific febrile disease peculiar to the puerperal woman, or are the various forms of puerperal fever the result of septic or putrid infection similar to or identical with that familiar to surgeons as septicæmia? What etiological relations exist between the zymotic diseases and some forms of puerperal febrile diseases, and in what manner are the zymotics modified by implantation upon the puerperal state?

Discussed by EVERARD D. FERGUSON, M.D., of Rensselaer County, and S. B. WYLIE McLEOD, of New York County.

The first part of this question, Dr. Ferguson said, did not admit of a categorical answer, but in the present state of knowledge the theory that puerperal fever is a specific disease was no longer tenable. At the last important discussion on the subject in this country, that before the New York Academy of Medicine in the winter of 1883 and 1884, the only participant who advocated the specific character of the disease was Dr. Fordyce Barker. When fever occurred *ante-partum*, as was undoubtedly the case in a few rare instances, it was more reasonable to suppose that it was due to some of the causes which might give rise to pyrexia at any time, rather than to a specific puerperal fever without any anatomical basis. As a rule there was no septic absorption without solution or continuity of tissue, and blood-clots allowed to remain in the genital tract were especially liable to cause such absorption.

As regards the second part of the question, it could be shown that pregnancy did not afford immunity from any of the zymotic diseases. It was necessary to distinguish between those cases in which the zymotic disease complicated the puerperal fever and those in which the zymotic infection gave rise to the puerperal fever. With regard to diphtheria he said he wished to protest against the assumption that every case of membranous exudation was one of true diphtheria. The zymotic diseases were apt to be more or less modified by implantation on the puerperal state, and the mortality was often increased, especially when pelvic inflammation was present. The diminution of red corpuscles and the increase of fibrin in the blood resulting from pregnancy might, perhaps, explain to some extent the greater severity of the zymotics, as a rule, in parturient women. In cholera, however, the mortality was apparently not increased in pregnant women. Small-pox was noted for its mortality in this class, the death-rate averaging from twenty to forty per cent. It frequently caused abortion, which was apt to be followed by the death of the patient; and the same was true of scarlatina and measles. The relation between erysipelas and puerperal fever had long been well known. This disease was not so fatal, however, if care were taken to avoid infection of the genital tract.

Dr. McLeod said that in the light of our present knowledge very few would claim that puerperal fever is a specific disease with always the same cause. The missing link in Churchill's tables which had formerly been so often referred to, was supplied by bacteriology. It was a recognized fact that certain cases of puerperal febrile disease occurred in which there was no sepsis; but it was also well known that fever of

any kind had a bad effect upon open wounds. It could not be doubted that the zymotic diseases sometimes caused puerperal septicæmia. In general it might be stated that puerperal fever was a complex disease, depending on a variety of causes, but dependent, as a rule, on surgical septicæmia. The test of treatment, as shown by the remarkable success of antiseptics, conclusively proved this. The conclusions at which he had arrived were as follows:

(1) It is the wise course to acknowledge the vast etiological importance of septic infection.

(2) It is proper to acknowledge, also, that some cases are of zymotic origin.

(3) That practitioner is best qualified to treat puerperal fever who, in addition to the judicious use of antiseptics, is prepared to employ quinine, iron, iodine, and other appropriate remedies, in case the disease may be of zymotic origin.

QUESTION III.—What conditions of the woman predispose to the development of puerperal septicæmia? To what extent are the accidents of childbirth, together with the manipulations of the accoucheur, to be considered as etiological factors in puerperal infection? Are there any antiseptic measures before, at, or after labor, under any and all conditions or complications, that may be relied upon as prophylactic to puerperal septicæmia?

Discussed by FRANK W. ROSS, M.D., of Chemung County, and JOHN SHRADY, M.D., of New York County.

Dr. Ross spoke first of the causative agency of a predisposition or vice of constitution in the puerperal woman, and said that among the important conditions of this kind were the zymotic diseases, disease of the lungs, kidneys or bowels, gonorrhœa and cystitis. To be forewarned was to be forearmed, and the special means for prophylaxis to be employed would depend on the peculiar condition of the patient. The accidents of childbirth and all abnormal conditions during the same, strongly predisposed to septicæmia. The bruising of the parts of the head of the child, the accoucheur's hand, or the use of instruments were liable to be followed by it, and a slight tear of the perineum left to itself was more dangerous than a larger one treated with antiseptic precautions. No iron-bound rules could be laid down for prophylactic treatment, but the observance of certain measures, with due regard to the condition and surroundings of the patient, would, in general, be of service. In the first place, the woman should be placed in the most perfect health attainable, both general and local, before her confinement. At the time of labor she should have plenty of pure air, and all things about her should be scrupulously clean, efficient antiseptic solutions being employed to secure this end. If the perineum were ruptured it should be either sutured or antiseptic protection afforded the parts. Antiseptic injections might be judiciously used, if called for, before, during and after labor.

Dr. Shrady said that one of the most important predisposing conditions was a lowered vital tone. This view was supported by the bacterial origin hypothesis, because it was well known that healthy tissue constituted the great barrier against microbic infection. The primary channel of sepsis was the genital tract, and experience had taught the advisability of making infrequent vaginal examinations. The difference between purulent and putrid infection was to be care-

fully borne in mind, and the latter was the more rapid and dangerous of the two.

QUESTION IV.—Are the lesions resulting from puerperal infection always the same? If various lesions result, can an accurate differential diagnosis be made between them, based alone upon the history and symptoms?

This question was to have been discussed by DR. WM. H. ROBB, of Montgomery County, but, in his absence, was passed over.

QUESTION V.—What is the pathology of each of the several forms of puerperal septicæmia? What conditions or circumstances incident to puerperal septicæmia, and what forms of the disease tend to render it fatal?

Discussed by FRANK GRAUER, M.D., of New York County.

In the course of his remarks he described two forms of inflammation of the vagina, the catarrhal and the diphtheritic. When the inflammation extended from the vagina to the uterine, it might pass on to the tubes, producing salpingitis, or through the fimbriated extremities of the latter, producing peritonitis. He described particularly the lesions of parametritis and pelvic peritonitis, associated with lymphangitis, and the condition where diffuse peritonitis supervened. Having referred to the secondary lesions sometimes met with in the lungs, heart, kidneys, meninges, and other parts, he stated that the lesions in general resembled those met with in the ordinary forms of septicæmia.

QUESTION VI.—What plan of antiseptic treatment can be employed with a large degree of success in each of the several forms of the disease? Does every rise of temperature above 100° F. in the puerperal woman constitute an indication for immediate resort to irrigation? When should irrigation be intra-vaginal, and when intra-uterine? When irrigation is employed, how often should it be done, and when should it be discontinued? What hygienic, medicinal, and dietetic treatment is to be used in addition to the local antiseptic measures? To what extent should alcoholic stimulants and antipyretics be used?

Discussed by WILLIAM T. LUSK, M.D., of New York County, and ROLLIN L. BANTA, of Erie County.

Dr. Lusk said that in the midwifery of the future there was reason to believe that there would be no occasion whatever to discuss the treatment of puerperal septicæmia. His own observation had led him to hold the opinion that this condition ought never to follow a properly conducted labor. In the Emergency Hospital in New York, where the number of confinements averaged 220 annually, the mortality from puerperal septicæmia had been reduced to *nil*, and it was actually the case at the present day that the women confined in lying-in asylums fared better as regards this affection than private patients surrounded by all the aids that wealth can command. The very fact that a place was given to such a discussion as this on the programme of the Association showed, indeed, that the necessity and efficacy of preventive treatment were not yet as fully appreciated by the profession at large as they ought to be; and he could not but believe that one reason why this was so was because that when antiseptic prophylaxis first came in vogue it was taught that the removal of the carpet, upholstery, etc., from the chamber, and other such extreme measures, were required, and the difficulty of carrying out such a plan of procedure, which was altogether unneces-

sary, had proved a stumbling-block to many practitioners.

In the first place, both the physician and the nurse should understand the necessity of surgical cleanliness, and soap and water and corrosive sublimate were the means by which this could best be obtained. The hands and forearms should be washed with bichloride solution, just as if laparotomy were to be performed, and the patient's genitals, abdomen, and thighs should also be bathed with it. Vaginal injections with the bichloride solution during labor were a valuable safeguard against self-infection. All unnecessary manipulations, such as attempts to dilate the cervix with the fingers, should be avoided. The complete removal of all the membranes should be carefully looked to in the third stage of labor, and Dr. Lusk said that, in order to secure this, he always employed a strong light, so that he could readily see what he was doing. If it was necessary at any time to introduce the hand into the uterus, the cavity should be afterwards washed out with a solution of carbolic acid.

To prevent germs from entering the tissues to a dangerous extent, nothing would seem at first sight so efficient as irrigation: but uterine irrigation was not devoid of risk, and this method of procedure really left out of account the great bulk of puerperal inflammations. Experience had shown that if the uterine douche were employed regularly at four hours' intervals the mortality would be considerable. It was a point worthy of note that a rise of temperature did not constitute at all the indication for a resort to uterine irrigation. The true indication was a large, flabby uterus with retained membranes, portions of the placenta, or blood-clots.

In using the uterine douche a glass tube was preferable, and carbolic acid solutions was the most desirable fluid for the purpose. It should be preceded by a vaginal douche, and the quantity of fluid employed should not be large, never exceeding two quarts. The stream should be continuous, and not interrupted. It was important that a free exit for the fluid should be secured, and after the douche had been finished pressure should be made upon the uterus to facilitate contraction and the expulsion of any of the solution that might remain in the organ. He had found it a good plan to leave a pencil containing a drachm and a half of iodoform in the cavity of the uterus. The mistake was often made of resorting to the uterine douche too frequently. It was his practice to give a second douche at the end of twelve hours, if necessary, but a third was rarely needed. Dr. Lusk stated that he still had faith in the efficacy of the vaginal douche in almost all the varieties of puerperal fever, as it certainly promoted uterine contraction, and was generally very agreeable to the patient.

In every case of increased temperature after parturition, the first thing to do was to make a careful examination of the vulva and vagina, and if ulcerations were found to apply caustic. The use of ice-bags over the pelvic region was generally of service. The chief danger in puerperal septicæmia was from weakness of the heart's action, and this was to be counteracted by alcoholic stimulus, abundant liquid nourishment, and such agents as strophanthus. In all cases of fever following parturition, suitable food and alcohol were indispensable. The most careful attention to the hygienic surroundings of the patient was, of course, called for. In the severest cases the ice-coil was un-

doubtedly useful, and Runge had recently reported very favorable results from the employment of tepid baths in lymphatic septicæmia. These results were the more remarkable from the fact that this was the most fatal variety of puerperal fever, and the method was certainly worth resorting to.

Dr. Bauta spoke of the importance of employing every possible precaution to exclude septic material from the parturient patient's system. After trying various other agents, he had returned to the use of bichloride of mercury as the most satisfactory antiseptic. He employed it in a weak solution (1 to 4,000, and often as weak as 1 to 10,000). If injections were to do any good, the benefit would be evident at once. The curette was often of much service in removing *débris* from the uterus, but nothing could take the place of the educated hand of the accoucheur. The indication was to remove all infectious material from the genital canal, and, if it could not all be removed, to thoroughly disinfect what remained. If, after giving vaginal douches for from twenty-four to forty-eight hours, no relief was afforded, intra-uterine irrigation should be resorted to; and if, after using this for a day or two, in addition to the curette, no benefit followed, it was best to give up injections entirely, as the trouble could not thus be reached.

VERMONT STATE MEDICAL SOCIETY.

SEVENTY-FIFTH annual meeting, held at State House, Montpelier, October 11th and 12th. *President*, Edward R. Campbell, M.D., Bellows Falls; *Secretary*, D. C. Hawley, M.D., Burlington.

OCTOBER 11TH.—FORENOON SESSION.

The Society was called to order at 10 A. M. by the President. Prayer was offered by Rev. George T. Raymond, of Montpelier.

Dr. C. J. ALLEN, of Waitsfield, presented a paper on

ACUTE YELLOW ATROPHY OF THE LIVER.

Dr. Allen, after giving a brief résumé of the anatomy of the liver, said that the starting-point of inflammatory action in this disease, instead of being in the connective tissue, as it is in cirrhosis is diffuse, spending its greatest force on the hepatic cells of the lobules. These shortly undergo a fatty degeneration and softening, so that if the liver be removed it will not retain its form when laid down, but will flatten out.

The bile ducts become obstructed by the softened epithelial cells, and what bile is secreted is carried by absorption into the system, and gives rise to jaundice, which fades only when the bile is no longer secreted. After about nine days the area of hepatic dulness diminishes. This symptom is said to be more nearly pathognomonic than any other. The prognosis is fatal in a well-marked case.

In the majority of cases the graver symptoms are preceded by milder prodromes. These prodromal symptoms, consisting of loss of appetite, nausea, vomiting, bitter taste in the mouth, headache and general malaise, will persist for a period varying from a week to several months.

A persistent dilatation of the pupils will be noticed at some period, and jaundice in some degree is sure to

appear. The liver is reduced to about one-third its natural size.

Increased headache, intense insomnia, extreme restlessness, paralysis of sphincters, jactitation, possibly convulsions, wild delirium, coma, death, and the scene is closed.

The temperature ranges from a slight rise to 105° and 106°, the pulse keeping pace with the temperature. Hemorrhage from some part of alimentary canal is common. Nearly all the organs undergo more or less change.

But little can be done in the way of treatment. Sodium phosphate, quinine, arsenic and astringents for the hemorrhages are the drugs most employed after the graver symptoms appear.

Dr. Allen gave the history of a case which came under his care during the present year, in which he was assisted in the diagnosis by Dr. Henry Jaues, of Waterbury, a prominent member of this Society.

The subject was briefly discussed by Dr. F. W. GOODALL, of Bennington, Dr. O. W. SHERWIN, of Woodstock, and Dr. Wm. R. WHITE, of Providence, R. I. Dr. White said one or two cases of acute yellow atrophy of liver had been reported in the meetings of the Rhode Island Medical Society.

The second paper,

NOTES ON ALBUMINURIA,

was read by A. B. BISBEE, M.D., of Montpelier.

He said that it has long been known that some apparently healthy persons may pass albuminous urine continuously for many years without developing symptoms of renal disease, and that in a still larger number of persons a temporary albuminuria may be excited by slight causes, but these facts seem to have been regarded, in the past, as of very little practical value, and to have lessened in no way the importance usually attached by physicians to this symptom as ordinarily met with in practice.

Ever since Richard Bright drew attention to the relationship existing between albuminuria and the kidney affections which are now associated with his name, the idea has very largely obtained that albumen in the urine is an almost infallible indication of serious organic disease of these organs, and the possibility of its occurrence unassociated with such diseases, until recently, has not been seriously considered.

In the nomenclature adopted by the Royal College of Physicians, the two terms albuminuria and Bright's disease are given as synonymous, and the common practice of hinging a diagnosis of kidney disease on the presence of this one symptom alone has generally been considered warrantable.

With the advent of a more thorough clinical study of the urine, it has become apparent that albumen in the urine is not always evidence of pathological changes in the kidneys, nor the "signal for an alarming prognosis."

While albuminuria may be a symptom of Bright's disease, it is not essential to it, and some cases of chronic diffuse nephritis may pass through their entire course to a fatal termination without the presence of albumen in the urine at any time.

Albuminuria is sometimes produced by pathological changes in other organs of the body; and, again, albumen sufficient in quantity to be detected by the ordinary tests frequently appears in the urine under conditions compatible with perfect health. In such cases

the most striking feature is the intermittent character of the albuminuria.

There is a period in every day when no albumen can be detected. In some cases it appears only after exercise, in others only after meals. In most cases the urine passed on rising is free from albumen, while later in the day it appears in varying amounts. Albuminuria without kidney lesion is called cyclic albuminuria. In this form of disease the urine and urea in twenty-four hours is normal. In all forms of Bright's disease the amount of urea is lessened and, as a rule, the quantity of urine is diminished. In simple albuminuria there is no cardiac hypertrophy, no increased arterial tension, no dropsical effusion, no changes in the retina.

What is the significance of cyclic albuminuria? Is it entirely non-dangerous, or is it the initial stage of serious kidney disease?

At present it seems impossible to answer this question; but there can be no doubt that some of the cases eventuate in kidney disease. Many physicians believe that the repeated passage of albumen through the kidneys induces structural changes in these organs, and that its presence in any amount is a dangerous symptom. Others, and perhaps the majority of observers, hold that, while some cases terminate in kidney disease, the majority do not so terminate, and cases are cited where albuminuria is known to have persisted many years with no bad results.

Dr. H. D. HOLTON, of Brattleboro, and Dr. O. W. SHERWIN, of Woodstock, thought albumen in urine for several continuous days a serious symptom.

Dr. C. S. CAVERLY, of Rutland, reported a case of cyclic albuminuria which occurred in his practice four years ago, and the patient is well to-day.

Dr. GOODALL said there was a nervous element in many cases of cyclic albuminuria—that it might be called a neurotic disease.

Dr. NIMBLET, of Monkton, reported the case of a man who had a large quantity of albumen—twenty-five to fifty per cent.—in urine, thirty-four years ago, and who died a year or two ago of old age.

The subject was further discussed by Dr. C. C. PERRY, of Bethel, and Dr. C. J. ALLEN.

Dr. C. P. FROST, of Hanover, N. H., would not recommend patients with cyclic albuminuria for life insurance.

Dr. E. F. UPHAM, of West Randolph, thought the kidneys often came to the relief of other organs—as the digestive—and said a transient albuminuria might not be serious.

Adjourned.

AFTERNOON SESSION.

Dr. GEORGE DUNSMORE, of St. Albans, presented a paper on

SEPSIS IN OBSTETRICS.

He said that puerperal fever was caused by the presence of microbes upon a lacerated surface of cervix or vagina. That prophylaxis was incumbent upon the physician in every case. He recommended cleanliness, and asepsis by the use of bichloride solutions for the hands and for vaginal douches and uterine douches, if the hand had been put into the uterus.

Dr. H. R. WILDER, of Swanton, said the microbe was likely to find its way into the genital tract in any case and produce puerperal fever. He would use douches in every case.

DR. FROST thought decomposition due to micro-organisms, and their destruction to end danger from puerperal fever. He advocated cleanliness, and thought that would answer in most cases.

DR. UPHAM said he questioned whether microbes were the cause or the consequence of puerperal septicæmia.

DR. WM. R. WHITE said that in case a physician put his hand into the uterus, he should first render it aseptic, if possible, or use antiseptic douches afterwards.

DR. C. S. CAVERLY read an exhaustive paper upon
THE PRESENT STATUS OF THE GERM THEORY.

DR. O. W. SHERWIN presented a paper on

THE LOCALIZATION OF FUNCTION IN THE BRAIN.

He exhibited several diagrams showing the brain and its envelopes, and demonstrated the manner in which lesions producing paralysis, anæsthesia, aphasia, etc., could be located.

At 4.30 P. M. the Society adjourned to the House of Representatives to listen to the annual address by the President, DR. EDWARD R. CAMPBELL. A large number of the members of both houses of the Legislature were present by special invitation.

DR. CAMPBELL discussed the subject

WHAT CONSTITUTES IRREGULAR PRACTICE?

He said that medicine is a liberal profession, subject to no bonds except those of science and truth, and if at any time any new remedy is discovered, or system cure arises, no matter how great or how humble its origin, it is our duty and privilege, if there be one grain of truth or progress in it, to utilize it in our endeavor to alleviate human suffering.

In the matter of consultations, he said we should always consider it a duty to assist in relieving human suffering.

Dr. Campbell spoke upon the subject of expert testimony in the courts. He cited many writers to show that medical testimony was held in low esteem by bench and bar.

What has brought medical testimony into such seemingly merited disrepute, while in other respects the medical profession is regarded with honor, and is above suspicion? One reason is the fact that the family physician allows himself to be brought into sympathy with his patient's cause, and this sympathy and his personal interest in his patient allows his judgment to become biased. Another reason is the fact that the physician goes upon the witness stand without studying the details of the case. While cream of "bench and bar" have severely criticized our profession in the matter of expert testimony, yet they are no better than the humblest of us; for how else can the famous eight to seven decision of the electoral commission be explained?

Here grave and reverend judges of the Supreme Court decided questions pertaining to the highest office the sun shines on—the presidency of the United States—according to their political prejudices. No matter whether right or wrong, the fact remains that on questions of law their decisions were in the direction of their political prejudices.

With such examples before us, can we blame the physician for being at times prejudiced in his patient's favor?

How shall we eliminate this element from our courts of justice, and have the medical expert go, as the judge goes, bound to deal impartially with both sides.

Dr. Campbell advocated a State law allowing the judge, at his discretion, or at the request of either side, to summon one or more medical experts, whose fees should be provided for by law. If the practitioner was summoned by the court with a full understanding that he was to act, as it were, as medical instructor to judge and jury, he would be more fully prepared to give a complete and impartial medical opinion in the case.

Dr. F. W. Draper, of Boston, a prominent authority in medico-legal literature, says: "It is plain that the only way out of the difficulty is through legislation. Statutory law must prescribe the *modus operandi*, and forbid practice contrary thereto, and establish legal provisions which shall be clear and just for the guidance of all concerned."

EVENING SESSION.

DR. A. C. BAILEY, of West Randolph, presented his paper on

THE ANATOMY, PHYSIOLOGY AND THERAPEUTICS OF THE PHARYNX.

He said that among the whole list of diseases that ever infected the human race in this particular part of the country, none more frequently came under the observation of the general practitioner than inflammation of the pharynx, or some of the openings communicating with it. From repeated attacks it is liable to become chronic, and to cause, by continuity of tissue, a catarrhal state of the eustachian tubes, larynx, œsophagus, posterior nares and bronchial tubes, whereby the normal tone of the whole system is lowered.

Dr. Bailey gave in detail the anatomy and physiology of the pharynx, after which he said the first essential in the successful treatment of diseases of the pharynx, or any of the passages or cavities leading therefrom is cleanliness. Cleanliness alone is sufficient to bring about a cure, at times, without the assistance of remedies, and especially is this the case when the inflammatory process is kept up by constant exposure to an atmosphere loaded with irritating substances in such quantities as to overwhelm the normal functions of the cilia of the ciliated epithelium, and so interfere with the action of the glands. Most cases are of long duration, and inflammatory changes have taken place, giving rise to hypertrophies, ulcerations, etc. The most common but not the most effective way of cleansing the posterior oral cavity is by gargling. When we desire to reach the posterior surface of the pharynx gargling is of no benefit whatever.

Dr. Bailey condemned the method of drawing the medicine up from a tumbler, or of snuffing it from the palm of the hand. The douche and the atomizer are to be greatly preferred, the atomizer being best of all. The agents employed in treating the pharynx or nasal passages should be such as, if accidentally swallowed, would cause no deleterious effects.

For ordinary cases but a few agents are necessary. The bicarbonate, bichloride and chloride of sodium and the chloride of ammonium, in the strength of four to eight grains to the ounce, are all effectual, all of them being slightly astringent, mildly stimulating, and aseptic. Bromide of potassium, fifteen grains to the ounce, is valuable when slight anesthesia is desired. In sim-

ple congestion mild stimulation with chloride of ammonium is beneficial. If there is hypertrophy, and stimulation is contraindicated, bicarb. sodium would come in play on account of its non-irritating character.

In cases with offensive discharges use bichlorate of soda, or permanganate potass., gr. i to ounce; carbolic acid, gr. i to ounce; or salicylate of soda, gr. v to the ounce. So far as internal medication goes, there are usually special indications in each individual case.

DR. HENRY BOYNTON, of Woodstock, spoke upon

HYSTERIA

as follows: Hysteria is responsible for a large part of the suffering of female patients and of some male patients. We should study hysteria from its mental side, as well as from its physical. Hysterical symptoms should, if it were possible, be studied in that borderland between the mind and the body. Hysteria, in the majority of cases, is due to a loss of will-power. If this is so, the first step in rational treatment is to help the patient get control of herself. A solution of the subject on this basis is difficult. Get the confidence of your patient, but never let her know that you have any sympathy with her difficulty.

Dr. Boynton gave history of several interesting cases, all of which were cured at once on this basis:

Conclusions: (1) Hysteria is due to loss of will-power. (2) It is not amenable to treatment with drugs. (3) Our first duty is to try to help patients to come to themselves—to restore, if possible, lost will-power.

DR. J. H. HAMILTON, of Richford, presented the next paper, upon

DIPHTHERIA: ITS HISTORY, CAUSE, AND PREVENTION.

After speaking at length upon the history and cause of the disease, he said diphtheria is a preventable disease. If proper precautions are early adopted, it may be limited to the first cases; therefore, when it gets away from primary cases, and communities are thereby made to suffer, some one is to blame. The most effectual method of prevention is by quarantine, the isolation and disinfection of patients, and the disinfection of apartments where the disease has occurred.

To illustrate the good results from this course, the speaker gave the following statistics from his own experience: In the town of Montgomery, from one outbreak there were 150 cases and 30 deaths, no attempt having been made to prevent its spread. In Richford there were 7 outbreaks, 17 cases, and 3 deaths—this the result of proper and prompt precautionary measures.

Adjourned to 9 A. M.

SECOND DAY, OCTOBER 12TH.

DR. F. T. KIDDER, of Woodstock, presented a valuable paper on

CEREBRO-SPINAL MENINGITIS.

DR. L. M. BINGHAM, of Burlington, presented a paper on

A REPORT OF A CASE OF TAIT'S OPERATION FOR REMOVAL OF OVARIES.

Miss M. M., seamstress and fancy needle-worker. Never menstruated until twenty-two years of age. Was never regular, menstruation occurring once in from three to eight months. In two instances the interval was one year. She began having pulmonary

hemorrhages at fifteen years of age, and they continued at intervals of from one to three months up to time of operation. These hemorrhages usually just preceded menstruation. For last six years, every menstrual flow has been attended with severe local and constitutional symptoms. Local symptoms were pain in pelvis, particularly on left side, tympanites, extreme tenderness, retention of urine, with occasional attacks of suppression, accompanied by albuminuria. Constitutional symptoms were vomiting, loss of appetite, elevation of temperature, coated tongue, and hysterical attacks. Cataleptic and hysterical attacks were frequent and severe. During last year previous to the operation she was confined to bed three-fourths of the time. She became greatly emaciated, and slept but little.

The operation was done on May 31, 1888, at Mary Fletcher Hospital. Both ovaries were removed. They were of large size, but there were no adhesions. Both contained a large number of cysts, in size from a pea to a filbert. Case has progressed favorably. Patient has gained in flesh, and is able to walk about without pain or discomfort. Says she feels better than in ten years. Has had one slight attack of hysteria since operation.

For past two months she has been free from any return of the previous troublesome symptoms. Is gradually resuming her needlework, and looks forward with pleasure to a life of better health than she has ever known. Formerly her life was one of despondency, with suicidal tendencies.

DR. C. P. FROST, of Hanover, N. H., was elected an honorary member of the Society.

The Constitution and By-Laws were amended, making the place of holding annual meeting in off year of Legislature in Burlington, instead of Montpelier, as at present.

Officers for the coming year were elected as follows: *President*, J. M. Clarke, Burlington; *Vice-President*, F. W. Goodall, Bennington; *Secretary*, D. C. Hawley, Burlington; *Treasurer*, D. G. Kemp, Montpelier; *Auditor*, C. E. Chandler, Montpelier; *Executive Committee*, J. M. Clarke, D. C. Hawley, F. R. Stoddard; *Publication Committee*, A. B. Bisbee, D. G. Kemp, C. M. Chandler; *License Censors*, C. S. Caverly, J. D. Brewster, J. N. Jenne.

The semi-annual meeting in 1889 will be held in Brattleboro, on the last Thursday and Friday in June.

Recent Literature.

Disinfection and Disinfectants; their Application and Use in the Prevention and Treatment of Disease, and in Public and Private Sanitation. By the Committee on Disinfectants, appointed by the American Public Health Association. Concord, N. H., 1888. pp. 266.

In no department of public hygiene has more rapid progress been made during the past ten years than in that of disinfection. The American Public Health Association, realizing the importance of the subject, appointed a Committee in 1884 which, after three years of diligent investigation, has embodied the results of its inquiries in this valuable publication. The character of the experts selected for this work, of whom Dr.

George M. Sternberg, U. S. A., is chairman, is a sufficient guarantee of the value of their report.

The book is not a mere compilation of the results of observation of various authorities, American and foreign. It contains the results of a great number of carefully conducted experiments, made with reference to the determination of the germicide power of different disinfectants. Many of these experiments were made by Dr. Meade Bolton, whose training in the laboratories of Flügge, of Göttingen, and Koch, of Berlin, had especially qualified him for such work.

Full descriptions, with illustrations, are also given of the principal forms of apparatus used for disinfection by means of moist and dry heat.

A thorough acquaintance with the principles of preventive medicine is by no means the least duty of every physician, and in this work the physician in general practice, and especially the health officer, will find an invaluable companion.

A Practical Text-Book of the Diseases of Women. By ARTHUR H. N. LEWERS, M.D., of London, with illustrations. Philadelphia: P. Blakiston, Son & Co. 1888.

This work is a condensed manual of gynecology, and is intended to be of especial value to the beginner. Its advantages are that, while the author has aimed to be concise, he has also kept steadily in view the practical side of the subject, and has as far as possible omitted what is theoretical, or not proven. His style is clear and his arrangement good, and the pithy treating of the differential diagnosis are, considering the size of the book, unusually well treated.

The disadvantages are those which are common to all small manuals. The attempt to cover the ground of so wide a subject in so limited a space results, of necessity, in a treatment of the subject which lacks perspective. If the book aims to include everything from the bimanual examination to hysterectomy, neither the simpler nor the more difficult subjects will be treated in the best way. The first principles, the methods of examination, and the common everyday affections will not be fully enough discussed, while the more complicated operative procedures to be of any value must be much more minutely described, and had better be left to more comprehensive text-books. This inequality shows itself in this book particularly in the consideration of the methods of examination. The proposition that the bimanual examination "can be made equally well whether the patient lie on the left side or on the back" is certainly open to question. So, too, the author is evidently unfamiliar with the use of Sims's speculum, as in describing the use of Hegar's dilators he advises putting the patient in the *lithotomy* position, and introducing Sims's speculum.

The illustrations are unusually good for a work of this character, and the book is attractively printed and bound.

Lectures on Certain Diseases of the Jaws. By CHRISTOPHER HEATH, F.R.C.S., England, etc. 64 illustrations. P. Blakiston, Son & Co. 1888.

This volume of 128 pages is a reprint of a series of lectures delivered at the Royal College of Surgeons of England in 1887, and which subsequently appeared in the *British Medical Journal* for that year.¹ The subject is treated from a clinical standpoint chiefly, and is a valuable contribution to this especial department of

surgery. It is divided into three lectures, entitled as follows: (1) Cystic disease of the jaws, including affections of the antrum; (2) tumors of the jaw; (3) diseases of the temoro-maxillary articulation and closure of the jaws. The lectures are well-written, and include the description of many cases illustrative of the affections described. The illustrations contribute to the completeness of the cases, especially in the lecture on tumors.

A Compend of Surgery for Physicians and Students.

By ORVILLE HORWITZ, B.S., M.D. Third edition, thoroughly revised, enlarged and improved, with ninety-nine illustrations. P. Blakiston, Son & Co. 1887.

This Quiz Compend is a manual based upon the most popular text-books of surgery of the day. It is well-arranged, condensed to a degree which sacrifices thoroughness, and would be useful alone to a student preparing for an examination on the subject of which it treats. The illustrations are practically all borrowed from the standard text-books on surgery. The book of to-day should have a little of the haven of originality in its make-up, and this book cannot lay claim to any such distinction.

A Short Manual of Surgical Operations. By ARTHUR E. J. BARKER, F.R.C.S., Surgeon to University College Hospital, Assistant Professor of Clinical Surgery in University College, London. With 61 illustrations. pp. 425. London and New York: Longman, Green & Co. 1887.

The author, in this work, has given the profession a fairly complete compilation and collation of the operative procedures now in ordinary use. The author writes in a clear, terse, practical manner, giving the different operative procedures and his own experience in a short summary at the end of each description. Although certain parts of the work might well have been amplified, namely, the chapter on the operations on the nerves, he has accomplished the result of producing a very interesting and thoroughly reliable work. The book may well be classed among the best-filled, as it is, with the latest information on the given subjects, enriched by the author's personal experience.

The Rectum and Anus; their Diseases and Treatment.

By CHARLES B. BALL, M. Ch., University of Dublin, F.R.C.S. I., surgeon to Sir Patrick Dun's Hospital, University Examiner in Surgery, and Member of Surgical Court of Examiners, Royal College of Surgeons, Ireland. With fifty-four illustrations, and four colored plates. Philadelphia: Lea Brothers & Co.

After carefully reading this work, one can but feel that the author has admirably accomplished the purpose for which the work was written. He has dealt with his subject comprehensively and tersely, clearly and frankly, showing a broad mental grasp of the subject, and yet never omitting minute details. The author has given not alone a "compilation" of the literature of the subject, but has brought to bear on this information a clear judicial mind well stored with personal experience which is so important in sifting the chaff. The chromo-lithographs are not works of art, and add but little to the value of the work. Few works, however, can be turned to in time of need that will give more accurate, satisfactory information, than this clinical manual.

¹ Brit. Med. Journal, 1887, 1257.

Phosphorus Necrosis of the Jaws. By J. EWING MEARS, M.D. Reprinted from the Transactions of the American Surgical Association, Vol. III, 1885. Philadelphia: Wm. J. Dornan, printer, northwest corner Seventh and Arch Streets. 1886.

J. Ewing Mears has placed the profession under obligations to him in giving to it this little monograph of fifty pages. In it quite a full account is given of the dangers attending the different stages of the manufacture of matches, and the precautions which should be taken by employers to protect their employees is quite fully set forth. Directions are given for the local and operative treatment of the affection which is based on the author's large experience. The monograph may really be said to be an authority on the subject of which it treats.

—The Trustees of the Hoagland Laboratory of Brooklyn announce the completion of the Laboratory, and its equipment for practical work. Special facilities are offered to those who desire to prosecute original research. For this purpose private laboratories are provided, and arrangements are now being made for the purchase of a library which shall contain all the literature necessary for reference in the departments of bacteriology, physiology, and pathology. The course of lectures on "Bacteriology," by Dr. George M. Sternberg, already announced, will be postponed until his return from the South. The Trustees further announce that the services of George T. Kemp, Ph.D., Johns Hopkins University, have been obtained as Associate in Bacteriology and Physiology, and that with his assistance, and under the direction of Dr. Sternberg, practical instruction in bacteriology will be given during the winter and spring. The fee for this course of instruction has been placed at \$15, which will entitle the subscriber to prosecute his studies until June 1, 1889, during as many hours of the day as he may desire. Applications for subscriptions to this course may be directed to J. H. Raymond, M.D., Secretary.

—The use of cocaine solutions for the purpose of anæsthetizing the sensitive mucous membrane of the urethra, would seem to be attended with some amount of risk. In July last a fatal case was recorded in this country, following the injection of the urethra with a solution of cocaine, and one or two cases have, according to the *Medical Press*, since been reported of convulsive seizures under similar circumstances. In certain persons cocaine, indeed, would appear to possess the power of inducing or precipitating epileptiform attacks quite irrespectively of the dose employed and of the particular route of entry into the circulation. The cyanosis and collapse which result with comparative frequency from an overdose, using this term in its physiological and not in its pharmaceutical sense, though very alarming, but rarely terminate fatally. It is desirable that all cases of untoward results should be published, so that the profession may be enabled to form a correct estimate of the danger incurred when this useful but occasionally toxic drug is resorted to.

THE BOSTON

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THERAPEUTICS AS JUDGED BY FIGURES.

UNDER this head M. M. Bourgoni and Beurmann, continuing a work begun by Laségue and Regnaud, and completed down to 1877, have published an interesting document relative to the yearly amounts of various medicines used in the public hospitals, dispensaries and prisons of Paris. This information was easy of obtention, as all the supplies pass through the Pharmacie Centrale, and the books of this establishment indicate the aggregate of sales of all pharmaceutical and medicinal articles in use in the numerous hospitals, and other public or charitable institutions of that great metropolis. Such statistics represent the therapeutical fashions of the day, the degree of esteem which the mass of practitioners have for this or that medicament, and the "survival of the fittest" among therapeutic means, as the really useful medicines are sure in time to come to the front, and what everybody prescribes the most must commend itself by the results which it gives.

The introduction of antisepsis into therapeutics "marks the most important and fruitful revolution of the last two decades." The enormous increase in the consumption of antiseptic agents shows how rapid and complete has been the success of the antiseptic method. The following table gives the yearly sales in kilograms of various members of that series from 1876 to 1885, inclusive:

	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
Phenic Acid...	369,125	1,179,162	5,876,370	5,782,151	11,935,112	11,217				
Boric Acid...	10,250	17,43	101,192	237,502	1,067,1,909					
Thymic Acid...	0.250,0.600	2.325,2.466	3.673,4.290	8.855,11.775	28,12,420					
Thymol.....	" "	" "	" "	1.250,0.750	0.250,1.250	10,400,3,950				
Permang. of Potassium, }	8,350	12,13	13,13	5,15	16,750,22,700	23,710,28				

From the above table it will be seen that phenic acid, which for the first time appeared on the books of the Central Pharmacy in 1862, when the consumption was only 260 grammes, has been steadily rising in de-

mand, till the sales reached their maximum of 11,955 kgs. in 1884. Boric and thymic acids follow the same progression. Iodoform, of which only 22 kgs. were sold in 1876, reached the figure of 289 kgs. in 1884, and 353 in 1885. The increased demand for corrosive sublimate for surgical and obstetrical purposes, explains why the sales of this antiseptic have more than trebled within ten years.

Salicylic acid has undergone oscillations which indicate that medical opinion is not yet established with reference to the particular circumstances in which it should be employed; in fact, the sales have greatly fallen off the past four years. Salicylate of sodium, on the other hand, speedily reached a high figure, which it has maintained; sales which were nil in 1876 amounted, in 1880, to 324 kgs., and in 1885 to 355 kgs. This large demand for a medicament which is prescribed mostly for internal use, may be regarded as an indication of the success which has attended its employment in acute rheumatism. Subnitrate of bismuth, than which no medicine is more universally used in the treatment of diarrhoea, has also been steadily advancing in the rate of consumption. The consumption of quinine has also been on the increase; the sales in 1885 were 70 kgs. to offset 47 kgs. in 1876. Although, say the French writers, its specific action against the agent of the malarial infection has rarely to be sought in Paris, it none the less continues to be more and more in demand, and it is probable that this is due, on the one hand, to the becoming obsolete of means once relied on to combat elevated temperatures, such as bleeding and antimonials, and, on the other, to the fact that the autizymotic properties of quinine are oftener than ever sought and realized. The demand for the various kinds of cinchona bark, so much in vogue as agents of "the tonic medication," and used in the preparation of the wines, elixirs, extracts, etc., has also been on the increase, although the past two or three years there has been a perceptible falling off, as, for various reasons, faith in the so-called *tonics* has been on the decline. "These," say MM. Bourgoïn and Beurmann, "are *superfluous medicaments* (*medicaments de luxe*) which respond to no precise indications, whose physiological and therapeutical action is not susceptible of any precise estimate, and which might without loss, disappear from hospital usage."

Ferruginous preparations, as a whole, remain stationary. This is attributed to the fact "that their utility remains demonstrated by the results of clinical experience." "The most recent hamatological researches have been favorable to their usage in specifying their rôle in the reconstitution of the blood corpuscles. The lactate, the potassio-tartrate, the carbonate, seem to be favorite preparations, while the syrup of the iodide is in constantly increasing demand; this is thought to be largely owing to the fact that this preparation represents in the estimation of most physicians, a mixed medicant in which the iodine plays no less important a rôle than the iron. The two arseni-

cal preparations which appear to be the most popular are the granules of arseniate of soda and Fowler's solution. The consumption of the first has arisen from 2,800 kgs. in 1876 to 7 kgs. in 1885; the second, from 11 kgs. in 1876, to 44 kgs. in 1885. These figures show that professional confidence in the medicinal virtues of arsenious acid not only remains steady, but is on the increase.

Within the last decade the demand for alkalies has shown an augmenting ratio, and carbonate of lithia, which had for the first time, a place on the books of the Central Pharmacy in 1864, has become a staple article of commerce; the amount used in the hospitals in 1885 was about two kilogrammes.

An exhaustive table prepared by the French physicians shows that the consumption of purgatives the past ten years has been nearly uniform. There seems, however, to be a tendency to a reaction against their routine employment.

Certain agents of what used to be called the "spoliative medication" have certainly been constantly declining in popularity. Thus the sales of leeches which, in 1876, amounted to 50,650 kgs., had fallen in 1885 to 26,320 kgs. The maximum demand for leeches (according to the table of Lasèque and Regnaud) was in the year 1836, when it took 1,280,000 kgs. to supply the hospitals of Paris. On the other hand, the use of tartrate of antimony does not seem to have sustained much variation, due, in large part, to the prevalence of bronchial complaints, and the faith which the profession still has in this antimonial in the acute stages of these affections.

It is interesting to note that the consumptions of the alcohols, which was markedly on the rise when Lasèque and Regnaud made their report, has considerably depreciated since 1880. The French writers are inclined to see in this fall an indication "of the revival of active therapeutics as a substitute for the routine employ of tonics." The latter, in fact, "are often given, with the hypothetical end in view, to raise the forces of the patient, no matter what disease he may be affected with, at a time when there is no hope of reaching the pathogenic agent or attenuating its effects." This kind of treatment is denounced as unscientific, and as destined to fall into desuetude.

Among other interesting facts brought to light by this report, we note that anesthetics continue in increasing demand. The consumption of both ether and chloroform has doubled during the last ten years. The multiplication of great operations in which the patient is kept long in a state of anaesthesia, sufficiently accounts for this rise, which has been synchronous with the progress realized in surgery through the introduction of antiseptics.

Of the various narcotics and hypnotics, opium still holds its high place. The sales in 1876 were 199 kgs., against 199 for 1885. The use of morphine seems to be on the increase. The consumption in 1885 was 17,060 kgs., as contrasted with 10,920 kgs. in 1876. Codeia seems to possess a growing favor. There has

been an increasing demand for granules of atropine, while chloral has been for eighteen years on the ascending grade. The demand for the bromides, with some fluctuations, has been steadily on the rise. Aconite and aconitia continually undergo fluctuations, which show that the medical men of France are not yet settled as to their real importance.

Of the new medicaments none has had such enormous extension as antipyrine. In 1884 the sales were entered at 725 grammes. It was then prescribed solely for antithermic purposes. In 1885 it was proclaimed to be a superb analgesic. The sales went up that year to 26.4 kgs., and have continued to rise. Of other antithermics, thallin and kairin have virtually gone out of use. Acetanalide, (antifebrin), however, meets with continually growing favor. Ergot and ergotine still hold their place in popular estimation. Their sales have nearly doubled during the past decade. Digitalis has gone out of vogue, while the demand for digitalis leaves is constant. Jaborandi and pilocarpine also seem to be on the decline, while coca and cocaine have been steadily on the rise. Among the neutral salts none is more in demand than chlorate of potassium, for its supposed utility in bacal and throat inflammations. The use of balsamics and of pepsin does not decline, while the antisiphilitics, iodide of potassium and mercurials are demanded in ever augmenting proportions, as the statistics of our authors clearly show.

INTUBATION IN GERMANY.

THE interesting article on Intubation read at the late Congress at Washington, and recently printed in this JOURNAL, will receive an added interest from a brief summary of the position of the operation in a country not too ready to accept American ideas.

Several recent communications have brought us knowledge of the position intubation holds in Germany, where the results, while not altogether satisfactory, are not certainly so poor as to discourage further trial. Professor Thiersch of Leipzig, however, who with Dr. Rehn¹ of Frankfurt, reported his experience at the last Congress of German Surgeons, as is stated in a letter in the *New York Medical Record*, has laid aside the operation. Tracheotomy enters the lists with intubation, with the following statistics: the percentage of recovery at Leipzig is 24.5 in 697 operations; at the Hospital Bathanian in Berlin, 28%, in 1926 operations; at the Erlangen clinic, 27% in 113. Against these figures we have now of intubations: Thiersch with 32 cases and 3 recoveries, or 9.37%; Rehn with 14 cases and 4 recoveries, or 28.57%; and Graser with 5 cases and 1 recovery, or 20%. In 11 of Thiersch's cases a supplementary tracheotomy was necessary.

These observers have not found in intubation the substitute for tracheotomy that they expected, both Thiersch and Graser allowing it to be such only for

cases of croup where there is but little membrane and no swelling in the vestibule of the larynx. The difficulties encountered and the disadvantages have been much the same as here in America as, for example, the disturbance in swallowing, especially of fluids; that the children choke readily, and that the coughing out of the tube is especially dangerous; the tendency to inhalation-pneumonia; the liability to push down membrane before the tube; pain from the tube (Thiersch) and the necessity of direct and constant medical supervision in contrast with the sufficiency of a nurse in tracheotomy.

Graser² finds the new operation possessed of several advantages which if we are not mistaken have escaped previous observation. After declaring his conviction that intubation is easier to carry out, though to be sure he finds the question not one to be decided off hand, —tracheotomy is the "disturbing" operation, and "even the most experienced operator is relieved when he has the trachea bare," while the technique of intubation may be practised on the *cadaver* — he calls attention to the fact that air reaching the lungs through the natural passages is warmer and purer; even if a tracheotomy is necessary afterwards, as will very likely be the case in severe cases, intubation answers as well at first. Especially noteworthy is the consideration that the final removal of the intubation-tube never presents the difficulties that that of a tracheotomy canula often does. Graser has taken advantage of this in two cases where a tracheotomy canula could not be dispensed with at periods respectively of twelve days and six weeks by doing a secondary intubation; the laryngeal tube was removed with ease after five days in the first case, and in the second with difficulty in twelve days; hereupon an oedema glottidis ensued which made tracheotomy again necessary after twenty-four hours. In the discussion of Graser's paper a physician emphasized the fact that if the consent of parents were easier to obtain because it seemed less of an operation, nevertheless the dangers attending the introduction furnished an easy pitfall. Graser looks upon intubation as an addition to our resources to be further tested, and naively adds that the operation has not been well received in Germany because of a certain reserve towards American inventions, while many who have the instruments show little enthusiasm to use the, at first glance, somewhat hazardous instrument.

MEDICAL NOTES.

— At a meeting of the State Board of Health, says the Providence, R. I., *Telegram*, Secretary Fisher gave an account of the progress of the investigation of the causes of the typhoid fever epidemic in Bristol, R. I. Arrangements were made for such investigation on the 7th of August, and the work was commenced as soon as the authority was obtained from the governor, and the necessary means provided.

¹ Thiersch and Rehn. *Zeitschrift. f. Ther.*, July 15, 1888.

² Graser. *Munch. Med. Wehnschft.*, Sept. 18, 1888, p. 631.

It is conjectured that milk supplied from a farm where typhoid had existed may have had something to do with the spread of the epidemic, and that the bacillus now under dissection, cultivation, and microscopic observation by the Board, and used for inoculation of guinea-pigs, may have had something to do with it. If the Board had had sooner notification or more authority, the ravages of the disease could in a great measure have been prevented. How soon the investigation will be ended it is not possible to foretell.

—The twenty universities of Germany granted 847 medical diplomas in the year 1886–87 against 689 in 85–86. In France the numbers for these years were respectively 624 and 546.

—The *British Medical Journal* calls attention to the following remarkable instance of endurance in old age, which was recently recorded in a French newspaper. A widow, aged eighty-one, was found in the forest of Fontainebleau, where she had been for six days and nights without any shelter but the trees. The weather at the time was very wet and cold, and the old woman had no food whatever, except a few mushrooms. She is of feeble intellect, and could give no account of herself, but it appears that she was in the habit of going out every day for a walk, and it is supposed that on this occasion she had wandered farther than usual and could not find her way home. When found, she was in a very serious condition, but her medical attendant was by no means hopeless of her recovery.

—The *Medical Press* quotes some interesting remarks bearing on the practice of opium smoking in China, from the last annual report of the colonial surgeon for Hong Kong, more especially as regards the consequences to confirmed smokers of being deprived of the pipe while in gaol. He says the experience obtained in the Hong Kong gaol is that the habit of opium smoking is far less deleterious than spirit drinking. Old confirmed smokers were often found to have preserved a good appetite and a healthy digestion, and the suffering attendant on the deprivation of opium (which is not allowed to any one in the prison) was not more than in the case of a tobacco-smoker deprived of his pipe. There were no evidences of genuine suffering from the deprivation, though opium in any form is carefully excluded, and although opium smokers were subjected to exactly the same diet as all other prisoners, they remained of the average weight. Opium smoking, held forth as the Chinaman's greatest vice, is, he says, certainly not to be compared in its evil effects with the European vice of spirit drinking, a habit to which the Chinese, as a nation, are not given. He suggests that instead of making such an outcry and wasting large sums of money in trying to reclaim the Chinaman, we might with much advantage look nearer home and attend to our own need of reform in respect of intemperance.

—The first insane asylum in Attica has just been opened. Previously the insane were confined in convents.

NEW YORK.

—The Hospital Saturday and Sunday Association held its first meeting for the season at St. Luke's Hospital, October 15th, when it was stated that the indications were that the collection would be, at least, quite as large this year as in 1886, when it amounted to \$53,000. Last year, when the Presbyterian Hospital withdrew from the Association, it was \$50,500. The Committee appointed some time ago to consider the question of admitting dispensaries attached to hospitals to a share in the distribution of the hospital fund reported in favor of such a step, and outlined a plan for carrying it out, but no decided action on the proposed measure was taken by the Association.

—The corner-stone of the Townsend Memorial Building at Bellevue Hospital was laid October 16th with religious exercises, in which Archdeacon Mackay-Smith, the Rev. H. Y. Satterlee, D.D., and others participated. On the ground-floor of the building are to be the mortuary, the store-rooms for the use of the church guilds engaged in charitable work among the city hospitals, and the chaplain's room. On the second floor will be a reading-room, lecture-room, and library, all attractively fitted up; and on the third floor will be a handsome chapel, capable of seating two hundred persons.

—Dr. Paul Gibier, of Paris, the expert sent by the French Government to investigate yellow fever in Havana, recently arrived in New York on his way to Jacksonville, Florida, to make some further studies in connection with the disease. Previous to landing in Havana in October, 1887, he had himself twice inoculated with the yellow fever virus of Freire. The inoculation was made by means of a lancet, however, and the effects were but slight. On landing at Havana, he determined to have the inoculation made by means of a hypodermic syringe, as prescribed by Freire, and the illness resulting, although not resembling yellow fever in its symptoms, was so severe as nearly to prove fatal. His investigations in the hospitals, in which he was facilitated in every way by the authorities, led him to the same negative conclusions as Dr. Sternberg in regard to Freire's alleged discoveries.

—On Monday evening, October 22d, Dr. T. Gailard Thomas gave a large medical reception at his residence to Dr. William O. Priestley, of London.

Miscellany.

AMERICAN MEDICAL ASSOCIATION.

THE fortieth annual meeting of the American Medical Association, which has been postponed from the first to the fourth Tuesday of June, the 25th, 1889, will be held at Newport, R. I., on the 250th anniversary of the settlement of that city.

The following is the Committee of Arrangements: H. R. Storer, Chairman; C. F. Barker, M. E. Baldwin, C. A. Brackett, J. P. Curley, P. F. Curley, J.

P. Donovan, H. Eeroyd, Jr., V. M. Francis, T. A. Kenefick, G. M. Odell, F. H. Rankin, W. C. Rives, Jr., S. H. Sears, W. S. Sherman, H. E. Turner; W. Thornton Parker, Local Secretary.

The Associate Committee, appointed by the Rhode Island Medical Society, consists of G. D. Hersey, W. H. Palmer, G. T. Swarts, of Providence.

A CASE OF ARGYRISM.

A CASE of the above-mentioned rather uncommon affection has been related by Dr. Ivonikoff, says the Paris correspondent of the *Therapeutic Gazette*: A female patient, aged fifty-three, came to consult him for almost complete aphony and fits of suffocation. As her face and neck were colored a deep slate-gray, some questions were asked, and the following particulars elicited: When about sixteen the patient was treated for a syphilitic disorder, with mercurial ointment externally, and silver nitrate cauterizations of the throat. Since then she had taken the habit, whenever she had a sore throat, of treating herself with the same caustic, a fifty per cent. solution of argentic nitrate. But she never thought it necessary to take medical advice. As a result of her practice, not only were her face and neck slate-colored, but the same tint, slightly lighter, extended to the upper part of her back, arms, and bosom. Her palate and labial, gingival and pharyngeal mucous surfaces were dark gray, nearly black. According to the patient, the coloration began to appear during the fourth year after the first anti-syphilitic treatment. It is unnecessary to add she is thus indelibly marked for life, a warning to all patients who think they can take care of themselves without any doctors.

THE PATHOLOGY OF PERNICIOUS ANÆMIA.

AN elaborate paper on the above subject by William Hunter, M.D., F.R.S., Edinboro, in the *Lancet*, has the following conclusions: (1) Pernicious anæmia is to be regarded as a special disease, both clinically and pathologically. It constitutes a distinct variety of *idiopathic* anæmia. (2) Its essential pathological feature is an excessive destruction of blood. (3) The most constant anatomical change to be found is the presence of a large excess of iron in the liver. (4) This condition of the liver serves at once to distinguish pernicious anæmia *post-mortem* from all varieties of *symptomatic* anæmia, as also from the anæmia resulting from loss of blood. (5) The blood destruction characteristic of this form of anæmia differs both in its nature and in its seats from that found in malaria, in paroxysmal hæmoglobinuria, and other forms of hæmoglobinuria. (6) The view can no longer be held that the occurrence of hæmoglobinuria simply depends on the quantity of hæmoglobin set free. (7) On the contrary, the seat of the destruction and the form assumed by the hæmoglobin on being set free are important conditions regulating the presence or absence of hæmoglobinuria in any case in which an excessive disintegration of corpuscles has occurred. (8) In paroxysmal hæmoglobinuria the disintegration of corpuscles occurs in the general circulation, and is due to a rapid dissolution of the red corpuscles. (9) In

pernicious anæmia the seat of disintegration is chiefly the portal circulation, more especially that portion of it contained within the spleen and the liver, and the destruction is effected by the action of certain poisonous agents, probably of a cadaveric nature, absorbed from the intestinal tract.

LACTIC ACID IN TUBERCULOUS ULCERATIONS AND LUPUS.

THE treatment of tuberculous ulceration of the skin and mucous membranes by lactic acid has been advocated by Mosetig, and his favorable conclusions have been tested by M. Rafin, consulting surgeon to the General Hospital of Lyons. (See *Lyons Méd.*, July 8, and *Practitioner*, Sept., 1888.) He employed it first in two cases of tuberculous ulcer of the tongue, in which the diagnosis seemed very plain. Both patients were middle-aged men, of regular habits, with no sign or history of syphilis. The first (Antoine F.) was treated for a while with potassium iodide as a tentative measure to make the diagnosis more certain. No relief followed. One leg had been amputated for tuberculous disease of the knee; the tuberculous symptoms of the lungs were far advanced. The ulcer on the tongue was about the size of a shilling, with rough edges, and no induration. After the trial of potassium iodide the patient was put upon large doses of cod-liver oil, with a little liquor arsenicalis. The ulcer was painted twice a day with an eighty per cent. solution of lactic acid. The improvement was not very rapid, but was continuous, and in six weeks the ulcer was completely healed. The patient died six months later of pulmonary phthisis, but the healthy scar tissue did not break down. The second case was rather less severe, with less general tuberculosis. Under the same treatment the ulcer healed completely in six weeks.

The first case of tuberculous lupus was in a girl (Marie B.) of sixteen, of scrofulous temperament, who had much glandular swelling and blepharitis. The lupus affected the tip of the nose and both *ala nasi*. No tuberculosis of the internal organs was recognized. Local treatment by an eighty per cent. solution of lactic acid was followed after two months by complete recovery. The second case was in a man of twenty-one in whom the nose had been affected since he was thirteen. There was no tuberculous history or further tuberculous symptoms. He was treated with cod-liver oil and arsenic, and locally with the same solution of lactic acid. The recovery was slow, but steady, and after six months it was admitted to be complete after a careful examination before the Medical Society of Lyons.

In considering other cases of successful treatment of tuberculous ulcer of the tongue, one case of cure by chronic acid (Verneuil) is found, one by cupric nitrate (Flemming), two by iodoform (Fournier), others by salicylic acid. In tuberculous lupus the treatment adopted has been very various, but the methods that have met with any success have been electrolysis, scarification, and the application of some destructive substances. Mosetig claimed for lactic acid that it destroyed morbid but not healthy tissues. This M. Rafin is inclined to admit from his own observations. The base of the ulcers slowly detached itself, the caseous portions disappeared, and then granulated healthily, the fresh tissue growing from their edges. The

progress was not rapid, but successful in all the four cases in which it was used. Of its special action on the tubercle bacillus, M. Ratn professes no knowledge.

CURRENT TOXICOLOGICAL NOTES.

In the *Therapeutic Gazette* for October we find two or three interesting notes on poisoning by atropia, antipyrine, and cocaine. The first is taken from a recent number of the *Journal of the American Medical Association*, in which two physicians report cases of poisoning by atropine. In one case recorded by Dr. L. Eliot, of Washington, four grains of the sulphate are alleged to have been taken at a draught in watery solution. About an hour afterwards, when first seen by the doctor, the woman presented in a most violent form the well-known symptoms of atropine-poisoning. Two hypodermic injections (one-twelfth of a grain each) of apomorphine failed to vomit. One and one-third grains of sulphate of morphine were administered hypodermically in the course of eighty minutes, with a distinct change in the symptoms towards the opium type; caffeine and strong coffee were then freely given, and recovery finally occurred. The cases reported by Dr. J. McKone also ended in recovery; in one of them, that of a woman aged thirty-five, between one and one and a half grains of the alkaloidal salt were taken.

In regard to the symptomatology of these cases, it is interesting to note that in each instance violent muscular twitchings and a marked tendency towards convulsions are recorded, and that in one patient there were several attacks of opisthotonos.

The recovery reported by Dr. Eliot is remarkable, but appears to find its parallel or superior in a case put on record by a Dr. Machiavelli (*Jahresber. f. d. Ges. Medicin.*, 1880). In the latter instance a fatal result is affirmed to have been averted, although half a gramme, or over seven grains, of the alkaloidal salt were taken. It is true that in atropine-poisoning recovery usually occurs, but much smaller amounts than those just named have taken life. Lewin, indeed, states that one grain may cause death. The fullest collection of cases we can at present call to mind is that of Dr. Eliot, and in the only instance in this in which three grains were ingested death resulted. In a case mentioned by Taylor in his "Medical Jurisprudence," two grains induced a lethal issue.

So far as our reading goes, no serious poisoning by antipyrine occurring in a person not suffering from some acute constitutional disease has been as yet reported. That enormous amounts may be borne is shown by the case reported by Dr. Lauphear in the *Kansas City Index*. A woman, aged fifty-two, suffering from osteo-epic pains, took for relief from pain in five days one and a half ounces of antipyrine. At first there was an analgesic influence, but this passed off; there seems to have been no worse results from the remedy than weakness and pronounced cyanosis. Her skin was purple, her swollen lips black, and her extremities much swollen.

A rather remarkable case of cocaine-poisoning is reported in the *Australasian Medical Gazette* of July, 1888. Six grains were injected hypodermically by a dentist. The pulse fell to 38, very weak and intermittent; the respirations diminished to five a minute, shallow and irregular; consciousness was perfect, the

skin pale, dry, and cold. Subsequently, the patient became unconscious and pulseless, but under artificial respiration and hypodermic injections of ether recovery finally resulted.

SEXUAL PERVERSION THE CAUSE OF THE WHITECHAPEL MURDERS.

DR. HOWARD A. KELLY, writing to the *Medical News* in support of the view that an aggravated sexual perversity is the cause of the famous Whitechapel murders, gives the following examples to illustrate the peculiarity the instinct exhibits in these cases of adopting and adhering to one particular mode of expression, as well as several grades in the criminality:

Tarnowski quotes from Eulenburg, (*Vierteljahresschr. f. gerichtl. Med.*, 1878, Bd. 23, s. 61) a very curious case, which is but a type of a large number exactly similar in character—cases in which the sexual instinct is roused by white objects, more particularly the white underclothes of women. The victim of the passion steals these, and retires to his room with the white garment for the purpose of pollution. Sometimes he will wear the wash for awhile.

Brierre de Boismont (*Gazette Méd.*, July 21, 1849, Tarnowski) cites a case, a type of another class, in which the victim of the appetite seeks to gratify his passion by violating the corpses of young females recently died, which he accomplished in more than one instance by heavy bribes to the watchers. Another case of violation of the dead was one in which a soldier escaped periodically from his garrison and dug up recently buried corpses, and with great frenzy tore them open and pulled out the entrails, and there polluted himself.

The case of the Marshal of France, Gilles de Rayes (S. Jacob, *Curiosités de l'histoire de France. Causes célèbres*, Paris, 1859), is well known, and has a more direct bearing on the horrible instance under consideration. He was condemned to be burnt to death, in the time of Charles the Seventh, for the violation and murder of more than eight hundred children in the course of eight years. He had lived in retirement in his castles at Bretagne, where he had practised the most frightful cruelties upon children of both sexes. He had first been brought to a desire to commit his crimes by reading Suetonius's description of the orgies of the Emperor Tiberius, Caracalla, and others. He was in the habit of burning the bodies of the children, keeping the prettier heads as mementos. "I enjoyed," says the Marshal in his defence, "in this practice the most indescribable pleasure." He confessed to the King that he had left court on account of this irrepressible desire to violate children, and his fear that he would be guilty of carrying out his practices upon the heir apparent.

The conjecture of the writer seems to be supported in the instance before us by a variety of circumstances. A desire to murder without any *apparent* motive, a desire which practises its cruelties invariably upon women, and that of a certain class; added to this the mutilation of the genitals of the corpse, and, in at least one instance, the peculiar practice of slitting open the body and drawing out the entrails. In addition to this, it is of importance to note the periodic outbreak of the crime, in some measure corresponding to the time necessary to recuperation from violent sexual exhaustion.

REPORTED MORTALITY FOR THE WEEK ENDING OCTOBER 13, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhoeal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	702	267	19.60	14.14	6.02	2.10	3.64
Philadelphia	1,016,758	333	111	13.80	12.60	1.80	5.10	4.50
Brooklyn	751,432	284	114	19.25	15.40	4.20	2.80	4.55
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,100	—	—	—	—	—	—	—
Baltimore	437,155	147	47	15.61	12.24	4.76	2.04	3.40
Boston	407,024	186	74	22.11	14.04	5.40	5.94	8.10
Cincinnati	325,000	83	—	21.00	6.00	6.00	3.60	12.00
New Orleans	248,000	114	39	23.76	9.68	3.52	.88	10.56
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	110	38	25.48	15.47	2.73	8.19	3.64
Pittsburgh	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	125,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	13	4	30.76	23.07	15.38	15.38	—
Charleston	60,145	36	8	11.11	18.46	2.78	8.24	—
Portland	40,000	11	3	—	9.09	—	—	—
Worcester	36,288	27	13	18.50	11.11	11.11	3.70	3.70
Lowell	69,580	—	—	—	—	—	—	—
Cambridge	64,079	25	7	12.00	20.00	4.00	8.00	—
Fall River	61,203	33	13	24.24	18.18	9.09	12.12	—
Lynn	51,467	15	0	6.66	20.00	—	6.66	—
Lawrence	40,175	22	5	13.62	13.62	4.54	9.08	—
Springfield	39,952	12	1	16.66	8.33	8.33	8.33	—
New Bedford	36,288	13	3	15.38	7.69	15.38	—	—
Somerville	33,307	12	7	25.00	—	8.33	—	8.33
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	12	3	8.33	8.33	—	—	8.33
Chelsea	27,552	7	2	—	28.56	—	—	—
Haverhill	24,979	9	3	22.22	11.11	11.11	—	—
Taunton	24,796	7	2	14.28	14.28	14.28	—	—
Brockton	24,784	6	0	33.33	33.33	—	16.66	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	9	0	33.33	11.11	—	22.22	11.11
Malden	18,932	8	3	12.50	25.00	—	—	12.50
Fitchburg	17,534	8	2	—	25.00	—	—	—
Waltham	16,651	7	1	—	28.56	—	—	—
Newburyport	13,839	3	1	33.33	33.33	33.33	—	—
Northampton	13,386	—	—	—	—	—	—	—

Deaths reported 2,254; under five years of age 771; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 426; consumption 312, acute lung diseases 240, diarrhoeal diseases 108, diphtheria and croup 105, typhoid fever 86, whooping-cough 40, scarlet fever 34, malarial fever 28, measles 11, cerebro-spinal meningitis eight, erysipelas five, puerperal fever one. From whooping-cough, New York 17, Brooklyn eight, Boston and Washington four each, Philadelphia three, Baltimore two, Cincinnati and New Orleans one each. From scarlet fever, New York 19, Brooklyn seven, Philadelphia four, Baltimore three, Haverhill one. From malarial fever, New Orleans nine, Brooklyn six, Washington seven, New York and Baltimore two each, Philadelphia and Cincinnati one each. From measles, New York 11. From cerebro-spinal meningitis, New York three, Boston, Washington, Fall River, Somerville and Brockton one each. From erysipelas, New York four, Brooklyn one. From puerperal fever, Baltimore one.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273 for the week ending October 13th, the death-rate was 18.2. Deaths reported 3,286; infants under one year of age, 1,035; acute diseases of the respiratory organs (London) 230, diarrhoea 286, measles 55, scarlet fever 49, diphtheria 47, fever 40, whooping-cough 28.

The death-rates ranged from 12.8 in Oldham to 29.8 in Manchester; Birmingham 15.0; Bradford 18.6; Hull 19.6; Leeds 21.7; Leicester 18.1; Liverpool 17; London 16.5; Newcastle-on-Tyne 21.7; Nottingham 13.1; Sheffield 22.9; Sunderland 17.0; Wolverhampton 13.4.

In Edinburgh 15.1; Glasgow 18.0; Dublin 23.3.

SOCIETY NOTICES.

NORFOLK DISTRICT MEDICAL SOCIETY. — A stated meeting will be held at Rockland Hall, 2343 Washington Street, Roxbury, Tuesday, October 30, at 2 P. M. Examination of candidates for membership at 1 P. M. Written examination will begin at 1 P. M.; oral at 2 P. M. Order of business: Reading of Records; Report of Committees; Election of Nominating Com-

mittee; Incidental Business. Communications: I. "The Necessity of More Frequent Examination of the Urine," by Herbert W. White, M.D. II. "Migraine and its Treatment," by Harry M. Cutts, M.D.

S. ALLEN POTTER, M.D., Secretary.

SUFFOLK DISTRICT MEDICAL SOCIETY. — There will be a stated meeting on Saturday, October 27, 1888, at 8 P. M., at 19 Boylston Place. Dr. C. W. Townsend will read a paper on "Acute Lobar Pneumonia in Children." Dr. C. B. Porter will report a case of "Pelvic Hematocele: Operation by Laparotomy. Suture of the Sac to the Abdominal Wound, Drainage and Recovery." Dr. M. H. Richardson will report a case of "Laparotomy for Volvulus." Dr. F. E. Harrington will report a "Case of Removal of a Large Part of the Frontal Bone for Compound Fracture, with Recovery." Choice of a Committee of five to prepare a list of candidates for officers of the Society. Supper after the meeting. Members are requested to notify the Secretary of any change of address.

HERMAN F. VICKERY, M.D., Secretary.

OBITUARY. DR. L. WADSWORTH TUCK.

Dr. L. Wadsworth Tuck, house-physician at the City Hospital, died on October 18th, of diphtheria, contracted in the discharge of his duties, which had been more than faithfully performed. Dr. Tuck was twenty-eight years old, a graduate in high standing from Amherst College and the Harvard Medical School. After contending bravely and successfully with many difficulties, he was expecting in a few weeks to enter upon the practice of his profession. He was ill but six days, and bore without impatience or complaint the sufferings of this malignant disease.

Dr. Tuck was buried at South Weymouth, his home, where he was widely known and esteemed. At the largely attended memorial service held in the Union Church, the well-chosen words of the pastor's address paid a just tribute to the character of the deceased young physician.

The meteorological record for the week ending October 13, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending	Barom-eter.	Thermometer.				Relative Humidity.	Direction of Wind.			Velocity of Wind.	State of Weather. ¹			Rainfall.
Saturday, Oct. 13, 1888.	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.			8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration, Hrs. & Min. Amount in Inches.
Sunday, . . . 7	29.51	58.0	63.0	53.0	100.0	70.0	85.0	S.	N.W.	10	12	R.	O.	16.00 .96
Monday, . . . 8	29.37	50.0	61.0	44.0	66.0	60.0	63.0	N.W.	W.	12	12	O.	C.	
Tuesday, . . . 9	29.68	46.0	49.0	36.0	57.0	74.0	66.0	N.W.	W.	12	11	O.	O.	
Wednesday, . . 10	29.49	41.0	49.0	36.0	55.0	60.0	56.0	N.W.	N.	12	11	C.	C.	
Thursday, . . 11	29.98	45.0	55.0	34.0	76.0	67.0	72.0	N.W.	S.E.	8	5	C.	F.	
Friday, . . . 12	29.90	48.0	51.0	45.0	74.0	93.0	84.0	N.E.	N.E.	24	13	O.	R.	.06
Saturday, . . 13	29.76	48.0	55.0	42.0	93.0	78.0	88.0	N.E.	N.	7	12	R.	O.	32.00 .13
Mean, the Week.														

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. A., FROM OCTOBER 13, 1888, TO OCTOBER 19, 1888

By direction of the Secretary of War the following-named officers of the Medical Department will report in person, on October 23, 1888, to the President of the Army Medical Board, Army Building, New York City, for examination for promotion:

GARDINER, JOHN DE B. W., captain and assistant surgeon; GORGAS, WILLIAM C., captain and assistant surgeon; MACATLEY, C. N. BERRY, captain and assistant surgeon; KNEEDLER, W. L., first lieutenant and assistant surgeon; KEARNS, EDGAR A., first lieutenant and assistant surgeon.

Upon the completion of their examination the officers named will rejoin their proper stations. Paragraph 1, S. O. 229, A. G. O., Washington, D. C., October 13, 1888.

MUNDAY, BENJAMIN, captain and assistant surgeon. Is relieved from duty at Jefferson Barracks, Mo., and will report in person to the commanding officer Fort Sisseton, Dak., for duty at that post, relieving JOHN L. PHILLIPS, first lieutenant and assistant surgeon, and reporting by letter to the commanding general department of Dakota. Paragraph 11, S. O. 242, A. G. O., Washington, October 17, 1888.

PHILLIPS, J. L., first lieutenant, on being relieved by CAPTAIN MUNDAY, will report in person to the commanding officer Fort Lyon, Colo., for duty at that post, reporting by letter to the commanding general department of the Missouri. Paragraph 11, S. O. 242, A. G. O., Washington, October 17, 1888.

COMEGYS, EDWARD T., captain and assistant surgeon. Is relieved from duty at Madison Barracks, New York, and will report in person to commanding officer Fort Bayard, N. M., for duty at that post, relieving WILLIAM D. DIETZ, first lieutenant and assistant surgeon.

DIETZ, W. D., first lieutenant, on being relieved by CAPTAIN COMEGYS, will report in person to commanding officer Alcatraz Island, Cal., for duty at that post, reporting by letter to the commanding general department of California. Paragraph 18, S. O. 240, A. G. O., Washington, October 13, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING OCTOBER 20, 1888.

MAGRUDER, A. F., surgeon. Ordered to Marine Barracks, Washington, D. C.

STONE, E. P., assistant surgeon. Detached from the "Richmond" and to the "Minnesota."

KEENEY, J. F., assistant surgeon. Detached from the "Minnesota" and to the "Richmond."

McCONNICK, A. M. D., assistant surgeon. Detached from the Bureau of Medicine and Surgery, and to the "Vermont."

MOORE, A. M., surgeon. Detached from Naval Station, New London, Conn., and to the "Kearsarge."

ASTIN, A. A., passed assistant surgeon. Ordered to Naval Station, New London, Conn.

DEATH.

Died in Boston, October 19, 1888, Lorenzo Wadsworth Tack, M.D., M.M.S.S., aged twenty-eight years.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING OCTOBER 20, 1888.

ARMSTRONG, S. T., passed assistant surgeon. Granted leave of absence for sixteen days. October 17, 1888.

WOODWARD, R. M., assistant surgeon. When relieved at Marine Hospital, Boston, Mass., to proceed to Marine Hospital, Chicago, Ill., for duty. October 12, 1888. Granted leave of absence for thirty days. October 17, 1888.

CONDUCT, A. W., assistant surgeon. Relieved from duty at Marine Hospital, Chicago, Ill., ordered to Marine Hospital, Boston, Mass. October 12, 1888.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland. Ninetieth Annual Session, held at Baltimore, Md., April, 1888.

Biennial Report of the Officers of the Vermont Asylum for the Insane, for the two years ending July 31, 1888.

Transactions of the American Association of Obstetricians and Gynecologists at the First Annual Meeting, held in Washington, D. C., September 18, 19, and 20, 1888. Abstract. Reprint.

Report for the Year 1887-88, Presented by the Board of Managers of the Observatory of Yale University, to the President and Fellows.

Handbook of Historical and Geographical Phthisiology with special reference to the Distribution of Consumption in the United States. Compiled and arranged by George A. Evans, M.D. New York: D. Appleton & Co. 1888.

The Ear and its Diseases, being Practical Contributions to the Study of Otology. By Samuel Sexton, M.D., Aural Surgeon to the New York Eye and Ear Infirmary; Fellow of the American Otological Society; Fellow of the New York Academy of Medicine; Member of the Medical Society of the County of New York, and of the Practitioners' Society of New York. Edited by Christopher J. Colles, M.D. Octavo, 473 pages. Numerous illustrations. New York: William Wood & Co.

Disinfection and Disinfectants: Their Application and Use in the Prevention and Treatment of Disease, and in Public and Private Sanitation. By the Committee on Disinfectants, Appointed by the American Public Health Association. Concord, N. H.: Republic Printing Association. 1888.

Hydrocephalic Amaurosis. By Jabez Hogg, Consulting Surgeon to the Royal Westminster Ophthalmic Hospital, Hospital for Women and Children, etc. Reprint. 1888.

Eine neue Anwendung der Paraffin. Methode. Von Dr. Wilhelm C. Krauss. Attica (New York). Berlin NW: H. Kornfeld. 1888.

Chemical Experiments for Medical Students, arranged after Beilstein. By W. S. Christopher, M.D., Demonstrator of Chemistry, Medical College of Ohio, Cincinnati. Robert Clarke & Co., publishers.

The Extra Pharmacopœia with the additions introduced into the British Pharmacopœia, 1885. By William Martindale, F.C.S., late Examiner of the Pharmaceutical Society. Medical References and a Therapeutic Index of Diseases. By W. Wynn Westcott, M.B., London, Deputy Coroner for Central Middlesex. Fifth edition. London: H. K. Lewis.

Original Articles.

NERVOUS AFFECTIONS FOLLOWING INJURY.¹

("CONCUSSION OF THE SPINE," "RAILWAY SPINE," AND "RAILWAY BRAIN.")

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It is rather singular that the two most elaborate works on those affections of the nervous system which are supposed to follow injury should have been written by surgeons, and should have been based on the evidence of railway cases. One of these works, the influence of which is not yet dead, is based upon the ideas in regard to the pathology of the nervous system which obtained twenty years ago, and treats of all forms of injury of the central nervous system under the most misleading heading of "concussion of the spine;" the other, which reads like the work of a special pleader for the railway companies, discusses case after case of obscure nervous disease without mention of the condition of the reflexes. Fortunately, however, the attention of neurologists has of late been directed to the subject, and, since the appearance of Page's first treatise in 1881, many valuable contributions to our knowledge have been made in this country and in Europe, and the work done in Germany, especially, has brought the matter more fully to our attention.

Erichsen's composite of "concussion of the spine" has been found to be compounded of too many distinct conditions to be trustworthy, and, from the vagueness of his classification, his ideas on prognosis proved misleading; yet his work has had such an influence that the English railway companies are said to have paid eleven million dollars in damages in five years, and I have no question that it has also had an influence upon the great sums that have been paid in this state. The reaction, of course, followed, and it was aided by the cynicism that naturally arises when we see a man, who has claimed to be permanently injured, walk off as well as ever when the "damages" have been paid. It has seemed to me, however, that this reaction has gone too far, and therefore I have thought it worth while to go over the subject once more, and to review some of the recent work that has been done upon it. Before discussing controverted points, however, I will mention briefly certain definite lesions of the nervous system which may unquestionably follow injury.

Among the commoner results of injury are the affections of the peripheral nerves. The obstinate pain and persistent weakness of the shoulder which so often follow an injury are probably due to an implication of certain nerve fibres in the periarthritic process. Beside that, we often see various local paralyses, due to all sorts of lesions of the nerves, from simple pressure to severe crushing,—paralyses of all forms of intensity, from the transitory forms with normal electrical reactions to the severe atrophic forms with reaction of degeneration.

tion. The prognosis, of course, varies with the degree of injury, and is governed by the ordinary rules.

Trauma may produce certain definite lesions of the spinal cord and its coverings, beside the vague and questionable results of pure "concussion." It may, in the first place, cause fracture or dislocation of the vertebrae, and, secondarily, affect the cord itself. In these cases it not infrequently happens that the patient exhibits the symptoms of injury to the cord, while the injury to the vertebrae is noted only at the autopsy. With or without injury of the vertebrae, however, we may find serious injury to the cord,—hemorrhage into the meninges or into the cord itself, rupture of the pia with hernia of the cord, or acute myelitis.²

In addition to these cases of what may be called "acute injury to the cord," where the symptoms develop immediately after the accident, it is a well-attested fact that chronic degenerative processes may be due to injury; and here, of course, the symptoms are very insidious in their onset. Spitzka³ and Gowers⁴ cite cases of tabes dorsalis due to injury, and Hoffmann⁵ has just reported a very interesting case of tabes from Erb's clinique at Heidelberg due to a prolonged daily concussion of the whole body, especially the abdomen. Dana,⁶ too, has cited a case where tabetic symptoms followed a railway injury to a syphilitic subject, where he thinks the accident determined the localization of the morbid process. Beside tabes, injury may produce lateral sclerosis, progressive muscular atrophy,⁷ diffuse sclerosis,⁸ and disseminated sclerosis,⁹—the last two affections especially being extremely difficult to diagnose in their early stages.

There is, or rather was, another lesion of the cord which was once deemed of great importance and was regarded by Erichsen¹⁰ as the chief source of the symptoms of his "concussion of the spine,"—namely, spinal lepto-meningitis. We used to hear of it, but lately the cases have become rare, and, in fact, few now disagree with Strümpell's dictum,¹¹—"A case of primary chronic lepto-meningitis, which can be surely and convincingly proven clinically and anatomically, does not exist."

Finally, in the brain and its coverings injury may produce various lesions,—fracture of the skull, meningeal and intra-cerebral hemorrhage, pachymeningitis interna hemorrhagica, meningitis, softening, abscess, tumor, and various functional disorders, such as epilepsy, paralysis agitans, and chorea.¹² Furthermore, injury may give rise to various psychoses¹³ and chronic degenerative processes, especially paretic dementia,¹⁴ and of some

² E. Leyden. *Klinik der Rückenmarkskrankheiten*, ii. 371, II. 61, 62, 139.

³ E. C. Spitzka. *The Chronic Inflammatory and Degenerative Affections of the Spinal Cord*. Pepper's system of Medicine, v. 855.

⁴ W. R. Gowers. *Diseases of the Nervous System*, i. 229.

⁵ J. Hoffmann. *Beitrag zur Ätiologie, Symptomatologie und Therapie der Tabes dorsalis*. *Archiv f. Psychiatric u. Nervenkrankheiten*, xix. 475, 1888.

⁶ C. L. Dana. *Nervous Syphilis following a Railroad Injury*. The Post-graduate, April, 1888.

⁷ W. R. Gowers. *Op. cit.*, i. 450.

⁸ W. R. Gowers. *Op. cit.*, i. 238.

⁹ E. C. Spitzka. *Op. cit.*, p. 884.

¹⁰ J. E. Erichsen. *On Concussion of the Spine*, p. 85.

¹¹ A. Strümpell. *Lehrbuch der speziellen Pathologie und Therapie der inneren Krankheiten*, ii. 1. 430, 4te Aufl.

¹² Ch. Bataille. *Traumatisme et Névropathie*.

¹³ Hartmann. *Ueber Geistesstörungen nach Kopfverletzungen*. *Archiv f. Psychiatric u. Nervenkrankheiten*, vi. 98, 1884.

¹⁴ K. v. Knatt-Elbing. *Lehrbuch der Psychiatric*, i. 105.

¹ Read before the Boston Society for Medical Improvement 26th March, 1888, and before the American Neurological Association at the First Triennial Congress of American Physicians and Surgeons, 12th September, 1888.

of these, and of certain functional nervous affections, I will speak later.

Thus far all is clear and well defined. It would require an exhaustive treatise to speak fully of all these conditions and to dwell on their diagnosis and prognosis. They are met with more or less often, and usually they can be readily recognized. Beside these affections, however, there are other cases of a more obscure character, where our diagnosis is often doubtful and our prognosis sadly at fault.

Whether there is a true "concussion of the spinal cord" is still a matter of doubt. By this term I mean a paraplegia following injury, where the cord has sustained no coarse mechanical lesion, where "molecular changes in the finer nerve-elements have occurred, giving rise to an immediate and complete functional paralysis,"¹⁵ — a condition analogous to the commoner concussion of the brain. Page¹⁶ questions the possibility of such an affection, but cases have been reported which clinically answer the requirements.¹⁷ The anatomical relations of the cord naturally render it difficult for true concussion to occur; and, moreover, in simple concussion there is apt to be recovery, so that post-mortem evidence is lacking. Cases have been reported,¹⁸ however, where paraplegia came on suddenly after injury and terminated fatally, although no lesion could be found after death. Some of these cases are, of course, untrustworthy, as they were observed at a time when the methods of examining the cord were less exact, so that it is hard to exclude the existence of contusion or punctate hemorrhages into the cord. Duménil and Petel,¹⁹ however, still hold to a belief in commotion of the cord, which may be the origin of consecutive inflammatory lesions or sclerosis, and Dana²⁰ admits the existence, rarely, of true concussion. Some writers, Obersteiner²¹ among them, hint at the existence of chronic concussion in men who are constantly exposed to jarring, as railway employes, but such cases are more likely to be classed among the degenerations of the cord, as in Hoffmann's case already cited.

Beside the true concussion there are a host of obscure affections which have been classed by Erichsen under the general head of "spinal concussion," and about which there has been much controversy. Dr. R. M. Hodges,²² in a paper read before the Boston Society for Medical Improvement eight years ago, was one of the early dissenters from the views of Erichsen. He showed that a strain of the muscles or ligaments of the spine was capable of explaining many of the symptoms, and he believed that many of the cases were cases of functional nervous disease. Soon after Page²³ advocated the same views with somewhat more detail, ascribing the symptoms in cases of "railway spine" to a traumatic lumbago (that is, a strain) and a trau-

matic neurasthenia caused by the shock and terror of the accident.

Two years later Walton²⁴ found that in a number of cases of injury there was anaesthesia or hemianaesthesia, often involving the special senses, and, calling our attention²⁵ anew to the fact that many of the symptoms were cerebral, he suggested the term "railway brain," as more suitable than "railway spine." About the same time Putnam²⁶ reported similar cases, and they both suggested the relation between hemianaesthesia and hysteria. This theory has been further elaborated by Charcot,²⁷ who states that "these grave and obstinate nervous states, which are presented as the result of railway collisions, rendering their victims unable to return to their work or resume their ordinary occupations for periods of several months or even years, are often only hysteria, nothing but hysteria." Much of Charcot's last volume is devoted to the description of cases of traumatic hysteria, and a number of his pupils have published further studies upon the subject.

Before all this, in 1880, Westphal²⁸ had reported three cases of "railway spine," and had advanced the theory that the symptoms were due to small foci of myelitis or encephalitis caused by trauma, and that they were analogous in their symptoms to multiple sclerosis. Since then Westphal's assistants, Thomsen and Oppenheim, have made²⁹ an elaborate study of sensory disturbances in all forms of nervous disease, including railway spine, and have shown that hemianaesthesia is not pathognomonic of hysteria; and Oppenheim,³⁰ in a later paper, has carefully studied a second series of cases of "railway spine," with the result of substantiating Westphal's views.

Before discussing these various theories I will cite, as briefly as possible, some cases of nervous affections following injury that I have seen in the last three years. I have not selected these cases in the support of any theory, but I have picked out cases of different types, representing as fairly as possible the whole number of cases that I have seen. In only three cases was there any question of damages. One of these was a child, and another was seen after the award had been made, although a question of appeal was pending. Thus we can eliminate at the start two factors which have tended to obscure the subject and to bias opinion — the idea of simulation and the excitement that naturally attends litigation and is often a hindrance to recovery. This gives a more satisfactory basis to reason from, for, as the late Dr. Curtis said³¹ in the dis-

²⁴ G. L. Walton. Two Cases of Hysteria. *Archives of Medicine*, Aug., 1883.

²⁵ G. L. Walton. Possible Cerebral Origin of the Symptoms Usually classed under "Railway Spine." *Boston Medical and Surgical Journal*, 11th Oct., 1883.

²⁶ J. J. Putnam. Recent Investigations into the Pathology of so-called Concussion of the spine, etc. *Boston Medical and Surgical Journal*, 6th Sept., 1885. The N-dien-1-gead Significam e of Hemianaesthesia after Concussion Accidents. *American Journal of Neurology and Psychiatry*, Nov., 1884.

²⁷ J. M. Charcot. *Leçons sur les maladies du système nerveux*, iii, 251.

²⁸ C. Westphal. Einige Fälle von Erkrankung des Nervensystems nach Verletzung auf Eisenbahnen. *Charit'-Annalen*, v. 379, 1878.

²⁹ H. Oppenheim. Weitere Mittheilungen über die sich am Kopf, Verletzungen und Erschütterungen (in specie: Eisenbahnunfälle) anschliessenden Erkrankungen des Nervensystems. *Archiv f. Psychiatrie u. Nervenkrankheiten*, xvi, 743, 1885.

³¹ Boston Medical and Surgical Journal, 5th Feb., 1880.

¹⁵ W. H. Erb. *Diseases of the Spinal Cord*. Ziemssen's Cyclopaedia, xiii, 347.

¹⁶ H. W. Page. *Injuries of the Spine and Spinal Cord*, p. 53.

¹⁷ Wm Hunt. Concussion of the Brain and Spinal Cord. *Pep- per's System of Medicine*, v, 913.

¹⁸ E. Leyden. *Op. cit.*, ii, 91.

¹⁹ Duménil and Petel. Commotion de la moelle épinière. *Archives de Neurologie*, Jan., Mar., 1885.

²⁰ C. L. Dana. Concussion of the Spine and its Relation to Neurasthenia and Hysteria. *Medical Record*, 6th Dec., 1884.

²¹ H. Obersteiner. Ueber Erschütterung des Rückenmarks. *Mos. Jahrbücher*, p. 51, 1879.

²² R. M. Hodges. So-called Concussion of the Spinal Cord. *Boston Medical and Surgical Journal*, 21st, 28th April, 1881.

²³ H. W. Page. *Op. cit.*, p. 116 et seq. Also Buylson Prize Dissertation for 1881.

cussion of Dr. Hodges' paper, "treatises based, like Erichsen's work"—and the same may be said of Page and Rigler—"upon the evidence of railway cases are certainly the last sources of information from which one may learn to make a correct diagnosis and prognosis, and to escape being deceived by the voluntary or involuntary exaggeration and simulation so commonly observed in plaintiffs seeking damages." The sub-heading of "railway" spine and brain is hardly appropriate, for railway accidents were not the cause of the trouble in the majority of cases, and none of them were victims of a great railway accident, like that at Roslindale. Of course a railway accident has no specific effect, except that in it are brought into play the most tremendous forces that we employ in our daily lives, and the terror and horror of any great railway catastrophe has a vastly greater psychical effect.

I give the cases as briefly as possible, omitting unessential symptoms. I regret that in some of them my investigations in the domain of the special senses have not been as thorough as I could have wished.

I. Jeremiah C., 37, m., railway employe, consulted me in March, 1887. A year and a half before he was knocked off a cable car, striking his back, and losing consciousness. On return of consciousness he went back to work, and kept at it for an hour or two, but afterwards he was laid up for seven weeks. Now he has pain in the back, especially on motion, with rigidity of the spine, and lumbar tenderness. His arms feel helpless; he has numbness and tingling in the hands and at times in the legs; the legs are not as strong, and he has had cramps in them. Occasional vertigo, and rush of blood to the head. Nervous, fretful, low-spirited, and poor memory. Some vesical tenesmus, and loss of sexual power. Some exaggeration of knee-jerks. Some improvement under faradism and the actual cautery.

II. John D., 30, m., organ finisher, consulted me in February, 1888. Fell down stairs a month ago, striking small of back and buttocks. Great pain in the back. Diminished power in left leg. He cannot bend his spine, and has great tenderness in the lumbar region. He has a desire to empty his bladder most of the time, and, when he passes water, he thinks he is through before he really is, occasionally wetting himself. No sexual power since the accident. Quite nervous and rather alarmed as to his condition. Knee-jerks rather quickened, a tap setting up a general shrinking, as if from pain.

III. Martin H., 46, m., draw-tender. Referred to me at the Boston Dispensary, in August, 1886. Two years ago fell from a mast, thirty-six feet, striking back. Since then has had sharp pains in the back and abdomen, shooting down the legs. The legs are easily fatigued, feel numb and prickly, and as if a pad were between them and the floor. "Drawing" girdle sensation. Twisting or bending the spine, or riding in the cars, is painful. Faint spells and vertigo; severe headache at times. Nervous, low-spirited, and a poor sleeper. Short breath, palpitation, and a "drawing" feeling in the stomach. Poor appetite and digestion. Arms feel numb, and fingers feel as if asleep. Diminished

sensation in arms and legs, and some tenderness of nerve-trunks in legs. Lumbar spine flat, slight lateral curvature to the right, tender below tenth dorsal vertebra, the tenderness being greater by the sides of the spinous processes. Reflexes and electrical reactions normal. No ataxia.

IV. Bateman C., 59, m., electrician. January, 1886. Some months before he fell from a ladder, striking on his buttocks. No loss of consciousness. Nausea and vomiting till two months ago. Costive. Since accident loss of power and prickly throbbing in legs, worse in right leg, which has wasted. Legs at times feel hot or cold, both subjectively and objectively. No distinct pain in legs. Water had to be drawn for a week after his fall. A month ago fell, rupturing a vessel in his knee, and the knee had to be aspirated. Right leg two inches smaller, marked diminution of sensibility. Muscles of thigh do not react to either current on right, and very feebly to strong galvanic current on left. Much fibrillary contraction of right quadriceps. Distinct gain under galvanism. With improvement in strength and sensation in legs has decided pain in them.

V. Jeremiah O'D., 50, m., carpenter. Consulted me in August, 1885, being anxious to get a pension on account of his disability. Was stabbed in the abdomen in 1865, and had peritonitis after it. In 1870 the pension board rejected his application, thinking his hemiparesis was the result of apoplexy, but he denies any history of apoplexy. On recovery from the peritonitis, the left leg began to be weak, and he had pain and stiffness in the left hip. He could not walk without staggering and getting exhausted. Hard to lift left leg up stairs. Severe pain in left side and abdomen, and left side of head. Depressed, poor memory, slight mental impairment, vertigo, and diplopia; some tinnitus. Numbness gradually developed over his entire left side, less marked in the hands and feet, but amounting in some places to absolute anaesthesia and analgesia. Tingling and prickling on left side. Smell impaired; poor vision in left eye from cataract, field not contracted; taste poor on left; hearing worse on left. Diminished tactile sensibility over entire left side; left arm a little smaller and weaker. Cannot put left leg into a chair without great effort. Sways with eyes shut. Knee-jerk and cremaster reflex most marked on right; knee-jerk weak. Speech rather indistinct. Slight tenderness over left posterior tibial. March, 1888: Question of pension still pending. Has not improved since 1885. Symptoms much the same. Still has anaesthesia, which is most marked on the left, although tactile sensibility is blunted on the right. Considerable difficulty in walking, drags left foot. Trouble in locomotion increased on trying to make any quick movement.

VI. Susan W., 46, m. December, 1886. Neuritic tint. Fell on the ice last winter, striking left hip and elbow and causing hernia. Now the slightest effort causes pain across the chest and in the back. Lifting causes a "hot water" feeling in the hernia. Very severe headache, impaired vision, and increase of deafness in left ear. Tinnitus. Short breath and pleuritic stitch. Weak stomach; very costive; frequent micturition. Considerable pain in the arms, numb feeling on left side; the

left hand and foot get cold readily. Staggers on walking, and the left leg gives out. Cramps in the legs; numbness, prickling, and pain in the left leg. Great spinal tenderness; tender over stomach and lower ribs on each side. Tender over left ulnar, sciatic, and posterior tibial nerves. Diminished sensibility in left ulnar region, over left chest, and on outer side of left leg. Electrical reactions normal. Knee-jerks exaggerated, front-tap contraction. Eyes and ears not examined. March, 1888: Worse since last seen. Pain in left side and back; prickly feeling all over body. Much vertigo. Pain in right foot. Poor vision. Very nervous. At times has much trouble in passing water. Troubled greatly with leucorrhœa and piles. Field of vision good, *vos* 20-50. Fundus normal. Cannot hear watch with either ear, or through bone. Marked opacity of membrana tympani. Cannot stand with eyes shut. Slight tremor of hands. Extreme spinal tenderness.

VII. Annie S., 45, m. Seen in consultation February, 1886, with Dr. E. S. Boland, who has reported the case in full.¹² Not neurotic. Two years before she was thrown down an embankment by the sudden starting of a train, and had recovered damages, although the case was still in dispute. Much pain in head and lumbar region, and considerable vertigo. Sleeps poorly and has a poor memory. Poor appetite; very costive; has had jaundice since the accident. At one time had xanthopsia, at another melanopsia. Menses irregular and painful. Urine scanty. Wets and soils herself at times. Very marked anæsthesia over whole body, with analgesia. Some sensation in tip of nose, left ulnar region, and right cheek. All muscular efforts slow and weak. Cannot stand without support. Muscles do not react well to faradism; knee-jerks weak. Field of vision contracted, especially in right eye; *vos*, can count fingers; *vos*, 2-20. Monocular diplopia, *od*. Pupils react sluggishly to light. Loss of smell and taste. Hearing to watch, contact *ad*, four inches, *as*. Gained under treatment for three months. Later right ankle became weak. When last heard from, in December, 1887, she was still far from well, being quite lame, and having much pain in her back.

VIII. Chas. L., 14, s., school-boy. Referred to me by Dr. Cutter, of Leominster, in May, 1886. Nervous heredity. Posthumous child, always nervous and irritable, had convulsions in infancy. Six years ago fell from a bridge, striking forehead. Signs of shock after it. "Shoulders drew up and spine got crooked." Delirious after fall, and very nervous since. Said to have lateral curvature, but it was not detected. Three years ago eyes began to trouble him, with dim vision and pain. Much headache, irritable, surly, and heedless. Poor appetite, chronic diarrhœa. Palpitation. Passes much urine. Rheumatic fever a year ago. Muscles weak, pain in legs with numbness and prickling in hands and arms. Fell again last fall, striking head. Worse since then, and has had two attacks: in one unconscious, rigid, trembled and screamed; sleepy after it. Two attacks of aphonia. Left leg said to draw up at times. Very fat. Field of vision normal, *vos* 20-20, *vos* 20-100, astigmatism

of 4 D, *os*. Quite tender over spine, and more or less tender all over. Smell, taste, and hearing normal. Slight diminution of electrical sensibility on left. Knee-jerks only on re-enforcement. In June, 1888, reported to have had chorea, and after that to have had an increase of all his symptoms, with one or two more attacks.

IX. Chas. D., 12, s., school-boy. Mother consulted me in September, 1886, for an opinion in relation to a suit for damages. Not neurotic. Two years ago he fell down a coal-hole, striking head. Unconscious for a time, and delirious for several days. Scalp-wound, and question of depressed fracture. Headache and vertigo since; could not go up or down stairs safely, owing to vertigo. Violent headaches induced by any effort or excitement. Very forgetful, peevish, fretful, and sleeps poorly. Has had attacks of severe headache, with nausea, and "raving attacks," when he would call out various phrases referring to his accident, and would twist about, his limbs working. Exhausted after these. Sudden attacks of pallor and vertigo. Some diplopia and tinnitus. Capricious appetite; has not grown much or gained in flesh since accident. Slight furrow over right parietal, and cicatrix over occiput. Some spinal tenderness in upper dorsal region; jarring causes vertigo. Field of vision and tactile sensibility normal. Special senses unimpaired. No knee-jerks. Gradual improvement, but in December, 1887, was still subject to severe headache and vertigo on any exertion or excitement. No attacks since May, 1886.

X. Charles C., 61, w., machinist. June, 1887. No special taint. Eighteen months ago he was thrown from a wagon, and was unconscious for six hours and a half after it. No external injury or fracture. Hot-water bottles were put to his feet, burning them so badly that he was kept in bed for four months. On getting about, his shoulders and right leg began to feel heavy and his arms ached. His head has felt sore, and he has had sharp pains in it. Discouraged, low-spirited, and irritable, but mental power is not impaired. Short breath, poor appetite, constipation. Prickly aching and burning in the arms, which feel weak and heavy. The right leg feels numb and prickly, and both legs ache. He has pain and a hollow feeling in the back, which hinder his walking. Says he is growing worse. Marked myopic astigmatism. Field of vision normal. Fibrillary tremor of tongue. It hurts him in the lower dorsal region to bend his spine, but it is not tender. Some inco-ordination of the left arm, and a little tremor of the hands. Speech a little thick. Epigastric reflex present only on left. Triceps, radial, ulnar, and patellar reflexes exaggerated. Slight patellar clonus; front-tap contraction. March, 1888: Condition not improved. Complains greatly of his back, and of inability to use his arms well. Numbness of both legs. No inco-ordination of hand. Reflexes exaggerated. No consciousness of events immediately preceding accident. Was thrown from a carriage fifteen years ago, and after that had some stiffness of left arm, which recovered. A year before his last accident, however, this arm had been rather weak.

XI. Dennis B., 37, m., printer. Referred to me by Dr. Post, in August, 1885. In January,

¹² E. S. Boland, Symptoms following Injury to the Head and Back. Boston Med. and Surg. Journal, 10th Nov., 1887.

1885, was struck by shafting, the right side being most injured. Right instep and right little finger broken; right thigh and leg much bruised. Laid up until May. Two weeks ago tried to go to work on a hot day, worked an hour and a half, and had to go to bed. Memory began to fail after injury, and he has had constant, severe headache ever since. Has vertigo so badly that his wife is afraid to let him go out alone. Forgetful since his injury. Very restless at night. Much more irritable and excitable. Considerable diplopia. Slight palpitation and shortness of breath. Poor appetite, some vomiting. At times has to wait before he can pass water, and at times the stream stops. Cannot close right hand as well. Frequent and severe pain in right leg after using it, and constant numbness and prickling. Right leg weaker, somewhat wasted, and is easily fatigued. After his attempt to go to work, was in bed for a week; headache and vertigo much worse, felt dazed, and has been more or less confused; had constant nausea and vomiting for a week. Field of vision good, *rod* 20-20, *vos* 20-30, left disk paler. Some weakness of external recti, with nystagmus on excursion outwards. Other senses and tactile sensibility unimpaired. Arms strong, no inco-ordination, some tremor of hands. Right leg smaller than left, vastus internus does not react to faradism, lower leg muscles require a stronger current than on left. Nerve-trunks in right leg rather tender. Reflexes normal. About a year later the man died. There was no autopsy.

XII. Wm. M., 49, m., engineer. Consulted me in March, 1887. Gonorrhoea. Considerable tobacco, little alcohol. Struck by a stone from a blast twenty years ago, breaking right forearm and thigh, and cutting radial nerve in upper arm. Anchylosis of right elbow joint. Arm has been partly paralyzed since. Ever since accident has been nervous, "shattered." Sleep is very restless; feels unstrung. Any excitement or any considerable exertion uses him up, and makes him sweat profusely. Considerable vertigo. Easily put out of breath. Some "rheumatic" pain in legs. Cannot move right arm at shoulder much, or at elbow at all; can flex and spread wrist and fingers, but cannot extend them; supinates a little, pronates well. Arm two or three inches smaller round; muscles wasted, do not react to faradism. Diminished sensibility in distribution of radial nerve. Sensation, motion, and reflexes elsewhere normal. March, 1888: Condition much the same. The pain in the legs is of rather recent date, and is of a rheumatic character. He is able to work, but since his injury he has been of a nervous, unstable disposition. Before it he could stand anything; since, everything excites him very much, and makes him very nervous.

These last two cases are of further interest from the fact that Erichsen²² claims that when injury produces fracture of any bone, the nervous system is apt to escape from the effects of concussion, the violence of the shock expending itself in producing the fracture. These cases, as well as a good many others that have been reported, show at least that Erichsen's rule is not without exceptions.

These cases certainly present divers groups of symptoms which demand a little consideration.

The commonest among them point to some cerebral disturbance. Eight had headache or pain in the head, and eight had vertigo; ten had some psychical disturbance, nervousness, restlessness, irritability, inability to make prolonged effort, depression, anxiety, loss of memory, and, in at least one case (XI.), distinct mental impairment; two (VIII. and IX.) had some sort of convulsive seizure; one only (IX.) seemed to have been affected by any terror, and in him the effect was slight.

Motor disturbances were not uncommon. Seven patients had muscular weakness, which sometimes amounted to actual paralysis, although chiefly when there was neuritis. Several had tremor; two (V. and VI.) Romberg's symptom; and one (X.) inco-ordination. Several had muscular wasting, and four diminished electrical excitability, chiefly from neuritis. The knee-jerks were increased in three cases, diminished in three, and absent in one.

Sensory disturbances were less common. In only four cases was there poor vision, due generally to definite causes independent of the injury. In three cases the other special senses were impaired, generally on one side. Three patients had diplopia, and one (XI.) nystagmus. One (VII.) had monocular diplopia, sluggish pupils, and xanthopsia; the last symptom was noted in one of Oppenheim's cases. Contracture of the field of vision was found but once, but in a few instances the fields were not examined. Anæsthesia in varying degree was noted in seven cases, one, in two at least, to neuritis. In four of these seven cases, and in two others, there was paræsthesia. In no case, unless possibly in Case VIII. was the anæsthesia strictly unilateral—hemianæsthesia.

Digestive disturbances were occasionally seen, and in five cases there were vesical symptoms—signs of paresis of the bladder. Two men reported impotence.

Pain in the back was found in seven cases, and several others had pain in the side, limbs, or abdomen. The pain in the back was usually associated with tenderness over the spinal muscles and was increased on motion. In a few instances it was associated with tenderness over the spinous processes.

What is the cause of such an array of symptoms? Is there "only hysteria, nothing but hysteria"? Is there merely a strain of the muscles of the back, with neurasthenia added to it? Is there merely a functional derangement, or is there some structural change in the nervous system? Of course it is not possible to find any one diagnosis to fit so many different cases, but these cases and their attendant symptoms may furnish us with some data to aid in considering the whole subject of so-called "concussion of the spine."

(To be continued.)

A contemporary presents a study of the intellectual men of the British Islands by Dr. Boyle, which gives some interesting figures. Applying the same standards, he finds that one Englishman in thirty-one thousand rises to distinction; one Scotchman in twenty-three thousand; and one Irishman in forty-nine thousand. Edinburgh has three times as many famous men in proportion to population as London. As a whole Scotland holds the palm of intellect, while Ireland as a whole is lowest.

²² J. E. Erichsen, *op. cit.*, p. 73.

A CASE OF RUPTURE OF THE URETHRA. WITH SOME REMARKS UPON THE SYMPTOMS AND TREATMENT OF THAT INJURY.

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Ruptures of the pendulous portions of the urethra are rare, are not apt to be extensive, nor, although troublesome in regard to treatment and cure, are they usually dangerous. In the cases which I have seen the rupture has occurred during sexual intercourse, and has been accompanied by immediate pain and swelling followed by ecchymotic discoloration of the entire pendulous portion of the penis and by more or less severe hæmorrhage from the meatus. They have all done well under the use of evaporating lotions and rest followed by gentle catheterization after the blood has disappeared and the swelling subsided. Ruptures affecting the deeper portions of the urethra are, however, much more serious. Excluding those which result from instrumental violence, that is, false passages, which I do not propose to consider in this article, they are caused almost invariably by some form of traumatism applied to the urethra, most of the examples which have come under my own notice having been the result of falls astride of hard or resistant bodies. The mechanism of rupture of the urethra has been variously explained. Franc, Velpeau, and Poncet have attributed the urethral laceration to the crushing of the membranous portion of the urethra between the offending body and the lower border of the pubic arch. If the accident occurred with the patient in a leaning position, the body directed forward, they believed that the posterior part of the spongy urethra could be crushed against the pubis; and think that when the force which produces the injury acts in the lateral direction the urethra is more probably pressed against the upper portion of the descending pubic ramus. Ollier refers lacerations of the membranous urethra to the pressure of the canal against the sharp edges of the sub-pubic ligament, which in his experiments seemed to have divided the upper wall of the urethra. Terrillon believes that when the body which is fallen upon is narrow the urethra is crushed against the ramus of the pubes, and thinks the injury is likely to be found about the region of the bulb; and when the fall is upon a broader substance the urethra is crushed against the anterior surface or inferior edge of the pubes and the lesion is found more anteriorly. Guyon says that in this accident, whether the cause is a fall or a blow, the mechanism is the same: the urethra and the soft parts which immediately surround it are pressed and crushed against the resisting pubic symphysis, whilst the superficial tissues, more supple and more elastic, escape or are scarcely involved. He believes, as does Terrillon, that such ruptures are frequently only partial, and that they are commonly situated in the spongy part of the urethra, an inch or less in front of the anterior layer of the triangular ligament, and in this opinion he is supported by Iversen, who has recently analyzed twenty-nine cases of this accident. Duplay thinks that in a certain proportion of cases the urethra is ruptured by a temporary dislocation of the symphysis

pubis, the soft bones springing back into their proper relation after the crushing force is removed and leaving no trace of the accident except the urethral lesion. He thinks that this ("rupture by traction") may also occur in case of fracture of the pelvis with a displacement of a portion of the pubic arch; and it is of course evident that the urethral wall could be wounded directly by a fragment of bone after such a fracture.

In attempting to diagnose a rupture of the urethra we must depend chiefly upon: 1, the history of the accident; 2, the phenomena connected with urination, which is usually difficult or impossible; 3, the appearance of blood either at the meatus or beneath the skin or in both situations; 4, the development of a swelling due to extravasated urine.

As in the majority of cases all these symptoms are present, the diagnosis in general terms of a rupture of the urethra can hardly be said to be difficult, but in exceptional cases, where one or more are absent, it may be a matter of great uncertainty. So, too, the recognition of the precise seat of the rupture may be comparatively easy if the case is a simple and an uncomplicated one, or, under some circumstances, may be almost impossible. The following case will serve to illustrate this point:—

A laboring man, aged twenty-five years, was admitted to the University Hospital on the morning of May 9th, 1888, with the following history. The previous day he had placed his foot accidentally upon one edge of an iron girder covering a man-hole in the deck of a vessel, tilting it into an upright position and alighting astride of it. The accident occurred about seven A. M. About two P. M. he endeavored to urinate for the first time, and found that it was impossible to do so. Before making the attempt he noticed and wiped away a small quantity of clotted blood from the neighborhood of the meatus. He repeated the effort at short intervals during the afternoon, suffering increasing pain and distress, and toward evening noticed swelling of the scrotum, which rapidly increased. He applied to a physician for relief, who gave him some powders, but made no attempt at instrumental interference. He suffered greatly during the night, and early the following morning came to the hospital. At this time the scrotum was swollen, tense, ecchymotic, and oedematous, the upper portion of the right thigh was similarly affected, and the left thigh to a very slight extent; there were perineal swelling and discoloration. He had absolute retention of urine, and was at this time unable to pass a drop. Catheterism was performed with some little difficulty by the resident physician, who withdrew thirty-six ounces of clear urine and left a soft catheter in the bladder, and by my directions made free incisions in the scrotal tissue to relieve tension. I saw him about three hours later, and found him in a condition of shock, with evidence of continued extravasation of urine. I proceeded at once to operate. First having him etherized and placed in the lithotomy position, I made a free incision in the median line of the perineum and sought for the laceration in the neighborhood of the bulb, where, on account of the swelling in the scrotum, I expected to find it. I laid open the successive planes of tissue, separated

the accelerator urinae muscles, and exposed the urethra for the distance of an inch or two. As I failed in this way to recognize the site of the lesion, I placed my finger posterior to the bulb and had the anterior part of the urethra injected with warm water. The urethra in front of my finger become tense and distended with the liquid, showing that there was no outlet in the canal anterior to the triangular ligament, and I therefore conducted my search further backward. After considerable difficulty I found, situated in the left lateral aspect of the membranous urethra, and therefore between the two layers of the triangular ligament, a small rent through which with my finger nail I could touch the edge of a metallic sound which I had passed into the bladder. On still further examining the parts I found a laceration of the anterior portion of the triangular ligament itself, situated to the right of the median line, through which the probe passed in the direction of the urethral laceration. To the left of the latter, and extending up towards the apex of the prostate, was a cavity which would receive the tip of the little finger, and which contained a moderate quantity of blood clot. I cleaned this out, irrigated the whole wound, placed a rubber drainage tube with its upper end in the cavity at the side of the laceration, passed a soft catheter into the bladder, and tied it into position with tapes, dressed the wound with iodoform, and filled it loosely with sublimate cotton. I then applied a T bandage, and, as the patient had considerable shock, gave him a hypodermic of whiskey and digitalis and had him covered with hot blankets, and a hot poultice applied to the whole abdomen. He soon reacted and recovered rapidly and uninterruptedly.

In this case there could be from the beginning no question as to the character of the accident. The appearance of blood at the meatus, the retention of urine, the ecchymosis and extravasation, when taken in connection with the severe accident, clearly pointed to a urethral laceration, but the exact seat and character and extent of that laceration were not so readily determined. It was perhaps safe to assume, on the one hand, that it was not of the character described by Duplay as "interstitial rupture," in which the spongy tissue alone is involved while the mucous membrane and exterior fibrous envelope escape injury, nor of the variety in which the mucous membrane and sub-mucous tissue only are lacerated. While these injuries would account for the retention of urine, they would fail to explain the extravasation which occurred within ten or twelve hours of the accident, or the seat and extent of the ecchymosis. On the other hand, the fact that catheterization was possible with no very marked difficulty, would seem to show that the case was not one of complete rupture of the urethra, with the separation of the torn ends which usually occurs in that accident. The interval which elapsed between the injury and the signs of extravasation was also greater than is usual after cases of complete rupture. For these reasons it seemed probable that I had to do with a case of laceration of a portion of the urethral wall of not very great extent. The interesting question as to the seat of the laceration still remained. The anatomical peculiarities of the part explain the

usual course of urinary extravasation. The urethra may, for example, be divided into four regions. In all that part from the meatus to the scrotal curve, extravasation is accompanied by a swelling and discoloration of the penis, greatest in the immediate neighborhood of the injury.

In the region included between the attachment of the scrotum and the anterior part of the bulb, the course of extravasated blood or urine is governed by the attachments of the deep layer of the superficial fascia or fascia of Colles. This is attached to the sides of the pubic and ischiatic rami, and behind, after dipping over the edge of the transverse perineal muscles, it is attached to the base of the triangular ligament, becoming continuous at the posterior edge of that ligament with the pelvic fascia, where it blends with the posterior layer of the triangular ligament. This fascia of Colles is continuous with the dartos tissue of the scrotum, and extends upwards to the abdomen, being attached in the middle line to the symphysis and on the outer side to the fascia lata, just beyond Poupart's ligament, leaving a space between the symphysis and the spine of the pubes, to which it is not firmly fixed; it then becomes continuous with the deep layer of the superficial fascia of the abdomen. Extravasation of urine occurring through laceration in the bulbous region of the urethra will first follow the space inclosed by this fascia in front and below to the anterior layer of the triangular ligament posteriorly, and, as it cannot reach the ischio-rectal space on account of the attachment of the fascia to the base of the ligament, and cannot reach the thighs on account of the insertion of the fascia into the ischio-pubic line, it is directed into the scrotal tissues, and thence up between the pubic spine and symphysis until it reaches the abdomen. I have seen cases in which, from neglect to provide an outlet for such effusions, not only the entire scrotum, but the whole of the soft parts of the lower portion of the hypogastrium had sloughed away; and such cases have frequently been recorded. If the injury affect the membranous urethra alone, the surrounding structures not being involved in the laceration, the extravasated urine would be confined to the region included between the layers of the triangular ligament, and would only gain access to other parts after suppuration and sloughing had given it an outlet.

The consecutive symptoms would then depend upon the portion of the aponurotic wall which first gave way.

If the injury is situated behind the posterior layer of the triangular ligament, *i. e.*, in the prostatic urethra, the urine may either follow the course of the rectum, making its appearance in the anal perineum, or, as it is only separated from the pelvis by the thin pelvic fascia, it may make its way through the latter near the pubo-prostatic ligament, where it is especially weak, and may spread rapidly through the subperitoneal connective tissue. According to Iversen, the external swelling is usually absent, and the above occurrences are to be suspected from the severity of the symptoms. In the case just described, it is evident that the conditions which were found were attributable to no single one of these four typical forms of laceration, as we had perineal swelling, extravasation

upon the thigh, and scrotal and abdominal extravasation coexisting. After the dissection the explanation became evident. The rent was a small one, and no large amount of blood was effused to cause immediate pain or uneasiness; no marked symptoms were produced at all, until, during the first attempt at urination, a portion of the urine escaped into the cellular tissue to the left of and beneath the membranous urethra. As repeated attempts were made, this found for itself a way into the perineum, passing laterally below the attachments of the fascia of Colles and through the rent in the triangular ligament, a portion reaching the right thigh, and a still smaller quantity the left thigh, the greater portion distending the scrotum and mounting upwards to the abdomen. The fact that the tear in the triangular ligament and the perineal fascia was on the right side, explains the greater degree of extravasation in the upper portion of the thigh of that side.

The important question of treatment in these cases may be simplified by adopting a classification similar to that employed by Guyon and Duplay, which is based upon symptoms rather than upon the anatomical seat of the injury. All cases may be divided into three classes, mild, moderate, and grave. In mild cases, *i. e.*, in those where after such an injury there is an appearance of blood at the meatus, with difficult urination or with retention, but with no evidence of extravasation, and no general alarming symptoms, and in which catheterization is easy, the surgeon may be content with regular evacuation of the bladder, by means of a soft instrument, well greased with carbolized oil, and with prescribing absolute rest, the patient being carefully watched for the onset of fever, or the appearance of local swelling. In cases of a more severe type, in which, in addition to urethrorrhagia and retention of urine, there are evidences of extravasation, and in which catheterism, though difficult, is possible, it is wisest to leave a full-sized catheter in the bladder, and at the same time freely to lay open the perineum and scrotal tissues, or any which have been involved in the extravasation. In cases of greater gravity, in which catheterism is impossible, careful perineal section should at once be made, the rent in the urethra sought for, and a catheter passed through it into the bladder. This is sometimes one of the most difficult procedures in operative surgery, particularly if it has been delayed until inflammatory changes, or local gangrene, have altered the appearance and relations of the parts involved. If persevering and careful search fails to reveal the proximal end of the torn urethra, I believe that the supra-pubic cystotomy, for the purpose of retrograde catheterization, is justifiable, the anterior urethra being almost always discoverable. Except as to the latter point, surgeons, as a rule, are agreed upon the above-described methods of treatment, and a number of them, including Iversen, endorse the propriety of the supra-pubic operation in such cases. The case above described belongs to the second class, or those of moderate gravity, and I know of no point in the treatment which would be considered open to reasonable discussion. It may be said that as the introduction of the catheter was effected with comparative ease, it would have been better to

empty the bladder at periodical intervals, rather than run the risk of continued extravasation by the side of the instrument left *in situ*. Birkett and others have shown, however, and the experience is one familiar to every practical surgeon, that while catheterism at a given time after any injury to the urethra, whether accidental or operative, may be easy, the lapse of a few hours may render it difficult or impossible. This would at once transfer the case to the third class, and would greatly reduce the patient's chance of recovery. In cases of complete rupture, after the introduction of the catheter, I should certainly be inclined to follow the course recommended by Erasme, who details the following indications as undoubtedly existing in such cases: 1st, to open a large passage for the accumulating fluids; 2nd, to keep up a free flow of urine; 3rd, to encourage rapid union of the two ends of the urethra and the walls of the cavity formed by the extravasation into the perineum; 4th, to prevent the formation of a cicatricial stricture of the urethra. He briefly reviews the different methods which have been recommended: supra-pubic aspiration (Lefort, Molliere) is palliative, and meets none of the indications; external urethrotomy (Guyon and others) does not provide for prompt union of the canal, and does not prevent consecutive contraction. Antiseptic measures carried out by allowing an elastic catheter to remain in the perineal wound, which is tamponed, or by suturing its borders produce more rapid union, but are likewise followed by urethral coarctation. The stitching of the proximal end of the urethra into the wound, and catheterizing only after healthy granulations have formed, while reducing risks to the life of the patient, is followed by the same results.

Erasme concludes that immediate union of the two ends of the torn urethra is the result to be aimed at; quotes the results obtained by Kaufmann, of Zurich, in experiments on dogs, which were very successful, and details a case of his own in which, after a fall upon a cask, a man aged thirty-eight years had a rupture of the perineal urethra. The two ends, when discovered by dissection, were separated from a third to half an inch. A large English catheter was introduced, and the two ends of the urethra brought well together with cat-gut stitches inserted so as not to include the mucous membrane. The transverse perineal muscles and the others which were divided were then brought together by sutures, as well as the more superficial tissues. The patient had no fever; almost no urine passed by the wound (not a drop after five days); in about seventeen days the wound was entirely healed; in three weeks a sound went easily into the bladder, no obstruction being felt, and the patient was discharged, to report for future examination.

He prefers this method of suturing to that recommended by Kaufmann, who placed his stitches first in the mucous membrane, tying them in the interior of the canal. He thinks early operations through tissues not yet inflamed or infected far preferable to those performed later; gives the following statistics of mortality: early perineal incisions, 8.79 per cent.; hypogastric aspiration, 19.04 per cent.; late perineal incision, 20 per cent.; and hopes that

early suturing will show still more favorable results.

On the evening of the same day, May 9th, a case was admitted to the German Hospital, where I was also on duty, with the following history: The patient, a man aged forty years, was caught between the bumpers of two freight cars, which squeezed him severely, pressing upon the outer surface of the crest of the ilia, the soft parts below them, and the great trochanters; these regions on both sides being considerably bruised and abraded. He immediately had great pain, which he referred to the body of the pubes on the right side and behind it. After his admission to the hospital distinct crepitus was found. When brought in he was in a condition of severe shock, had a swollen, tense, and tender abdomen, and was unable to void his urine. An English catheter was introduced with much difficulty, and an ounce and a half of bloody urine was withdrawn, and I was telephoned to for instructions. I directed that the man be allowed to remain without catheterism for three hours, during which time hot poultices were to be applied to the abdomen and the general treatment of shock instituted. At the end of that period catheterism showed that urine to the extent of four ounces had accumulated in the bladder and was slightly less bloody. His general condition had somewhat improved. As each introduction of the catheter had been followed by increased bleeding, the blood appearing at the meatus, I had a catheter left in the bladder continuously. There was no perineal or scrotal swelling.

The question of diagnosis at this time lay between a rupture of the bladder and a laceration of some portion of the urethra. I discarded the former hypothesis on account of the amount of urine which the bladder would retain, the disappearance of the blood from it after the catheter was tied in, the absence of progressive shock or peritonitis or pelvic cellulitis, and the appearance of blood at the meatus. I believed the case to be one of laceration of the urethra, resulting either from direct injury by a fragment of broken bone, or from the stretching and tearing of the urethra on account of the displacement of the pubis at the time of the injury, the fragment dragging upon the sub-pubic and triangular ligaments and by these means tearing the urethral wall. This diagnosis was apparently confirmed by the slow appearance of a discoloration which first affected the scrotum, then the lower portion of the abdomen above the pubis, and finally the upper part of the thighs, stopping a little below Poupart's ligament and evidently outlined by the attachment of Colles' fascia. This would on anatomical grounds indicate that the site of the injury was somewhere in the bulbous portion of the urethra. This view was sustained by the appearance of blood at the end of the penis. I believed the ecchymosis to be referable to the urethral lesion rather than to the fracture on account of its course. If it had been the usual effusion of blood due to fracture, it would probably have appeared first in the neighborhood of the broken bone and would not have begun in the scrotum and gradually ascended. The case was of course complicated by the fracture, and so far as the urethral lesion was concerned may be said to belong to class first, or the mild cases in which

catheterism and rest, or at the most the continued retention of the catheter, meet all the immediate indications. The patient's temporary escape from extravasation was probably due to the fact that, on account of his graver injury, he had made no effort to urinate until his admission to the hospital, when it was discovered that he was unable to empty his bladder and catheterization was immediately resorted to. The ecchymosis showed that the rupture, although largely interstitial or submucous, was at the same time complete, blood escaping into the urethra and also around it.

This patient steadily improved for a time; all blood disappeared from his urine; he retained several ounces of urine; his belly became flat and soft, and his pulse and temperature normal. Deceived by these occurrences, and fearing cystitis from catheterism, I ordered the latter stopped. In forty-eight hours he became worse, in a day or two more showed increased swelling with crepitation at the groin. An opening which I made readily penetrated above the broken pubes into the pelvic cavity and evacuated a large quantity of pus and urine. It was evident then that there had been a small wound or tear in the bladder, the edges of which had adhered and were undergoing repair so long as the bladder was kept empty by catheterism; but which separated and permitted extravasation to occur when the urine was allowed to accumulate. The patient's general condition contraindicated operation, and he died in a few days in spite of careful and thorough drainage and frequent antiseptic irrigation. An autopsy revealed a small rent in the bladder and another in the bulbous part of the urethra; an immediate laparotomy, performed within a few hours of the accident, would possibly have saved this patient; but on reviewing the symptoms I cannot think that they justified this procedure. The peculiar course of the case undoubtedly arose from the circumstances that the rent in the bladder was a very small one; that its edges lay in such close apposition; and that there was also a partial rupture of the bulbous urethra,—a group of conditions whose coexistence must be rare. The results of laparotomy for intraperitoneal rupture of the bladder, as shown in the cases of MacCormac, Holmes, Halstrom, Grant, Blum, and others, is in the highest degree encouraging,—seven out of sixteen cases having recovered; while in eight of the nine fatal cases the average time between the operation and the injury was twenty-eight hours, and in the ninth case the vesical sutures were faulty. In Blum's case recovery ensued though the operation did not take place until forty hours after the rupture. The *Medical News* makes the editorial suggestion that, in view of the frequent uncertainty when the quantity and character of the urine are depended upon as the chief diagnostic signs, it would be well to add to our present tests for the occurrence of vesical ruptures the gentle introduction of hydrogen gas into the viscus, noting whether it distended merely the bladder itself, went into the surrounding tissues producing emphysema (extra-peritoneal rupture) or distended the general peritoneal cavity (intra-peritoneal rupture). The test seems to me a practical one, and in the above case might have established the diagnosis in time to permit of successful operation.

FÆCAL ACCUMULATION.

BY ELBRIDGE G. CUTLER, M. D.

1. A young woman, twenty-two years of age, had pleurisy with effusion about two years ago; some three quarts of serum were removed by tapping. The lung appears never to have wholly expanded, and she has suffered from cough and expectoration ever since. Of late she has had fever, loss of flesh and strength, loss of appetite, and has failed considerably. For the past month she has had a diarrhœa which has resisted all remedies used to check it, and it was for this that she sought advice. The movements were described as frequent, involuntary, dark, watery, having a bad odor, and accompanied by considerable slime. It was learned that she had been using a morphia suppository twice a day for a long time. Physical examination of the chest showed an advanced phthisis, and the sputa contained bacilli. The abdomen was full and rather prominent on the left: it was somewhat tender on palpation in the same locality, and a number of small lumps could be felt inside, the size of a hen's egg or larger; at the same time there was a general fullness of the pelvis. The humps were arranged in a row in the region of the descending colon, and were considered to be perhaps fecal masses, and it was thought that the sigmoid flexure was probably packed. Rectal examination confirmed this view. She was treated by enemata, and after several days of patient washing she was relieved of a large number of hardened humps and soft feces, and the bowels became natural. The symptoms for which she had summoned aid were ended; subsequent care has kept her free from trouble thus far.

2. Not very long since a man about thirty-five presented himself, saying he suffered considerable pain in the right inguinal region, which kept him from walking erect, and prevented sleep. He had suffered several days, and had been somewhat constipated for quite a while. An examination of the abdomen revealed a somewhat prominent belly, with percussion resonance everywhere except in the right inguinal region, in an oval space three inches in diameter. Tenderness was a marked feature, and was so great that the percussion had to be very gentle. Palpation showed the tumor to be somewhat larger than was believed on percussion; its boundaries were sharply defined and regular, and it was thought to be confined to the region of the cæcum. The temperature was 101½° Fahr., pulse 90. It was believed that he was suffering from typhlitis, and he was therefore sent to bed, and a few large oily enemata were cautiously given, which soon brought away a considerable mass of feces, and caused the tumor to diminish very much in size, and abolished the pain. A few days later he felt so much better that he got up and went out, but within a month returned to me in the same condition as at first. A repetition of the treatment, and subsequent care in following out directions as to the treatment of the bowels, brought him to his natural condition of health. I have since seen him twice walking on the street, when he has assured me that he has remained perfectly well.

A very similar case I saw last winter in the outpatient department of the Massachusetts General Hospital.

3. Mrs. S., about forty years old, had been under treatment for some uterine difficulty, and having been relieved of that, she was referred to me as possibly having typhoid fever. She complained of a sensation of great heat, pain in the head, sweating, anorexia, chills, extreme feebleness, and feeling of faintness on attempting to sit up. The pulse was rapid and feeble, temperature 101½°. The face was flushed, the eyes were dull, appearance despondent. Under simple treatment she was nearly well in a few days, when some paroxysms of pain in the left hypochondriac region led me to examine the abdomen very carefully. I then found some hard round masses on the left side, apparently inside the intestine. To bring these away an enema of soap-suds, castor oil, and vinegar was ordered. This was given by a midwife. The patient was much exhausted by the process, and only a little hardened feces was brought away. Paroxysmal pain of great intensity followed, and after several times repeating the enema, evacuation of all the fecal masses followed, with complete relief. The masses were half the size of the fist, and as "hard as rocks," as the patient described them. Seen by me they certainly were very hard, and seemed to consist of masses of dried feces.

In looking over a considerable number of reported cases, I find that the affection is met with far more frequently in women than in men. The causes of the fecal accumulation in these cases were constipation (in a very large proportion), pregnancy, dilatation and pouching of the rectum or colon, vaginal rectocele, presence of an ulcer or fissure causing pain, hæmorrhoids, congenital smallness of the anus (Matthews Duncan reports the case of a valve-like obstruction about one inch within the external orifice of the anus), cicatricial contraction following too thorough operation for piles, rectal scybalum, tumors inside and outside the bowel, bands outside, cicatricial contraction outside, malignant, lupus, syphilitic, catarrhal contractions, hernia, pessary in the vagina, foreign bodies of all sorts in the colon or rectum.

The diagnosis of fecal accumulation is frequently very difficult. If a tumor exists it may be and often is mistaken for anything but its true character. The tumor may be either hard and consistent, or, to a certain extent, soft, with a smooth even surface capable of being easily indented. When hard it is often irregular, elongated, and may consist of several balls, such as were found in cases 1 and 3.

The presence of an increased amount of indican in the urine is available for diagnosis in certain cases only, and as the increase may be found in stasis of the small intestine, due to any cause, as well as in cachectic conditions, and as tumor without stasis may occur, its field of usefulness is very limited.

The tumor may sometimes be located by the cautious slow injection of air into the gut by means of a Davidson's syringe attached to an English catheter or rectal tube, passed several inches up.

The effect of high enemata is probably the best

¹ Read October 8th, 1888, before the Boston Society for Medical Improvement.

means of arriving at a diagnosis, and it is rarely the case that they cannot be used.

The fecal tumor is by no means constant in these accumulations, for a very considerable amount of matter may be present in the colon without a defined tumor being formed.

Thus Blakiston² reports a case in a short, fat man, where no tumor could be felt, but a general hardness existed, and where appropriate treatment gave the man an "enormous evacuation." I have met with the same thing in a patient who was habitually constipated. There was merely an unusual density of the abdomen to the touch. After the first rather dry movement was secured, a mass of feces, both hard and soft, was passed at once, which more than half-filled a large tin slop pail, much to my own surprise and that of the patient.

Fæcal tumors appear to be most common in the sigmoid flexure, at the apex of the loop, then in the descending colon and about the flexures, and least frequent in the ascending colon. The cæcum, said to be the seat of temporary accumulation³ more usually, nevertheless sometimes has the chronic tumor. I found the case recorded of a girl of fourteen, who had had enlargement of the right side of the abdomen since the age of two, and the tumor, which was finally found to be fæcal, was in this region.⁴

Another case was that of a woman in whom the tumor was found some time after confinement in the right iliac region.⁵

The changes in position which are frequently observed may depend on progress of the mass along the colon, but more usually, I fancy, are due to changes in the position of the coil of intestine in which it lies. Such changes of position are more apt to be observed where the mass is in the loop of the sigmoid flexure or in the transverse colon. The changes in shape and size may be either real, by addition to its bulk, or apparent from the changes in position above mentioned, or from a subsidence of gas in its immediate neighborhood allowing the mass to be reached by palpation. The mass has also been seen to soften. The most irregular masses are those found in the descending colon or sigmoid flexure, and appear to be due to moulding in the sacculi of the gut. Ulcerations of the mucous membrane, which sometimes occur, have proved serious complications, but have only been superficial in the cases which I have seen. These ulcerations are not necessarily accompanied by tenderness; in fact, in one case reported, where ulceration was very marked and death occurred, tenderness was not felt.⁶

The diarrhoea which is frequently mentioned as alternating with constipation appears to be due to catarrh set up around and above the accumulation, and is no evidence of ulceration, or it may be due to liquid from above finding its way through channels or around the sides of the mass.

Treves⁷ made a careful and systematic examination of the abdomen in one hundred fresh bodies, paying special attention to the viscera in those who had been the subjects of chronic constipation. In

a large proportion of these there were no gross changes other than those incident to simple distension of the colon. In some there was a narrowing of the large intestine at the splenic, and less frequently at the hepatic, flexures, due to local peritonitis. This inflammation, where it had not produced some degree of stenosis, had rendered the bowel fixed and had evidently hampered its movements. The parts of the larger bowel that were most conspicuously involved were the cæcum, the sigmoid flexure, and the transverse colon. The cæcum was large, sacculated, lying free in the peritoneal cavity, and often hanging as a pendulous bag in the pelvis. In rarer instances it had been distorted by adhesions and even somewhat bent upon itself. The most frequent deviations from the normal were in the sigmoid flexure. The flexure was usually longer than the normal standard, and it was very common to find that adhesions bound down that bend in the colon at which the flexure and the descending colon meet. It was also common to find that a contracting peritonitis had involved the root of the sigmoid meso-colon, and had led to a considerable approximation of the ends of the loop. In other instances, chiefly as the result of peritonitis of the meso-colon, the "omega" loop had become considerably dilated. It is obvious that these various deformities would greatly impede the progress of feces along the bowel. The transverse colon, Treves states to average twenty inches in length in the adult, the extremes being twelve and thirty inches respectively. An elongation of this part of the bowel is a frequent feature in chronic constipation. In certain cases the central portion of the transverse colon descended towards the pelvis, and the colic arch had assumed the outline of the letter V. The apex of this V-shaped loop may be found at the symphysis pubis, or even in the pelvis, and in one instance it had formed an attachment to the bladder.

The chief complication which is to be feared, happily very rare, is acute obstruction which may occur from blocking up of the channel or from twisting or flexion of the tumor.

Fæcal poisoning is another complication which at times may prove a serious condition. This was fully described by Dr. R. M. Hodges in a paper before this society last winter. Abscess is yet another, and is apparently due to the ulceration set up around the mass.

These accumulations are to be treated locally, and it is a mistake usually to give cathartics at first. Enemata are doubtless the most efficient means known of dealing with fecal accumulations. The injections should be copious, and should be given where possible in the knee-head, knee-elbow, or lateral position. The best material is water at a temperature of about 100° Fahr., though there is no objection to soap and water, or turpentine and water, or oil. It is advisable to dispense with the use of an anæsthetic, unless the mass is situated low down in the colon, within easy reach from the outside, as the patient's sensations are often of great service as a measure of the force to be used, or the amount injected, and the presence of deep ulcerations cannot frequently be excluded. The fluid, enough to fill the colon, should be slowly introduced and be retained for some fifteen minutes, and the mass be

² Medical Times and Gazette, 1874, p. 46.

³ Treves, Lancet, 1885, vol. ii. p. 1135.

⁴ Heston, Lancet, 1871, vol. i. p. 647.

⁵ Lancet, 1874.

⁶ Times and Gazette, 1872, vol. i. p. 303.

⁷ Lancet, 1885, vol. ii. p. 1181.

kneaded gently. The best instrument, according to Treves, is the inflator designed by Mr. Lunt,⁸ of Manchester, England, as it allows of very large injections without permitting the escape of any fluid from the anus. By its use such enemata can be given without assistance. I have used the ordinary syringe stem with a rubber shield shaped like a doughnut, the central hole being quite small.

Where the seat of the tumor is the cæcum, and accompanied by tenderness and fever, the procedure advised by Harley seems to be the best. After a fair amount of fecal matter has been brought away by the enemata, given every six or twelve hours, he causes the patient to take half an ounce of castor oil, with two teaspoonfuls of brandy, and eight or ten minims of laudanum or deodorized tincture of opium, and repeats the dose after each evacuation produced by the enemata. In this way two or three fecal motions are produced daily, to the great relief of the patient. The tumor decreases and becomes less tender daily, and in cases of ordinary severity the cæcum will be emptied in the course of one week, and the patient restored to convalescence. Where there is much pain, a hot flaxseed and mustard poultice should be kept applied to the abdomen. The subsequent treatment should be that of typhoid fever, and for one week or more after all pain and febrile disturbance have ceased there should be no solid food given. If the case is severe and protracted there is a tendency to reaccumulation in the cæcum. To avoid this an occasional dose of castor oil should be given, a compress worn with a flannel bandage over the region of the cæcum, and massage be made over the part. Strychnia in some tonic infusion may be given to promote tone in the weakened intestinal wall.

Where the accumulation is in the rectum, it is sometimes necessary to dig it out with the handle of a spoon or the fingers. A device described by Duke⁹ in the British Medical Journal would appear to be serviceable at times. It consists of a brass, nickel, or silver-plated speculum armed with a plug, which when pushed forward allows fluid to be injected into the gut through a hollow pipe at the side. He thus describes its use. The speculum is gently introduced, and when placed the plug is pushed up, which raises the cover and allows the fluid injected to penetrate the mass or accumulate above it as the case may be. The mass is thus either broken up or soaked and its removal facilitated. When all has passed which will, and still large, hard, lumps present, and form a ball valve which want of tone in the bowel and abdominal parietes does not allow of the patient being able to expel, he supports the abdomen with a tight roller, and introduces as large a cylindrical vaginal speculum as will pass through the sphincter, and breaks up through it what will not freely pass, by means of a spoon handle. This he thinks saves much pain and the frequent introduction of the fingers, which produces so much subsequent soreness and discomfort.

After the mass has been cleared away the case is resolved into treating the condition on which the accumulation has depended, if it be possible to make it out.

A CASE OF ULCERATIVE PERFORATION OF THE TRANSVERSE COLON: LAPAROTOMY TWELVE HOURS LATER: DEATH ON THE SEVENTH DAY FROM SEPTIC PERITONITIS CAUSED BY FECAL EXTRAVASATION.¹

BY MAURICE H. RICHARDSON, M. D.,
Visiting Surgeon, Massachusetts General Hospital.

THE following case, though resulting in death, illustrates the importance of early exploration in those cases of sudden, acute pain in the abdomen, accompanied by rapidly rising pulse, temperature, and respiration, in which the diagnosis has hitherto been made too frequently on the autopsy table. Although the case resulted fatally, the course of the disease was such as to convince me that under similar conditions an early operation may be brilliantly successful.

E. J. K., thirty-nine years old. Twelve years ago had typhoid fever. Since then comparatively well, though not robust. For past two years in better health than usual. *Never any trouble with the bowels*, the movements of which have always been regular and normal. Catamenia normal and painless.

September 10th, 1888. This morning was as well as usual. At nine o'clock was standing on a chair wiping windows about twenty minutes. In doing this did not strain herself at all. Soon after getting down from the chair had sudden sharp pain in the epigastrium, shifting in a few moments to the hypogastric and left iliac regions. Pain became very severe. Vomited once. She sent for a neighboring apothecary, who gave her an anodyne.

An hour or two later she was seen by Dr. Lena Ingraham, to whom I am indebted for the history of the patient, who, recognising the serious nature of the symptoms, sent the woman into the Massachusetts General Hospital, where she arrived late in the afternoon.

On entrance the following notes of her condition were made: "Fairly developed. Facial expression one of pain and anxiety. Decubitus on the left side, with knees drawn up. Pupils, not contracted. Tongue clean. Heart and lungs negative. Abdomen somewhat distended, tympanitic, and very tender in hypogastric and left iliac regions. Palpation negative on account of the abdominal resistance. Urine high, acid, 1022, with slight trace of albumen. Sediment considerable. Increase of leucocytes and vaginal epithelial cells. No casts. Has had a normal, painless movement of the bowels daily. Yesterday, the day before entrance, ate heartily of baked beans."²

Temperature, after three o'clock p. m. continued to rise steadily, as shown by the chart, till 10.30 p. m., just twelve hours after the first symptom of pain, when it had reached 104.2 F. The pulse had risen from 120 upon entrance to 140; the respiration from 39 to 45. I was called to see this woman at about eight o'clock in the evening by the medical house officer, under whose charge she was. The patient was in good condition, looked well, and, though in pain, the amount was not excessive, and the constitutional symptoms not alarming. I examined her very carefully, and was not able to come to any definite conclusion either as to diagnosis or treat-

¹ Lancet, vol. 1, 1883, p. 584.

² British Medical Journal, 1887, Dec. 21, p. 1390.

¹ Read before the Boston Society for Medical Improvement, Oct. 8, 1888.

² Mass. Hosp. Records.

ment. Vaginal examination was negative. I ordered hot applications to the abdomen (corrosive sublimate dressings), morphia, and hourly observations of pulse and temperature.

On my return to the hospital at ten o'clock I found that pulse and temperature had been rising steadily. The abdomen had become more distended, and some dullness had made its appearance in the flanks, which altered with a change of position.

This case then presented the following important points:—

Absence of all abdominal symptoms previous to onset of pain; better health than usual for previous two years, though never a robust woman; acute and sudden pain in abdomen after unusual exertion; steady rise in pulse and temperature; increasing distention of abdomen; other organs and symptoms negative.

I was not able to come to any definite conclusion in this case. Her condition suggested general peritonitis from rupture of an extra-uterine pregnancy, an inflamed tube, or of the gastro-intestinal tract. The last possibility was not seriously considered. Simple hæmorrhage was considered, but thought improbable from the rapid rise in temperature.

At half-past eleven the patient began to vomit. This symptom, in addition to the others, decided me to open the abdominal cavity at once.

An incision was first made in the median line half-way between the umbilicus and pubes, it seeming more probable that the trouble originated in the pelvis rather than in other abdominal organs.

The cut was carried rapidly to the peritoneum, and then with extreme care, to avoid injury to the intestine. Yet on going through the peritoneum there was a burst of gas and fecal matter which looked as if the bowel had been cut. I enlarged the cut and found the coils of small intestine covered with fecal matter, mainly beans, which she had eaten the day before. On washing out the cavity through the enlarged incision I found the stomach presenting well below the umbilicus. The omentum was adherent to the anterior abdominal wall, and between the layers of this I could follow the track of fecal matter to the transverse colon. In the anterior and upper aspect of the transverse colon there was an ulceration as large as a silver dollar. The edges were smooth and brittle. The perforation had been guarded against by adhesions between the anterior and posterior layers of the omentum for some time, and it was by breaking away of these adhesions that the fæces were finally extravasated into the abdominal cavity.

In making the search for the opening, the incision was carried up eight inches in the median line.

I next united the edges of the opening in the colon to the abdominal wound by means of silk sutures, making the artificial anus at the umbilicus. In carrying out this procedure I found it very difficult to bring the colon up into the wound, probably on account of old adhesions. A finger's length beyond the ulceration the colon was narrowed so as to prevent the passage of the left index finger. Nothing else abnormal was found.

There existed about the ulcerated area apparent adhesions of recent origin to the mesentery and stomach. The bowels generally were covered with a fibrinous exudation.

The abdominal cavity was thoroughly washed out with warm water in all directions.

A glass drainage tube of large size was left in the lower angle of the wound, and a rubber one in the bowel.

Patient came out of the ether well, and had a very comfortable night on the whole. The vomiting was quite frequent during the next day, but entirely ceased towards evening. During the next three days the condition steadily improved. She was able to retain what little was given by the mouth, and the constitutional symptoms were very encouraging.

On the fifth day she became restless, pulse and temperature began to rise slowly, nausea and vomiting came on, and septic peritonitis proved fatal on the seventh day.

Autopsy.—E. J. K.: Incision in abdominal wall eight inches long, united by stitches, excepting for fistulous opening into the intestine near to umbilicus.

The wound was united superficially over the upper half; but in lower half united for whole thickness of the abdominal wound. The coils of intestine unusually distended, united by soft fibrinous adhesions, and covered here and there by small opaque yellow masses resembling fibrin.

The pelvis contained about two ounces of puriform fluid, and there was a smaller amount in the general abdominal cavity.

The stomach, duodenum, omentum, and colon removed *en masse*.

Small intestine *in situ*, nothing unusual. Stomach and duodenum showed nothing abnormal.

A fistulous opening led into the transverse colon twelve inches from the cæcum, the size of a silver dollar.

The edges of the ulcer ragged and gangrenous, and partially detached from the abdominal wall.

Immediately above this fistulous opening was a small cavity the size of a fist (capacity five ounces) formed by a folding of the gastro-colic omentum, showing a perforation at the dependent part about the size of a 25-cent piece, and another one opening into the general abdominal cavity next to the perforation in the colon.

On laying the colon open a moderate stenosis, due to old cicatricial contraction, was found to exist, ten inches in length, beginning five inches above the cæcum, and extending three inches beyond the perforation in the colon, at which place the stenosis was greatest, but readily admitting the forefinger.

Kidneys and liver nothing remarkable.

Diagnosis—acute general peritonitis; chronic circumscribed peritonitis; old perforation of colon; stricture of colon.

This case is interesting and remarkable, not only from the rarity of the conditions that existed, and the early though unsuccessful effort at relief, but also from the fact that the washing out of the abdominal cavity, after distention with extravasated gas and fæces, was so complete and successful that no foreign material was found at the autopsy. The abdomen was perfectly clean except at the place where the second extravasation had taken place. This fact, with the favorable progression of the case for five days, makes it very probable that the woman would have recovered from the original

accident had nothing new developed. If nothing had given way at the point where the bowel was sutured to the abdominal wound, I believe that this woman would have recovered from an extravasation so great as to fill and distend every part of the peritoneal cavity with fecal material. It is surprising that there should have been so favorable a course for five days, and it is very encouraging to those of us who maintain that in grave cases of doubt an exploratory incision of the abdomen should be made at the earliest practicable moment.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M. D., SECRETARY.

MONDAY, October 8, 1888. DR. O. F. WADSWORTH, President, in the chair. DR. E. G. CUTLER read a paper on

FÆCAL ACCUMULATION.

DR. F. MINOT said, respecting the etiology of fecal accumulation, that many cases occur among females, especially elderly women, as one would expect from the sedentary life which they generally lead. But cases are not rare among young children. Many of these may be ascribed to the character of the nourishment which is now in vogue, consisting largely of malted food, with comparatively little refuse substance to excite peristaltic action. Very adhesive substances, such as oatmeal, are also apt to become moulded into balls by the action of the intestines, and obstruct the rectum. The diagnosis of such cases is sometimes obscure, since the irritation set up by the hard masses may give rise to a mucous discharge resembling diarrhoea. The same thing may occur after the use of opiates in acute diseases, as rheumatism, etc.

Dr. Minot had seen great relief, in cases of fecal accumulation, follow the use of the preparations of buckthorn, such as the fluid extract of cascara, given in small doses for a long time. He mentioned two cases which he had lately treated. Both the patients were women over seventy years old, who had long suffered from fecal accumulation, and who obtained complete and permanent relief from the extract. In each there were several dejections (sometimes as many as eight) daily, of a semi-solid consistence, without pain, continuing in one of the patients for several weeks, before the whole fecal mass was removed.

In another class of cases intestinal obstruction may be suspected, and the patient be energetically treated for it, when it does not exist. This is apt to occur in peritonitis which has been overlooked. In one instance which he had seen, a post-mortem examination showed that the intestinal canal contained nothing but a small quantity of fluid fecal matter.

DR. F. C. SHATTUCK spoke of the great importance of always keeping in mind fecal tumors whenever an abdominal tumor is found. He spoke of the danger of the use of cathartics in cases of fecal accumulation.

DR. M. H. RICHARDSON asked the reader if he

had found any cases recorded of perforation due to the use of cathartics. He was told that such a case had been reported.

DR. C. P. PUTNAM described an appliance which he had devised to prevent the escape of injections from the rectum, and at the same time to regulate the pressure. It consisted of an ordinary fountain syringe, to the end of the tube of which was attached a rubber bulb, like an atomizer bulb. A small nozzle was attached to this bulb. When the nozzle was inserted into the rectum, the bulb was pressed against the anus. The bulb being grasped in the hand, the amount of pressure could be determined and regulated with great ease.

Dr. Putnam said there were cases which would not be spoken of as constipation, in which there existed a retardation of fecal discharge. Such retardation may cause fecal poisoning.

DR. M. H. RICHARDSON said, referring to fecal accumulation, that he had never seen an operation performed for such a tumor, which had been mistaken for a new growth.

DR. JOHN HOMANS, 2d, advocated the use of ether and the placental forceps in certain cases of fecal accumulation, believing that it would save time and suffering. He referred to a case of a patient who suffered, for a long period, from pain which was supposed to be hysterical. An examination of the rectum showed fecal impaction. Ether and thorough emptying brought entire relief.

DR. F. C. SHATTUCK spoke of a case of enormous distention, in which he had passed the œsophageal tube to such a length that it seemed probable that it had reached the transverse colon.

DR. M. H. RICHARDSON referred to the shape of the rectum and the sigmoid flexure of the colon as determined by plaster casts. Such casts show why it is impossible or very difficult to introduce a tube to any great length.

DR. CUTLER said in answer to Dr. Minot, that he had seen fecal accumulation occur in children as the result of not finishing the stool, where the child, in its eagerness to get back to play, had not wholly emptied the rectum. He had had no experience in the introduction of the fingers into the rectum in children, except in one instance. His remarks as to subsequent soreness and discomfort from the use of the fingers or a spoon had referred to adults, and especially elderly people.

DR. SHATTUCK's criticism of the use of cathartics he believed to be proper. Treves happily expresses it as a waste of therapeutic ammunition to start thirty feet away to remove an accumulation by intestinal irritation, which could be more readily accomplished through a shorter route and safer method to the patient.

He had hoped somebody would speak of the use of the long tube. He had been unable to pass such a tube beyond the loop of the sigmoid flexure in the cadaver.

DR. PUTNAM's device for retaining the fluid seems to be the best proposed thus far.

In answer to Dr. Richardson, he said he always, as a rule, in a patient with abdominal tumor, began his examination with high enema before proceeding with the diagnosis.

In regard to the use of ether, as spoken of by Dr. Homans, it was in the use of high enema,

or where the mass was above the rectum, that he would advise against it. If the mass were in the rectum, he would use that or any method which seemed the easiest.

DR. M. H. RICHARDSON reported a case of

ULCERATIVE PERFORATION OF THE TRANSVERSE COLON: LAPAROTOMY; DEATH AT THE END OF SIX DAYS.

DR. PUTNAM asked if laparotomy was ever done a second time in cases which seem to be doing badly.

DR. RICHARDSON answered that it was, but that in this case it was impossible, as the unfavorable symptoms preceded death only by a short time.

DR. CUTLER asked if any cause for the ulceration was discovered.

DR. RICHARDSON said there was not, except that typhoid fever had previously existed.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.

W. H. TAYLOR, M. D., RECORDING SECRETARY.

Boston, October 3, 1888.

THE meeting was called to order at 12 M. Records of the last two meetings read and approved. Med. EXR. DRAPER, Chairman of the Standing Committee, presented the Society with bound volume I. of its Transactions.

DR. S. W. ABBOTT of the State Board of Health, read a paper entitled

SOME HISTORICAL AND STATISTICAL FACTS CONCERNING THE USE OF ARSENIC AS A POISON.

The paper was a thorough and exhaustive one, and closed with a strong argument in favor of greater restriction in the sale of the various forms of arsenic, and a suggestion that a prohibitory law would not embarrass the public to a great extent.

PROF. W. B. HILLS read a paper on

THE CHEMISTRY OF ARSENIC.

giving a complete statement of the medico-legal relations of the poison from a clinical standpoint, and bringing the subject up to the present date.

PROF. E. S. WOOD commended Dr. Hills's paper, and said that the subject of arsenical poisoning is a very important one, from the wide distribution of the poison, and the number of sources from which it may be obtained. Wall papers frequently contain large amounts: specimens have shown from 1½% to 5% by weight. Some of the glazed papers used in Kindergartens have yielded 5% to 6% by weight. Many vermin poisons are made of white arsenic mixed with some coloring matter, as charcoal or indigo. Fly papers contain large amounts of the poison in a very soluble form.

As to the question of accidental or intentional poisoning, the presumption of intentional poisoning is strong when death occurs rapidly, and large quantities of arsenic are found in the organs, and especially where solid arsenic is found in the stomach. Arsenic is rapidly diffused through the body after death, particularly where solutions have been taken. In any form of poisoning by arsenic the urine is of great value for rapid determination by chemical tests, as in some cases the stomach is thoroughly washed out, and gives no arsenic on ex-

amination, while the urine may show considerable amounts of arsenic.

The chemist is frequently able to indicate the source of the poison by preliminary examination, as, for instance, finding white arsenic in the stomach mixed with charcoal or indigo.

Putrefaction of the dead body is liable to be retarded in cases where death has occurred rapidly, and large amounts of arsenic are retained in the viscera. A ready test for a powder supposed to be arsenic may be made by throwing a quantity of it in a vessel of water. A certain amount of the powder will float if it be arsenic, and the floating will continue for many days. Strychnia will show the same peculiarity, but may be readily distinguished by its bitter taste.

MED. EXR. DRAPER inquired how long a time elapses before arsenic is eliminated from the body, and is not the brain important chemical material in poisoning by arsenic?

PROF. HILLS did not think that the brain was very important chemical material. Cases where the brain has contained large amounts of the poison were known to have taken very soluble forms for some time. In ordinary cases, of the solid viscera, the liver ranks first in importance, and the kidneys next.

PROF. WOOD has known of a case where arsenic was detected in the urine five minutes after being taken. In one case it was found for nineteen days, and not on the twenty-first. In the Alexander case, reported by Taylor, elimination was complete in sixteen days.

MED. EXR. GLEASON asks how generally (in the experience of members) undertakers embalm bodies?

PROF. DRAPER said that he had had little trouble from early embalming. He thought that a regulation controlling undertakers in this matter should become a law.

MED. EXR. GLEASON discusses the question of regulation of the sale of arsenical preparations by law, and thinks that the trades interests would strongly fight a prohibitory bill.

DR. ABBOTT considers the so-called embalming a sham, and thinks it should be done away with. In most cases the undertaker injects a fluid, of the nature of which he knows nothing, into cavities of the body regarding which he is equally ignorant. Most embalming fluids have, as their essential ingredient, sodium arsenite.

As to rapidity of death in suicidal cases, the shortest time in his collection of cases was six hours, and the longest six days, the average being eleven and a half hours.

PROF. DAVENPORT mentioned a case of arsenical poisoning, the origin of which was the dye in a red stripe of a window awning.

MED. EXR. HOITT mentioned a case of homicidal poisoning in which the ends of justice were defeated by the injection of embalming fluid by an undertaker.

PROF. DRAPER read a paper on the anatomical appearances resulting from arsenical poisoning. The paper was of great value as an exponent of the author's experience, as well as of the present knowledge of the subject.

PROF. HILLS inquired how frequently sub-endocardial extravasations occur.

PROF. DRAPER believed that they occurred as a rule.

MED. EXR. TOWER read a report of a case of homicide by white arsenic, with autopsy and chemical examination.

THE PRESIDENT announced the death of Drs. R. R. Clarke of Whitinsville, and Y. G. Hurd of Ipswich, members of this Society.

Voted to adjourn.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

W. E. HUGHES, M. D., RECORDER.

SEMI-ANNUAL conversational meeting, the President, F. P. HENRY, M. D., in the chair.

Abstract of the address delivered by W. T. COUNCILMAN, M. D., on

SOME FURTHER INVESTIGATIONS ON THE MALARIAL GERM OF LAVARAN.

This organism, first described by Lavan, has been met with in every case of malarial fever which the writer has met with. The organism is in high degree polymorphous, and ten tolerably distinct forms may be found in the blood. Some of these evidently represent different stages of development, and the connection between them is obvious. Others present such marked differences in form that no connection between them can be made out. Some of the forms are only found outside of the red corpuscles, and others are found free in the blood. The forms described are: 1. Non-pigmented small amoeba-like bodies inside the red corpuscles. 2. Pigmented bodies larger than No. 1, also in red corpuscles. 3. Pigmented bodies about the size of red corpuscles. 4. Segmenting forms of the No. 3 body. 5. Small hyaline bodies, which are formed by this segmentation. 6. A crescent-shaped body with pigment in the centre, the horns of the crescent being often connected by a fine line. 7. Round or oval bodies which differ from No. 6 in shape only. 8. A pigmented body provided with numerous long, actively moving flagellæ. 9. Actively moving free flagellæ, which are evidently derived from No. 8. 10. A pigmented body with an active undulatory movement of its periphery. The first five forms are found only in intermittent fever, No. 4 only being seen in the blood during the chill period, and its presence is invariably connected with the chill. Nos. 6 and 7 are found in cases of malarial cachexia. The most interesting forms, and about whose parasitic nature there can be no doubt, are the bodies Nos. 8 and 9. These are generally absent in blood taken from the finger, but they may be found in any type of the disease. They are the only forms of the organism whose presence in the blood is not associated with a special type of the disease. They were found, however, in fifteen out of the twenty cases in which the blood of the spleen was examined. Of these twenty cases, twelve were cases of malarial cachexia, and eight of intermittent fever. In the twelve they were found ten times, and in the eight cases of intermittent five times. From this it seems probable that Lavan was right in considering the flagellate organism the most important form of the parasite. The influence of quinine on the intracorpuscular forms of the para-

site is most marked. Doses of fifteen grs. t.i.d. for two days in succession were found sufficient to cause them to disappear. The effects of the quinine were not so apparent in the other forms. The crescents were apparently not diminished in number in one individual after he had taken forty-five grs. of quinine daily for seven days, and sixty grs. daily for four days.

DR. WM. OSLER said the thought which had struck him most forcibly in looking over this subject was the almost perfect unanimity which has prevailed among the different observers as to the appearance of these organisms. With the sole exception of the segmented form (No. 4) Lavan and the early observers had described them all. His own observations, since the communication he had presented to the Society last year, had been somewhat limited. He had, however, made a series of observations upon the blood of fishes and birds, since it had been stated that bodies resembling Nos. 1, 2, and 3 had been found in the blood of carp and some water-fowl. Prof. Baird had offered him facilities for this work at Wood's Holl, and had kindly furnished him with forty-five carp. He had failed to detect any such organisms in the blood of these. In the blood of a goose sent him from Ontario he had found one or two pigmented bodies. It had been stated by Dr. McCallum, who sent him the goose, that the bird had malaria. However, the bodies were not numerous, nor was the temperature of the goose elevated, nor so far as he could make out, had it chills. Dr. Councilman had not figured one body which is very peculiar indeed, namely, a solid body in the centre of a clear space. It stains like a micro-organism, varies in size, and, although the body itself does not change in form, yet there are sometimes changes in outline in the clear space surrounding it; they were somewhat abundant in one case only. One other point with regard to the clear bodies (No. 1): in five or six instances he had seen such bodies pass out from the corpuscles, remaining out and undergoing no further change of form. He was not altogether prepared to say what was the relationship of these bodies to the other bodies described. It has been claimed that similar changes can be obtained by special methods of treating the blood. The most important question is first to determine the relationship of the hyaline to the pigmented bodies, and the possibility that the hyaline may not be directly associated with them. He was convinced that the pigmented and non-pigmented bodies were merely different stages. He could fully confirm what Dr. Councilman said with regard to the crescents. They are most peculiar and interesting bodies, occurring in the chronic cases and in those in which there had been no chills. Three weeks ago he had lectured on a case as one of mild typhoid fever: it had lasted eight or ten days with constant fever, up in the evening, down in the morning, slight enlargement of the spleen, no spots. His resident examined the blood and found what he thought were crescents. The case got rapidly better, left the hospital, and returned in a few days with a distinct chill, with crescents in the blood and a well-marked remittent fever. The motile forms he had not seen nearly so frequently as Dr. Councilman; though he had not examined the blood from

the spleen they had been present in eight or ten cases. Nor had he seen free filaments nearly so often; when he wrote his paper he had not seen them at all. Since then he had watched the process of separation. It was out of the question to suppose that the crescents or motile forms could come from degeneration in the stroma of the corpuscle, but that the hyaline forms resulted from such changes was not altogether improbable, and further investigations were necessary to determine this point.

DR. J. P. C. GRIFFITH called attention to the diagnostic value of these organisms, and instanced a case where, from the indefinite history and symptoms, he was unable to make a diagnosis until after an examination of the blood, when a short course of treatment resulted in a cure.

DR. H. C. WOOD said that no one seemed to have made any connection between the crescents and the amoeboid forms: they seem to differ in that these are destroyed by quinine, those are not affected. We know that malarial cachexia is cured by quinine, arsenic, and iron: if these remedies have no effect on the crescents, what connection have these bodies with malaria, and what becomes of them? Do they eventually disappear?

DR. FORMAN asked whether these organisms are the same as those bodies described by Hütter some twenty years ago?

DR. COUNCILMAN said in concluding that Hütter described moving bodies attacking the red corpuscles, existing in all fevers, and apparently almost everywhere else. These observations had never been confirmed. The point raised by Dr. Wood had always puzzled him, and for a long time he had tried to reconcile himself to a belief in two distinct diseases, but this he could not do, as, always, as the other forms disappear, the crescents appear. He had never seen the crescents unless with a history of previous chills. He was not altogether prepared to say that quinine had no effect on the crescents, though in several cases he had given it in large doses with no results. Still in some cases they do seem to disappear. He thought with Dr. Osler that the crescents could not be possibly produced by changes in the stroma of the corpuscles, though some of the other forms might.

Recent Literature.

Essays on Hysteria, Brain-tumor, and some other Cases of Nervous Disease. By MARY PUTNAM JACOB, M. D. 8vo. pp. 213. G. P. Putnam's Sons, New York and London. 1888.

In this volume the author has collected some six or seven papers on various neurological subjects, some of which have appeared elsewhere, and has thus made them convenient for reference,—an example which we wish others might follow. The most elaborate article in the volume is the essay on hysteria. The conditions fundamental to hysteria are asserted to be "a congenital or acquired deficiency in the power of nerve-elements to effect the storage of force in nerve tissues." Hence fatigue is more easily induced in the hysterical. Sensory disturbances are found to be of two kinds, anæsthesia and hyperæsthesia. In the former case the cell may not have force enough to appropriate

nutriment from the blood, or the blood-supply may be defective. In the case of hyperæsthesia there is, however, an excess of centripetal stimuli. The over-excited sensory centres may thus inhibit other regions in the fore-brain, and, in connection with the defective storage in the motor centres, may diminish the centring activities, giving rise not only to motor paralysis but to defective mental energy. This exaggeration of centripetal stimuli explains also the intense egotism of the hysterical. The theory of hysteria which is so carefully elaborated by the author seems to us the one which is most to be approved, and the theoretical corollaries as applied to treatment—to awaken more cortical areas into functional activity, and to restore inhibitory powers to the cortex and relieve the surcharged sensory centres—have long since been adopted by the wise physician upon empirical grounds. The second paper on tumours of the brain is a reprint of the article in Wood's Handbook, and is a trustworthy and complete monograph, giving numerous tables compiled from the works of Ladame and Bernhardt. It has rather too much of a statistical character to render it wholly satisfactory as an article for a hand-book, and it necessarily suffers by republication now, since the absorbing question of the operative treatment of brain-tumors had hardly been discussed when it was written. The rest of the book is taken up by short papers on the loss of nouns in aphasia, nocturnal rotary spasm, the prophylaxis of insanity, antagonism between remedies and diseases, and hysterical locomotor ataxia.

De l'Epilepsie Jacksonienne. Par le Dr. E. ROLAND. 8vo. pp. 192. Paris, 1888.

This is a *mémoire couronné* by one of the physicians of the "John Bost" asylums, and it is, moreover, the only monograph which has yet appeared upon this interesting subject. The author has made an exhaustive study of the literature of the subject, and has added a careful study of the three cases which have come under his own observation. He begins his memoir with a brief review of the anatomy and physiology of the cerebral cortex, and a careful study of the history of the affection. This is followed by a detailed study of the symptomatology, based on 112 reported cases with autopsies, with tables and a diagram of the brain showing the part affected in each case, the cases being classified according to the part affected. Jacksonian epilepsy has nothing in common with idiopathic epilepsy, but it is almost always symptomatic of a cerebral lesion. The essential feature of a lesion which can produce Jacksonian epilepsy is not its nature but its seat, which is usually in the psycho-motor region of the cortex or near it. The location of this lesion can be determined by the character of the onset of the convulsions and by the post-epileptic paralysis which may follow. Medical treatment, except in syphilitic lesions, is usually ineffectual, but surgical treatment as inaugurated by Horsley is of great promise. Although the writer has not made any new contributions to our knowledge of this subject, he has given us a useful and trustworthy monograph which contains a careful summary of our present knowledge, such as could be obtained only by laborious search through scattered articles.

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THE DOCTOR AT HOME.

A DOCTOR'S wife was not long since overheard telling her husband that he was pleasant everywhere save in his own family; and the doctor admitted that his good nature was so exhausted in his daily visits to his patients that he was irritable when he reached his home. Exactly how true the doctor's admission was in that particular instance it is impossible to say, but it seems as though in the ordinary course of a doctor's existence such a condition might often occur. Physicians certainly meet with many things in their daily rounds that try their tempers. Life is for most of them a constant study how to coax or compel obstinate or ignorant, perhaps silly or even insane, patients to follow the course thought to be for their good. All these troublesome individuals must be reasoned with, or influenced by some means to do as they ought. To carry his point the doctor must keep his temper. He usually preserves an outward calm, but if he is naturally quick tempered it is often at the cost of an effort which is exhausting. After such a struggle he reaches home in a state of irritability combined with mental and physical weariness, and under such circumstances it is not easy to meet little home trials with patience.

If he is met with the story that Jack will not mind his mother, and that Jane is in disgrace because she did not come directly home from school, and, perhaps, in addition, with the demand that he take some means to discover the cause of a disagreeable odor that has manifested itself somewhere about the house, what wonder if his temper proves inadequate for the moment to meet the strain that comes just at the time when he thought the vexations of the day were over and he might eat his belated and overdone dinner in peace. The family cannot know what the husband and father may

have been through during the forenoon. His dearest patient may be slowly sinking and he is filled with bitter thoughts at the limitations of his art; he has just discovered that a patient whose sense of business honor he knows to be of the very highest has deceived him; or the pathologist has shown his diagnosis to be wrong and all the theories he has built up have come to naught; or, most exhausting of all, he has spent an hour with some half-hysterical and wholly sick woman, listening to her complaints and trying to set her right. The ever-recurring annoyances cannot be enumerated. Perhaps the doctor's family needs especial grace to so order the household that the home vexations shall not be allowed to obtrude themselves until after such a time as shall allow the strained temper to recover.

Doctors are sometimes reviled by ascetics because they indulge in an occasional cigar after the day's work is over. To what class of beings can the cigar be better adapted than to the doctors! The load of their patients' ills grows light when lifted by the smoke, and their minds recover their wonted buoyancy. Perhaps if the woman whose reproach gave rise to these reflections had waited until the cigar was half smoked before she told of the shortcomings of Jack and Jane, she might have had less occasion to complain of her husband's temper. The patients surely are also benefited by the doctor's cigar; he is able to judge of their ills more philosophically when his over-excited nerves are quieted by the gentle sedative.

There is an idea prevalent in some doctors' families, more particularly among his wife's relatives, perhaps, that the doctor is lazy. Unless he is possessed of a superabundant vitality he is apt to be very quiet when at home. Not knowing what feat of endurance he may be next called upon to perform he learns to husband his strength for emergencies, and when not in action professionally he very likely presents the appearance of laziness to a casual observer.

If he is ambitious, or dependant upon his practice, it takes the doctor some time to learn to defend himself against encroachments, as, for instance, to send word that he is at dinner to a caller, so that an uninterrupted meal is an exception. It is seldom that a doctor is able to chat pleasantly with a strange visitor out of office hours about what may be done during office hours and the size of his fee, while still positively refusing to advise him professionally except during the hours appropriated to office consultations.

The doctor is apt to develop some sort of a hobby in the way of recreation. He is often specially fond of novels. Such a taste is seldom so catholic as that said to have been possessed by Macaulay,

who found some amusement in any novel. The doctor is more fastidious, and much more apt to know well some particular author whom he reads over and over again. Occasionally he rides a tricycle, though if he be much of a surgeon he will probably be shy of the less stable bicycle. He is very likely to cultivate a small flower garden if he lives in the country, or he becomes an authority on mushrooms, or in some other circumscribed field of natural history.

His office is a favorite spot for the little ones of his family, and he is subject to unlooked-for invasions occasionally, against which he has learned to close his door as though he were closeted with a patient, a proceeding which Jack and Jane resent when they find that no patient was there. Visitors, as they enter out of office hours, can often hear the retiring scuffle of little feet. At such times Hans Andersen, the Tanglewood Tales, or Alice in Wonderland, and Water Babies usurp the place on the office table that one expects to see occupied by more strictly professional volumes, and not seldom traces of feminine occupation, in crochet needles and unfinished embroidery, or even a stocking with the darning-ball and needle, show that the office is visited by others than the junior members of the family.

CONCERNING CHOLAGOGUES

RECENTLY MM. Prevost and Binet of Geneva have been continuing the work of experimentation on cholagogues begun by Hanfield Jones in 1863, and subsequently pursued by Arthur Gamgee and Hughes Bennett, Rutherford and Vignal, in England, Röhrig in Germany.

They first studied the action of alkaline salts, taking chiefly dogs as the subjects of their experiments. They found that the bicarbonate, carbonate, and chloride of sodium, as well as the Carlsbad salts, do not produce any notable modification in the flow of bile. The same result followed the administration of the phosphate of soda. Rutherford, it will be remembered, found this salt an exceptionally good cholagogue. The iodides and bromides, which are in part eliminated by the bile, diminish this secretion, while chloride of potassium augmented the quantity of bile to double or treble the normal. No such fact was noted by previous experimenters. Among the metallic preparations, arsenic, sulphate of copper, and iron were found to have no influence. There was a marked agreement between the results obtained by the Geneva physicians and those of all the former experimenters in trials made with calomel. They affirm that this mercurial does not possess the cholagogue virtues formerly attributed to it, and they insist that the green color of

the stools produced by calomel is due, not to the presence of bile, but to a mercurous sulphate formed in the intestine.

Among organic bodies, turpentine, which enters into Durande's specific for gall-stones, with its derivatives terpine and terpinol, produces a notable augmentation of the biliary secretion. It is the same with the salicylates and benzoates, which were also found to be good cholagogues by Rutherford and Vignal.

Among the vegetable purgatives euonymin (as in Rutherford's experiments) was seen to cause copious biliary evacuations. The Geneva experimenters assign to euonymin the first place as a cholagogue. They also noted the markedly favorable action of podophyllin on the flow of bile. They moreover observed that the quantity of bile augments somewhat with the introduction of food, and especially after the ingestion of peptones, but not at all after the ingestion of fat; copious lavements of cold water, said reflexly to have a cholagogue action, do not modify the biliary secretion.

MM. Prevost and Binet have arranged in four groups various medicinal substances relatively to their influence on the secretion of bile:—

Group I. *Substances that augment the secretion of bile.*—Bile, the biliary salts, and urea (the latter was experimented only on animals), essence of turpentine, chlorate of potash, benzoate and salicylate of soda, salol, euonymin, podophyllin, etc.

II. *Substances having a slight, or doubtful, incon-stant action.*—Bicarbonate and sulphate of soda (sulphate of soda was found by Rutherford to be markedly cholagogue), chloride of sodium, Carlsbad salts, antipyrine, aloes, rhubarb, hydrastis Canadensis, ipecac, boldo.

III. *Substances that cause a diminution of bile.*—Iodide of potassium, calomel, atropine, strychnine.

IV. *Substances without action on the biliary secretion.*—Phosphate of soda, bromide of potassium, corrosive sublimate, arseniate of soda, alcohol, ether, glycerine, quinine, pilocarpine, senna, columbo.

Lastly, the only substances which are eliminated by the bile are: essence of turpentine and its derivatives, salicylic acid, salol, bromide and iodide of potassium, chlorate of potassium, arsenic, fuchsine, cochénille; traces also are found of iron, lead, mercury, and caffeine.

ON THE TREATMENT OF INTESTINAL OCCLUSION BY ELECTRICITY.

It is well known that faradization of the intestine (first taught by Duchenne de Boulogne) in intestinal occlusion gives uncertain results, and is very generally disappointing. Though induced currents produce a very energetic contraction of the

striated muscles, they have but feeble action on the unstriated muscles, and in particular those which cause the peristaltic contractions of the intestines, and this is especially the case when the intestine is already in a torpid state, as is the rule in intestinal obstruction. The interrupted galvanic current, on the contrary, if sufficiently intense, constantly provokes energetic peristaltic contractions. A serious difficulty, however, in the way of utilizing galvanism in these cases is that a current of even feeble intensity, twelve to fifteen milliamperes, for instance, gives rise, at the points where the metallic electrode is in contact with the mucous membrane, to an electrolytic action sufficiently intense to determine the production of eschars.

Bardet, an electro-therapist of France, as we learn from the address of Larat before the Academy of Medicine, Aug. 28, has succeeded in remedying the difficulty by terminating the intestinal pole in a mass of salt-water, introduced into the rectum by means of an ordinary syringe, the electrode, which is connected with the battery and made to end in this saline solution, being a gum elastic sound with an olive-shaped metallic tip. Electrization is begun with a current of moderate intensity, and the current is speedily raised by adding to the circuit a certain number of elements, till it attains the intensity of 35 to 40 milliamperes, and the current is allowed to pass without any shock for five minutes. At the end of this time the current is reversed, then it is allowed to pass again, the operator interrupting it about every twenty seconds by a shock about as powerful as the patient can bear. Coincidentally with the reversing of the current, the patient is seized with an intense desire for defecation, which he is soon obliged to gratify. Then the séance ceases, the sound is withdrawn, and the patient endeavors to have a stool.

Larat, in the communication referred to, reports sixteen cases where this process was employed; it was successful in ten of them.

WOMEN AND THE STUDY OF MEDICINE.

PROFESSOR WALDEYER, of Berlin, read a paper recently before the Assembly of German Naturalists and Physicians at Cologne, in which he exhaustively reviews the rôle of women in the study and practice of medicine, going back to antiquity, and bringing forward a curious array of historical facts through the middle ages down to the present time. His conclusions are not favorable to the "women doctors." Among the objections which he raises are the following: "The profession, and especially the faculties, will be overcharged; men capable of doing great things will keep out of medicine. This will be an enormous loss to science,

for women are good for nothing as experimenters or original workers. In the laboratories they are awkward, careless, and unskilful." He emphasizes the usual stock arguments as to the "separate spheres" of the sexes, and concludes: "We should take care how we encourage the tendency of women to enter upon the study of medicine. It is not the way which will lead to amelioration of their lot. If the medical profession is open to them, the other learned professions must follow in their turn. Hence there is sure to result a fierce and bitter struggle, in which our entire humanity will succumb!"

Such a prospect would be sufficiently gloomy to contemplate, and we hope in this country at least it may be averted!

MEDICAL NOTES.

— A FITTING MONUMENT. — The friends of Dr. Walter A. Dun, Cincinnati, a young physician who died a few months ago, have adopted an appropriate method of erecting a monument. It is to endow a bed in the Children's Hospital of the city by raising a fund of \$3,000, the income from which enables the hospital to establish a free bed perpetually in memory of Dr. Dun. This form was chosen because the doctor had done excellent work in planning the hospital.

— The *British Medical Journal* refers to the report of the coroner in one of the "Whitechapel murders" thus: "The coroner, Mr. Wynne E. Baxter, in summing up the evidence given at the inquest held on Annie Chapman, who was murdered in Hanbury Street, Spitalfields, on September 8th, gave a remarkably lucid and able sketch of the probable circumstances of the murder, and adopted a theory as to the motive of the murderer, which, if established by further evidence, would place the crime in a category of which happily there has been no example since the days of Burke and Hare, in Edinburgh, and of the men Bishop and Williams, exposed by Mr. Partridge, surgeon to King's College Hospital, over fifty years ago. Dr. Phillips, who made the *post-mortem* examination, found, as we stated last week, that certain parts of the body were missing; these were a central portion of the abdominal wall, including the navel; the posterior and upper portions of the bladder, the whole of the uterus and the upper third of the vagina. From this fact it was deduced as probable that the murderer possessed some rough acquaintance with human anatomy, and that his object was to obtain the uterus entire; the coroner related a circumstance which appeared to him to supply a motive. Some months ago, it was stated, an American applied to the sub-

curator of the Pathological Museum of one of the medical schools for assistance in obtaining a number of specimens of the uterus. He explained his request by saying that he desired to issue an actual specimen with each copy of a book which he was about to publish, and ended by offering to pay as much as £20 a piece for each specimen. This story, however, presents several inherent improbabilities, which will occur to every medical reader, and we cannot accept it as explaining much that still remains mysterious in this crime."

— The *Sanitary Engineer* calls attention to some of the absurdities proposed in the National Congress as means of meeting future outbreaks of yellow fever. Among these may be mentioned the bill introduced in the Senate by Senator Call, by which it is proposed to establish a scientific bureau in the city of Jacksonville to gather facts in relation to yellow fever. This so-called bureau is to be composed of seven physicians of the different schools of medicine; and if it were ever so constituted it would be anything but scientific.

Another bill equally if not more absurd is the one introduced by Senator Plumb, offering a reward of one hundred thousand dollars to any person or persons who shall discover the cause, remedy, and treatment of yellow fever.

The method of treatment is to be copyrighted, and must cure ninety-eight per cent. of all cases. The evidence required is that all persons who recover from yellow fever under any copyrighted remedy are to file a sworn statement to that effect with the surgeon-general of the army, and all "medical doctors" (!) and nurses who attend any one who dies while being treated with a copyrighted remedy are to report the same to the surgeon-general.

— A woman came to consult Dr. D., whose office was crowded. She complained of pain in her chest. The doctor hastened to write a prescription for a Thapsia plaster 4 x 6 inches.

"Put this on the side where you have pain," he exclaimed.

Three days later the patient returned.

"You have applied what I have given you?" demands the doctor.

"Yes, sir," replied the verdant maid, "I am still wearing it and feel much better."

She pulled up her chemise as she spoke, and there on her chest was the prescription for Thapsia plaster.—*Bulletin Générale de Thérapeutique*.

NEW YORK.

— Another case of yellow fever, the third since August 1st, has occurred in Brooklyn. The subject of the disease was Captain John Jellard, command-

ing the Red Cross Line steamer Ceareuse, which arrived from Brazil October 22nd. The vessel left Para October 11th, and when four days out Captain Jellard was taken seriously ill. By the time Sandy Hook was sighted, however, he had so far recovered as to be able to go on deck. When quarantine was reached and the steamer was boarded by Health Officer Smith, the captain swore to a clean bill of health; and he was accordingly allowed to go up to Martin's stores at Furman Street, Brooklyn. After reaching Brooklyn, Captain Jellard was taken worse, and on October 24th was removed by the agent of the line of steamers to St. John's Hospital. It was not stated that he was suffering from yellow fever, but the suspicions of the house physician were aroused by his appearance, and he was accordingly at once isolated. Half an hour after his admission black vomit developed, and at eight in the evening he died. The day following an autopsy was made by Drs. Connerly, Jewett, Thomas, and Bliss, the result of which abundantly confirmed the diagnosis of yellow fever.

It is thought that Captain Jellard was convalescent when he left his bed on the 22nd to get his vessel through quarantine, and that he caught cold at that time and suffered a relapse, which ended fatally. The Ceareuse was at once sent back to quarantine, and thoroughly fumigated; as was also such of the cargo as had been landed on the pier.

— Complaints having been made by the Health Department that the dog pound contiguous to the Willard Parker Hospital, at the foot of Sixteenth Street, East River, was a source of great annoyance and injury to the patients in the hospital, Mayor Hewitt has for some time been in consultation with the Society for the Prevention of Cruelty to Animals, with a view to securing a more prompt and humane method of disposing of the dogs than that now employed, which consists in crowding a large number into an iron cage and drowning them in the river. The Society recommended either electricity or suffocation by carbonic acid gas; but as both these methods were found to involve more expense than was desirable, President Baylis of the Board of Health was asked by the mayor to make some experiments for the purpose of solving the problem. The result of these has led him to declare in favor of chloroform, it being found that one half ounce of a cheap quality of the drug will cause death without pain in two minutes; and it is probable that this will be the method finally decided upon.

— By the will of Dr. Thomas T. Salmi, late professor of anatomy in the College of Physicians and Surgeons, which has just been admitted to probate, his extensive collection and the apparatus

and models employed in his lectures are left in trust for the use of the anatomical department of the college.

— Dr. John William Schmidt Arnold, formerly of New York, died at Sewanee, Tennessee, October 20th. He was born in Charleston, S. C., May 16, 1846, but his family removed to New York while he was quite young. He was graduated at Columbia College in 1868, and from Bellevue Hospital College in 1871. Owing to delicate health he never engaged actively in practice, but he devoted himself with distinguished success to microscopy, physiology, and pathology. While still a young man he was elected to the chair of normal and pathological histology and of physiology in the medical department of the University of the City of New York, a position which he held until his failing health compelled him to remove to the South. He was also curator in Bellevue Hospital for a number of years.

Miscellany.

ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL BENEVOLENT SOCIETY.

THE annual meeting of the Massachusetts Medical Benevolent Society was held at the Boston Medical Library Association on Thursday, October 25th, at four o'clock in the afternoon. The treasurer read his report, in which he stated that eleven beneficiaries had received an annuity of eighty dollars, and recommended either that the annuity should be increased or the list of beneficiaries be enlarged. He also announced that the Society had received during the past year a bequest from the late Dr. C. E. Ware, of \$2000, which addition increased the investment fund to the full amount of \$25,000.

The following officers were elected for the ensuing year: Dr. Henry W. Williams, President; Dr. Richard M. Hodges, Vice President; Dr. Francis Minot, Treasurer; Dr. Robert Amory, Secretary. Trustees: Drs. Benj. E. Cotting, Augustine Shurtleff, F. C. Shattuck, Joseph Stedman, W. W. Wellington, J. Collins Warren, J. P. Maynard, F. I. Knight, E. G. Cutler.

There are 17 life members, 6 benefactors, and about 200 regular members of this Society.

Drs. Henry R. Stedman and Douglas Graham were elected members of the Society at the above meeting.

SALICYLATES AND CAFFEINE IN HEADACHE.

DR. JAMES LITTLE, of Dublin, has published (see *Dublin Journal of Medical Science*, June; *Practitioner*, Sept., 1888) a valuable note on the relief of migrainous headache by a combination of salicylate of sodium and caffeine. Though typical migraine is not very common, we frequently meet with persons suffering from headaches which appear to be of the same nature. This headache occurs at various intervals — three or four times a year, sometimes two

or three times a week. The following case is an instance. A married lady, of 58, had suffered for eight years from headaches which had begun two years after the menopause. At first they occurred every three or four weeks; of late the intervals had been only ten or twelve days. The evening preceding the attack she feels drowsy, and during the night often has nightmare. She awakes about five o'clock with throbbing pain in the vertex; retching almost immediately begins; and this continues violently and convulsively during the day, so that she cannot leave her bed — the pain in the vertex continuing all the time. About eight o'clock in the evening her sufferings begin to abate, and next morning she is as well as usual. Much pale urine is passed during the attack; her appetite is always poor; she eats little butcher's meat; and has confined bowels. She suffers almost every night, more or less, from nightmare, and is constitutionally anxious and easily worried. Dr. Little advised her to take pills of bromide of zinc and Indian hemp twice daily, and to use when the attack began the following combination: twenty grains of salicylate of sodium in a wine-glassful of water made effervescent by the addition of a dessertspoonful of the granular citrate of caffeine. The effervescent caffeine makes the dose a very palatable one, which the salicylate alone is not, and probably renders it more useful; but that the good effect is not due to the caffeine is proved by the fact that Dr. Little has seen it relieve persons who had previously used the caffeine alone without benefit. If necessary, a second or even a third dose may be given at intervals of two hours. It does not lose its effect.

MAGNANI ON AN ENDEMIC OF HYSTERIA AT ALBADIA.

MAGNANI, in the *Gazz. Med. Italiana*, September, 1888, gives an interesting account of an endemic of hysteria among the peasants of Albadia, in Italy. Much excitement had been aroused in the neighborhood, and the local priesthood had attempted to exorcise the evil spirits by religious ceremonies, but without success.

The *London Medical Recorder* gives the following summary of the epidemic. In a damp, imperfectly lighted hut lay three young girls and an old woman, who were said to be the most seriously affected with this strange evil, sleeping on some straw. Soon the greater part of the girls in the village who were subject to these attacks had collected in the hut, attracted by the news of the visit of the two strangers, one of whom was said to be a doctor. In a few minutes one of the girls fell down attacked with tonic and clonic convulsions; then another, rather younger, threw herself on the ground, stretching out her arms; a third was seized with a sudden pallor and fell motionless; another, who had been laughing at the first, was herself seized with disorderly movements and contractions of almost all the muscles. Finally, in the course of an hour, fourteen girls of under twenty years of age, one boy of eleven, and a woman of over fifty were attacked with convulsions of different degrees of severity. The attacks lasted generally about ten minutes. Two of the patients deserve further mention: the woman of fifty and a robust peasant of nineteen.

The attacks, in the case of the former, commenced with rigidity of the muscles of the face and neck, and afterwards of the limbs; then she went through the most violent contortions and muscular movements, and, finally, sitting down, beat her chest with her hands, clapped her hands many times, and fell motionless. Sometimes this terminated the seizure, but sometimes she repeated it in exactly the same way again and again. She said that during the attacks she always saw the figure of the woman who had bewitched her and her companions. The other case was a typical example of hysterolepilepsy. The attack commenced with pallor, then she fell, and twisting round and round on the straw, tore to pieces whatever came into her hands. In a few minutes it was all over and she was well again.

The origin of this outbreak is curious. A band

of about seventy girls engaged themselves to an old woman to work for her in the rice fields. Afterwards, thinking that they could make a better bargain, they broke their engagement and worked for some one else. The old woman whose indignation they had aroused was in this superstitious country generally supposed to possess the power of witchcraft, and the girls continued daily in dread of being bewitched. This, acting on a constitution enfeebled by eleven hours' work a day, standing in water, under a hot sun, with food consisting chiefly of unsalable beans, some bad bacon, and decaying rice, soon led to a state of very unstable mental equilibrium, which was completely upset by seeing the hysterolepileptic attacks of the first patient. By sending them off to their own homes and isolating them, they were all speedily cured.

REPORTED MORTALITY FOR THE WEEK ENDING OCTOBER 20, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York.....	1,526,081	661	247	17.40	15.45	4.65	1.80	3.30
Philadelphia.....	1,016,758	—	—	—	—	—	—	—
Brooklyn.....	751,432	287	104	19.60	*11.90	4.20	2.10	7.00
Chicago.....	760,020	233	83	17.20	11.18	4.29	2.14	8.60
St. Louis.....	449,160	—	—	—	—	—	—	—
Baltimore.....	437,155	139	52	2.16	15.84	3.60	2.88	—
Boston.....	407,024	188	47	15.90	23.37	2.65	5.83	7.19
Cincinnati.....	325,000	100	—	19.00	20.00	5.00	4.00	6.36
New Orleans.....	248,000	122	43	22.14	11.48	8.19	.82	10.00
Buffalo.....	230,000	—	—	—	—	—	—	9.84
Washington.....	225,000	105	39	28.50	5.70	8.55	8.55	1.90
Pittsburgh.....	210,000	—	—	—	—	—	—	—
Milwaukee.....	200,000	—	—	—	—	—	—	—
Providence.....	123,000	—	—	—	—	—	—	—
New Haven.....	80,000	—	—	—	—	—	—	—
Nashville.....	65,153	15	5	46.66	6.66	20.00	6.66	20.00
Charleston.....	60,145	43	12	6.99	18.64	2.33	—	—
Portland.....	40,000	14	3	14.28	—	14.28	—	—
Worcester.....	76,328	22	9	18.20	4.55	9.10	4.55	—
Lowell.....	69,530	—	—	—	—	—	—	—
Cambridge.....	64,079	27	10	37.03	7.40	14.80	11.11	7.40
Fall River.....	61,203	22	7	18.20	4.55	9.10	4.55	—
Lynn.....	51,467	11	—	9.09	18.18	9.09	—	—
Lawrence.....	40,175	19	6	10.52	15.78	5.20	5.26	—
Springfield.....	39,952	20	4	45.00	25.00	20.00	15.00	5.00
New Bedford.....	36,298	17	3	29.40	5.88	5.88	5.88	11.76
Somerville.....	33,307	18	3	11.11	5.55	—	5.55	5.55
Holyoke.....	32,887	—	—	—	—	—	—	—
Salem.....	28,781	10	3	—	—	—	—	—
Chelsea.....	27,552	10	2	20.00	—	—	10.00	10.00
Haverhill.....	24,979	8	3	—	12.50	—	—	—
Taunton.....	24,799	9	2	—	11.11	—	—	—
Brockton.....	24,784	6	1	50.00	—	—	33.33	16.66
Gloucester.....	23,187	—	—	—	—	—	—	—
Newton.....	21,105	—	—	—	—	—	—	—
Malden.....	18,923	8	1	12.50	37.50	—	—	12.50
Fitchburg.....	17,534	13	5	23.07	30.76	—	15.38	—
Waltham.....	16,651	10	2	10.00	10.00	—	—	—
Newburyport.....	13,839	8	2	—	12.50	—	—	—
Quincy.....	13,336	—	—	—	—	—	—	—

Deaths reported, 2145; under five years of age 698; principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 403, consumption 205, acute lung diseases 271, diphtheria and croup 121, diarrhœal diseases 107, typhoid fever 69, malarial fever 30, whooping-cough 28, scarlet fever 26, measles 10, cerebro spinal meningitis eight, erysipelas four, puerperal fever two. From malarial fever, New York and Brooklyn eight each, Washington six, Baltimore four, New Orleans three. From whooping-cough, New York 12, Brooklyn four, Chicago, Baltimore, and Washington three each, Boston, New Orleans, and Fitchburg one each. From scarlet fever, New York 16, Brooklyn five, Baltimore, Boston, Cambridge, Fall River, and New Bedford one each. From measles, New York nine, Chicago one. From cerebro-

spinal meningitis, New York four, Chicago, Charleston, Worcester, and Springfield one each. From erysipelas, New York two, Brooklyn and Washington one each. From puerperal fevers, Baltimore and Charleston one each.

In the 28 greatest towns of England and Wales with an estimated population of 9,238,273, for the week ending October 13, the death-rate was 21.0. Deaths reported 3777; infants under one year of age, 1123; diarrhœa 181, measles 76, whooping-cough 62, scarlet fever 59, diphtheria 49, fever 38, small-pox (Hull) one.

The death-rates ranged from 11.9 in Derby to 36.7 in Manchester; Birmingham 17.2, Bradford 20.7, Brighton 17.8, Hull 21.7, Leeds 24.1, Liverpool 21.4, London 18.7, Nottingham 23.5, Sheffield 23.4, Sunderland 24.9.

In Edinburgh 18.9, Glasgow 21.8, Dublin 23.6.

The meteorological record for the week ending October 20, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week end'g	Barom- eter.	Thermometer.		Relative Humidity.		Direction of Wind.		Velocity of Wind.		State of Weather.*		Rainfall. Duration, Hours & Min. Amount in inches.
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	S. A. M.	S. P. M.	Daily Mean	S. A. M.	S. P. M.	S. A. M.	S. P. M.	
Saturday, Oct. 20, 1888												
Sunday . . . 14	29.90	41.0	42.0	40.0	92	77	84.0	N	N	O	C	.09
Monday . . . 15	30.02	44.0	50.0	36.0	72	59	60.0	N	W	C	P	.30
Tuesday . . . 16	30.05	52.0	57.0	40.0	60	50	68.0	W	W	C	P	3.10
Wednesday . . 17	29.92	50.0	54.0	46.0	54	46	53.0	N	W	O	P	.06
Thursday . . 18	30.03	45.0	53.0	43.0	68	63	66.0	N	W	C	C	
Friday . . . 19	30.01	44.0	51.0	35.0	76	79	75.0	N	W	P	O	
Saturday, 20	29.75	45.0	58.0	45.0	56	61	74.0	W	N	O	O	.33
Mean, the Week												

* O, cloudy; C, clear; F, fair; G, fog; H, hazy; S, smoky; R, rain; T, threatening; N, snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM OCTOBER 20, 1888, TO OCTOBER 26, 1888.

PAGE, CHARLES, colonel, assistant surgeon general, medical director of the Department, will proceed to and inspect the medical department at Forts Ellis, Tex.; supply, Reno, N. H., and Gibson, Ind. Ter.; Fort Leavenworth, Kans., and the Leavenworth military prison, in the order named, and upon completion of this duty return to these headquarters. Par. 1, S. O. 127, headquarters department of the Missouri, Fort Leavenworth, Kan., October 15, 1888.

WOLVERTON, WILLIAM D., major, surgeon, is relieved from duty at Fort D. A. Russell, Wyoming Territory, and will report in person to the commanding officer, Fort Douglas, Utah Territory, for duty at that post. Par. 16, S. O. 248, headquarters of the army, A. G. O., Washington, October 24, 1888.

By direction of the Secretary of War, the leave of absence granted Major John W. Williams, surgeon, in S. O. 200, October 4, 1888, division of the Atlantic, is extended one month. Par. 14, S. O. 246, A. G. O., October 22, 1888.

By direction of the Secretary of War, leave of absence for one month, to take effect on the completion of his present duties, is granted Captain Edward C. Carter, assistant surgeon. Par. 13, S. O. 246, A. G. O., October 22, 1888.

Leave of absence for one month on surgeon's certificate of disability is granted Major William H. Forwood, surgeon United States army, Fort Snelling, Minn. S. O. 100, headquarters Department of Dakota, St. Paul, Minn., October 20, 1888.

BROWN, PAUL R., captain, assistant surgeon, is relieved from duty at Fort Sidney, Neb., and will report in person to the commanding officer Fort D. A. Russell, Wyoming Territory, for duty at that post. Par. 16, S. O. 248, headquarters of the army, A. G. O., Washington, October 14, 1888.

By direction of the Secretary of War, First Lieutenant William C. Borden, assistant surgeon, is relieved from duty at San Antonio, Texas, and will report in person to the commanding officer Fort Ringgold, Texas, for duty at that post. Par. 11, S. O. 247, A. G. O., Washington, October 23, 1888.

Leave of absence for one month, with permission to apply for an extension of one month, is granted First Lieutenant R. R. Ball, assistant surgeon United States army, Par. 3, S. O. 129, headquarters Department of the Missouri, Fort Leavenworth, Kas., October 13, 1888.

PROMOTION.

LOBINO, LEONARD Y., captain, assistant surgeon, to be surgeon, with the rank of major, October 9, 1888, vice McEachan, deceased.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING OCTOBER 27, 1888.

SMITH, HOWARD, passed assistant surgeon, detached from the "Wabash" and granted six months leave, with permission to leave the United States.

ACZAL, E. W., assistant surgeon, ordered for examination preliminary to promotion to passed assistant surgeon.

WREAR, F. W. F., assistant surgeon, ordered for examination preliminary to promotion to passed assistant surgeon.

ACZAL, E. W., assistant surgeon, after examination detached from Naval Academy to navy yard, New York.

CUTTS, J. F., assistant surgeon, detached from the "Franklin" and to Coast Survey Steamer "Gedney."

OWENS, THOS., assistant surgeon, detached from Coast Survey Steamer "Gedney," and to Coast Survey Steamer "Blake."

BERNARD, F. A., assistant surgeon, detached from Coast Survey Steamer "Blake" and to Naval Academy.

HARRIS, A. N. T., assistant surgeon, detached from Navar Hospital, Navar Island, Cal., and wait orders.

H. L. JOHN H. J. passed assistant surgeon, detached from the "Monongahela" and wait orders.

CRAWFORD, M. H., passed assistant surgeon, detached from the "Yaudalla" and to the "Monongahela."

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.—There will be a meeting of this Society at 19 Boylston Place, on Monday evening, Nov. 5, 1888, at 8 o'clock. Dr. J. T. G. Nichols, "Cases of Erysipelas." Dr. W. A. Dunn, "Three Cases of Perityphilitis, with recovery." Dr. M. H. Richardson, "Two Laparotomies for Muscular Dystrophy, with Microscopic Demonstrations." Report of Committee on Admissions.

T. F. SHERMAN, M. D., Secretary.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.—There will be a meeting of this Section at 19 Boylston Place, on Wednesday evening, November 7th, at 8 o'clock. Communications: Dr. M. H. Richardson, "Two Laparotomies for Extra-Uterine Pregnancy." Dr. Royal Whitman, "A Case of Appendicitis in a child: operation, recovery." "A case of Macewen's Operation (for the radical cure of Hernia) in a girl, resulting in the cure of habitual incontinence of urine." Both patients will be shown. Dr. H. L. Burrell, "A few points in Macewen's Operation for the radical cure of Hernia."

G. H. MONKS, M. D., Secretary.

AMERICAN ACADEMY OF MEDICINE.—The American Academy of Medicine will hold its next annual meeting at the New York Hospital, on Tuesday and Wednesday, November 13th and 14th.

Papers will be read by Dr. H. I. Bowditch, of Boston, Theophilus Parvin of Philadelphia, Leontine Connor of Detroit, L. D. I. Lukley of New York, J. G. Wilson of Philadelphia, E. Andrews of Chicago, Geo. J. Fisher of Sing Sing, N. Y., C. C. Bonlight of Baltimore, R. L. Sibbet of Carlisle, Pa., W. F. Waugh of Philadelphia. The President's Address will be by Dr. F. H. Gerrish of Portland, Maine.

RICHARD J. DUNGLISON, Secretary.

AMERICAN PUBLIC HEALTH ASSOCIATION. SIXTEENTH ANNUAL MEETING.

The American Public Health Association will convene at Milwaukee, Wis., Tuesday, November 20, at 10 o'clock A. M., and continue four days. The meetings will be held in the Athenaeum Hall.

The Executive Committee have selected the following topics for consideration at said meeting:—

- I. The pollution of water-supplies.
- II. The disposal of refuse matter of cities.
- III. Animal diseases dangerous to man.
- IV. Maritime quarantine, and regulations for the control of contagious and infectious diseases, and their mutual relations.

Precedence will be given papers upon the above subjects, although other papers of a sanitary nature will be received by the Committee. The topics given indicate the subjects which it is desired to consider, but they are not to be regarded as the exclusive topics of the meeting. Papers of ability and practical application upon any subject connected with the public health interests will be received.

The report of the committee on the Lomb prize essays will be an event of much interest, as some sixty essays have been received in competition for the prizes offered by Mr. Henry Lomb, of Rochester, N. Y.

Reduced railroad rates from all sections of the country can be secured on the certificate plan, as heretofore.

IRVING A. WATSON, Secretary.

CONCORD, N. H., Oct. 22, 1888.

BOOKS AND PAMPHLETS RECEIVED.

Hygiene of the Nursery. By Lewis Starr, M.D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania; Physician to the Children's Hospital, Philadelphia, etc., etc. With 21 illustrations. Philadelphia: P. Blakiston, Son & Co. 1888.

The Urine and the Common Poisons. Memoranda, Chemical and Microscopical, for Laboratory Use. By J. W. Holland, M.D., Professor of Medical Chemistry and Toxicology, Jefferson Medical College of Philadelphia. Philadelphia: P. Blakiston, Son & Co. 1888.

Original Articles.

THE DIAGNOSIS AND MEDICAL TREATMENT OF ACUTE INTESTINAL OBSTRUCTION.¹

BY REGINALD H. FITZ, M. D.,

Professor of Pathological Anatomy in Harvard University, and Physician to the Massachusetts General Hospital.

IN the consideration of intestinal obstruction from a medical point of view, the subjects of chief importance undoubtedly relate to diagnosis and treatment.

The present communication is intended to call attention to those features which may possibly serve to characterize the former, and to mark the limits of the latter up to the point of surgical interference. It will be admitted without much question that the difficulties of exact diagnosis, and the possibilities of permanent relief, are greatest in acute, internal forms of obstruction. It is, therefore, to this part of the subject, in particular, that the present enquiry is directed.

The term intestinal obstruction would seem to be equivalent to stoppage of the bowels, and refers to the absence of an important function of this apparatus. The conspicuous causes of such a stoppage are essentially mechanical, and the anatomist finds the bands and cords, the slits and pouches, the invaginations, twists and knots, the strictures, tumors, and abnormal contents.

But in another class of cases the stoppage is present, the patient dies, and there is not found an entirely satisfactory mechanical cause of obstruction. If the intestinal coils are agglutinated or adherent in such a manner that valve-like projections into the canal are formed, these are considered by some a satisfactory explanation of the symptom. If the mesentery of any coil is so contracted that the legs of the loop are closely approximated, this change is frequently considered a sufficient cause. But agglutinated and adherent coils are frequently found in the absence of symptoms of intestinal obstruction, and the contracted mesentery is seen in cases where no stoppage of the bowels has occurred.

This symptom takes place in still another series of cases where the anatomist finds no suggestion of a lesion which offers the remotest possibility of acting as a mechanical cause. The physician then says the obstruction must be due to a paralysis of the muscular coat, or a spasm of the circular fibres, or a faulty innervation, or some peculiar modification of function.

Intestinal obstruction, in a technical sense, however, means something more than stoppage of the bowels. The latter symptom may be present at the outset, it may occur later in the course of the disease, or frequent loose movements may be a most characteristic symptom of the especial variety of obstruction, as in intussusception. Frequent dejections may also occur in the early stages of other varieties of obstruction, and throughout the course of the disease when feces are the cause. Stoppage of the bowels is thus not only unnecessary as a symptom of intestinal obstruction, but, when

present, its particular consideration has led to frequent errors of diagnosis. Of all the causes of stoppage, which have given rise to an erroneous diagnosis of obstruction, there is none more frequent than peritonitis.

In a general peritonitis the bowels are expected to remain inactive, and medical efforts are frequently directed to this result. In the circumscribed variety the important symptoms of localized pain and paralyzed bowels have often led to the diagnosis of acute, internal obstruction. This is particularly true in the case of inflammation of the vermiform appendix, a disease which is constantly being mistaken for acute obstruction. This error in diagnosis leads to corresponding errors in treatment. Because the bowels have been opened in such cases by powerful cathartics, quicksilver, electricity, violent movements of the body, and the like, therefore these are claimed to be valuable and efficient remedies in intestinal obstruction. Too often the speedy death of the patient results from such treatment, the local peritonitis being made general.

The only intestinal obstruction which deserves the joint consideration of surgeons and physicians is that due to well-recognized mechanical causes. It is the acute, internal variety of mechanical intestinal obstruction which forms the subject of this paper.

There are four main questions which require consideration in any given instance:—

First, Is the case one of acute, internal obstruction.

Second, Where is the obstruction seated?

Third, What is the variety?

Fourth, What is to be done?

The statements which follow in this paper are essentially based upon the study of a series of cases collected from the English, German, and French medical literature since 1880. Its claim to consideration lies in the fact that all the cases have been submitted to the severest criticism, with the resulting exclusion of a very large number. They are included under the heads of strangulation by bands, cords, etc., intussusception, knots and twists, obstruction by abnormal contents, strictures, and tumors. The entire number is two hundred and ninety-five, and they are divided as follows:—

Strangulation.....	101 cases = 34 per cent.
Intussusception.....	93 " = 32 "
Abnormal contents.....	44 " = 15 "
Knots and twists.....	42 " = 14 "
Twists and tumors.....	15 " = 5 "
	295 " 100 "

Excluding from this series the cases of acute obstruction from abnormal contents and from strictures and tumors, which are of the least importance in practice, there remain—

Strangulation.....	101 cases = 43 per cent.
Intussusception.....	93 " = 39 "
Twists and knots.....	42 " = 18 "
	236 " 100 "

It is interesting to compare these figures with the larger number in the collections of Duchaussoy,² Brinton,³ and Leichtenstern:⁴—

² Duchaussoy, Mémoires de l'Académie Impériale de Médecine, 1850, xiv, 97.

³ Brinton, Intestinal Obstruction, 1867, 98.

⁴ Leichtenstern, Ziemssen's Handb. d. Sp. Path. und Therapie, 1876, vii, 2, 523.

¹ Read before the Congress of American Physicians and Surgeons in Washington, D. C., Sept. 18, 1888.

Percentage of relative frequency of the more prominent causes of acute intestinal obstruction.	Number of cases included.	Strangulation.	Intussusception.	Twists and Knots
Duchnussoy	347	54	39	6
Brinton	481	33	74	10
Leichtenstern	1131	35	39	6

STRANGULATION.

First in numerical importance as a cause of acute, intestinal obstruction is strangulation by bands or cords.

These are most frequently the result of a pre-existing peritonitis, and are either fibrous adhesions alone, or are formed by adherent appendages of the intestinal or genital tract. The former are epiploic, vermiform, diverticular, omental, or mesenteric. The latter are Fallopian tubes and pedunculate ovarian or uterine tumors. The diverticular appendages are either Meckel's diverticulum, the omphalo-mesenteric or vitelline duct, or the persistent remains of the vitelline blood-vessels. The former is usually attached by the latter to some part of the abdominal wall or contents. It may also be thus attached from peritonitis in the absence of the latter. The persistent vitelline blood-vessels or their remains may likewise form the strangulating cord in the absence of the diverticulum. Omental cords may be adherent in consequence of peritonitis, or they may result from the presence of slits or fissures in the omentum. The mesentery serves as a cause of strangulation when it is fissured by a slit. Peritoneal pouches and openings may be added to the above list.

There seems to be no essential difference in the nature of the symptoms which arise from these causes of obstruction. Cases of knots and twists of the small intestine might be added to the list from the nature of their symptoms, but their number is so small, only two of each, that for practical purposes they may be omitted.

The immediate anatomical causes of the one hundred and one cases of strangulation are as follows, the numbers being regarded as equivalent to percentages:—

Adhesions	63 cases.
Vitelline remains	21 "
Adherent appendix	6 "
Mesenteric and omental slits	6 "
Peritoneal pouches and openings	3 "
Adherent tube	1 "
Pedunculate tumor	1 "
	101 "

84% of the total number of cases were due to bands and cords in a limited sense. It is noteworthy that cases of diaphragmatic hernia, which form 19% of Leichtenstern's cases, were not reported in the past eight years.

The following table shows the bearing of sex in the frequency of obstruction from strangulation:—

	Adhesions.	Vitelline Remains.	Appendix.	Slits.	Pouches.	Tube.	Tumors.	Total.
Males	39	19	5	5	2			70
Females	24	1	1	1	1	1	1	30
	63	20	6	6	3	1	1	100

It thus appears that 70% of the cases of obstruction from strangulation occurred among males. Further, that nearly all the cases of obstruction from vitelline remains, adherent appendices, and slits were found among men. The percentage of bands of intestinal origin and those of pelvic origin was about equal in the two sexes.

The age at which the obstruction took place is shown in the following table:—

Years of Age.	Adhesions.	Vitelline Remains.	Appendix.	Slits.	Pouches.	Tube.	Total.
1-5		2					2
5-10		3	1				4
10-15	2	2	1				5
15-20	6	2		1			9
20-25	12	5					17
25-30	8	4	1	1			14
30-35	4			2			6
35-40	1	1	1				3
40-45	6		1				7
45-50	2						2
50-55	7		1				8
55-60	1			1	2	1	5
60-65	3			1			4
65-70	2						2
70-75	1						1
	55	19	6	6	2	1	89

Strangulation in early youth was, hence, relatively uncommon. Where it occurs it is most likely to result from vitelline remains. At least 40% of the cases of strangulation occurred between the ages of fifteen and thirty years, and adhesions as the cause of the same were more than twice as frequent as vitelline remains. After the age of thirty years adhesive bands are the usual cause.

In the etiology of adhesions a record of previous peritonitis, or perityphilitis, was found in ten of the cases, about one-sixth of all, and of an associated hernia in seven instances. In a small fraction errors in diet, violent muscular exercise, blows upon the abdomen, surgical operations for pelvic caries and cancer of the bowels, were important in the etiology.

In nearly one-half of the cases of vitelline remains previous attacks of abdominal pain were recorded, and in one instance there was the history of a yellowish discharge from the navel in infancy. One-half of the cases of adherent appendix were preceded by an attack of perityphilitis. Evidence of a pre-existing attack of intestinal obstruction was

⁵ Brinton gives forty-three per cent. of intussusception in his table of six hundred cases of intestinal obstruction by filis lesion, bands, adhesions, diverticula, or peritonium external to the bowel, strictures (including a few tumors) involving the intestinal wall, and torsion of the bowel on its axis. *Op. cit.*, 33.

found in one case of mesenteric slit; another was preceded by chronic dysentery for a year. A case of protrusion of the intestine through an opening in the coronary ligament suffered, three years before, from a severe attack of inflammation of the bowels, with intervening colic and repeated diarrhoea. The immediate attack of obstruction in two cases of mesenteric slit followed a fit of coughing in the one and took place at the stool in the other.

Evidence of antecedent peritonitis thus existed in 13% of the cases, the band then being an adhesion or an appendix. In 7% of the cases a hernia was associated with the band. In 80% of the cases there was no factor of diagnostic importance.

Abdominal pain was the first important symptom noticed in 82% of all the cases of strangulation. The percentage of its frequency in each variety of strangulation is shown as follows:—

In Adhesions.....	in 50 cases	=	79 per cent.	of all the case.
" Vitelline remains.....	18 "	=	86 "	" "
" Adherent appendix.....	6 "	=	100 "	" "
" Slits.....	6 "	=	100 "	" "
" Pouches and openings.....	2 "	=	65 "	" "
82				

It was usually sudden, severe, rarely slight, and was described as colicky. It was only exceptionally accompanied, at the outset, with tenderness. In the majority of cases it was simply stated to be abdominal.

It was located at the navel in eight instances, at the epigastrium in five, in the right iliac fossa in four, at the hepatic flexure and in the right hypochondrium each in three cases, in the left iliac fossa in two, in the lumbar region, splenic flexure, along the spermatic cord, and in the spine and back each in one case. An exact localization of the incipient pain was thus recorded in 29% of all the cases. There seems to be no diagnostic importance to be attached to the seat of pain as evidence of strangulation, or of its special cause, as will become apparent when the seat of the obstruction is stated.

The initial pain was found to be early associated with nausea or vomiting, either alone or together, in 69% of the cases. The date of appearance, and the frequency in the special varieties of strangulation are given in the following table:—

DATE.	Adhesions.	Vit. remains.	Appendix.	Slits.	Pouches, etc.	Total.
1st day.....	21	13	5	2	1	42
2nd day.....	7	4	1	1		13
3rd day.....	2			1		3
4th day.....	2				1	3
5th day.....	1					1
Not given.....	7					7
	40	17	6	4	2	69

A comparison of these figures shows the occurrence of this symptom on the first day in 68% of those cases in which it was possible to determine the date with accuracy. It took place on the first day in at least one-third of the cases of adhesions, in

more than one-half of those of vitelline remains, in five-sixths of those of adherent appendix, and in one-third of those of peritoneal slit. The proportion is evidently much greater when the number of cases is considered in which the date of occurrence could be definitely ascertained. The relative frequency then becomes more than one-half in the case of adhesion, two-thirds in those of vitelline remains, five-sixths in adherent appendix, and one-half in strangulation by a slit.

Its occurrence on the first day is most suggestive of an adhesion, a vitelline cord or diverticulum, an appendix, a slit, or a pouch, in the order stated.

The occasional absence of nausea or vomiting is noteworthy, and is mentioned in two cases of strangulation by adhesions, one of which terminated fatally, the other in recovery, after laparotomy.

The vomit, as in all cases of intestinal obstruction, was usually composed, at the outset, of the food last taken. It then became mixed with bile, eventually yellow, and finally fecal. It was frequently noticed that the vomiting only became constant when material was persistently taken into the stomach.

Fecal vomit is a term which is somewhat loosely applied, and is in no way to be regarded as other than conventional. There was no evidence to warrant the idea that the contents of the large intestine were ever vomited. The distinction between a yellow vomit and the fecal or stercoraceous variety seems to depend chiefly upon the length of time during which a pyloric insufficiency has existed. It is quite probable that among the records of fecal vomit are those in which this term was applied to the ejection of a yellow, odorless, intestinal fluid. The term should be more exclusively applied to the offensive ejections which have remained sufficiently long above the point of obstruction to become fetid. The following table shows the date of this intestinal vomit in thirty-seven cases:—

DATE.	Adhesions.	Vit. remains.	Appendix.	Slits.	Total.
2nd day.....	2	2			4
3rd day.....	4	2	2		8
4th day.....	3	1			4
5th day.....	6			1	7
6th day.....	2	3			5
7th day.....	2	1			3
8th day.....	1				1
9th day.....	2				2
10th day.....	1	1			2
13th day.....				1	1
Not given.....	5	4	1		10
	28	11	3	2	44

The vomit thus became fecal most often on the third and fifth days, although on these dates in only about one-fifth of the cases in which definite dates were given.

Tympany is next in importance to abdominal

pain and vomit as a symptom of obstruction from strangulation. Its occurrence in 56% of all cases is recorded, and the date of its appearance is given as follows:—

DATE.	Adhesions.	Vit. remains.	Appendix.	Sile.	Pouches.	Total.
1st day	2					2
2nd day	2	1	2	1		6
3rd day	1	2	1	1		5
4th day	1	2		1	1	5
5th day	1	2	1			4
6th day	3	2			1	6
7th day	2	1				3
8th day	1					1
9th day		1				1
10th day		1				1
11th day	2					2
13th day	2					2
Not given	4	1	1	1		7
	32	13	5	1	2	56

Tympanic distention of the abdomen thus occurred in more than one-half of the cases of strangulation, and was most frequent from the second to the sixth days inclusive. It may be wholly absent as late as the eighth day, and may be much on the first day. It was sometimes enormous during the first week, but much more often slight or moderate. The distended abdomen was not especially tender to the touch.

An abdominal tumor was sometimes noticed in cases of strangulation, and a distinction is to be drawn between tympany and tumor, although tympanic intestines may be the cause of each. Under the general head, tumor, are included circumscribed, distended, visible intestinal coils as well as local swellings not thus characterized. The latter were either palpable or their limits were determined by dullness on percussion in an elsewhere resonant and unusually distended abdomen. Such tumors and visible coils occurred as follows in the cases of strangulation:—

	TUMORS.	VISIBLE COILS.
Adhesions	4	7
Vit. remains	4	3
Appendix	1	1
Sile	1	
	10	

Thus in less than one-fifth of the cases tumors were to be recognized. The numbers are not sufficient to serve any purpose of differential diagnosis.

Fever was noted in 22% of all the cases. It rarely occurred before the second day, was sometimes absent altogether, and, when present, the temperature was below 100° F. in nearly one-half of the cases. Its occurrence and intensity were of

no positive value in the diagnosis of obstruction from strangulation.

Hiccough was a symptom of such infrequent record as not to demand any especial attention.

As a rule no mention was made of any peculiarities of the urine or its flow. The latter was sometimes mentioned as scanty during the first few days and after the tenth day, while it was often stated as normal on the thirteenth day. Its composition was usually noted as normal; occasionally it was reported to contain albumen or indican. The cases furnished no evidence that any alteration of the quantity or quality of the urine is of any diagnostic value.

In like manner with regard to collapse. The date of its occurrence was given in 23% of the cases, but the figures are too few to aid much in fixing upon the time when all efforts at purely medical treatment shall cease.

DATE.	Adhesions.	Vit. remains.	Appendix.	Pouches, etc.	Total.
1st day	1				1
2nd day	2				2
3rd day	2	1	1		4
4th day		1			1
5th day	2	1	1		4
6th day	1	1			2
7th day	1	1			2
8th day	1	2			3
9th day		1			1
11th day	1			1	2
13th day	1				1
	12	8	2	1	23

The occurrence of collapse is not to be regarded as necessarily indicative of a fatal termination, as in several cases recovery followed laparotomy, where collapse was noted at or before the time of operating.

The bowel obstructed was recorded as follows in 74% of the cases:—

INTESTINE OBSTRUCTED.	Adhesions.	Vit. remains.	Appendix.	Sile.	Pouches, etc.	Total.
Small	39	13	6	4	2	66
Large	5			2	1	8
	44	13	6	6	3	74

The part of the intestine obstructed in strangulation, as determined in fully three-fourths of all the cases, is the small intestine in nearly 90% of the cases, and the large in 10%.

The region of the abdomen in which the strangulating object was found was as follows in 72% of the cases:—

	Adhesions.	Vit. remains.	Appendix.	Slit.	Pouches, etc.	Total.
Right iliac fossa	19	21	6	1	1	48
Pelvis.....	7				1	8
Left iliac fossa.....	5			1		6
Left lumbar region.....	5					5
Right lumbar region.....	2					2
Umbilical region.....	2					2
Right hypochondrium.....	1				1	2
Left hypochondrium.....	1					1
	40	21	6	2	3	72

The position of the strangulating object was thus in the right iliac fossa in 67%, and in the lower abdomen in 83%, of the cases in which its position was given. It was present in the lumbar and umbilical regions in 10%, and in the upper abdomen in 7%.

It is obvious that an absolutely exact diagnosis of obstruction from strangulation is only to be made by a post-mortem examination or a laparotomy. From this point of view the mortality is total unless operative interference has been tried with success. Of one hundred and one cases, seventy-five died and twenty-six recovered.

The following tables were prepared to show the date of death in the absence of surgical treatment, and the relation of deaths to recoveries after surgical interference.

Date of death in thirty cases of strangulation under purely medical treatment:—

DATE.	Adhesions.	Vit. remains.	Appendix.	Slit.	Pouches, etc.	Total.
2nd day.....	4	1	1	1		7
3rd day.....	3	1		1		5
4th day.....	2	1			1	4
5th day.....	1					1
6th day.....	1	1		1		3
8th day.....	2					2
9th day.....		2				2
10th day.....	1					1
11th day.....	2				1	3
18th day.....				1		1
37th day.....		1				1
	16	7	1	4	2	30

It is evident that death occurred from the second to the fourth days inclusive in more than one-half of the cases where no surgical treatment was applied.

Operative interference took place in 67% of the cases, and with the following result:—

DATE.	Adhesions.	Vit. remains.	Appendix.	Slit.	Pouch, etc.	Tumor.	Total.	Death.	Recovery.
1st day.....	1						1	1	
2nd day.....	1	1					2	1	1
3rd day.....	2		1				3	3	
4th day.....	2	1		1			4	4	
5th day.....	5	2	2	1		1	11	5	6
6th day.....	6	1	1				8	3	5
7th day.....	8						8	6	2
8th day.....	2	1					3	1	2
9th day.....	3	1					4	3	1
10th day.....	2	1					3	1	2
11th day.....	2	2			1		5	5	
12th day.....	2						2	2	
13th day.....	2						2	1	1
14th day.....		1					1	1	
16th day.....		1					1	1	
25th day.....	1						1	1	
Not given.....	6	1	1				8	4	1
	45	13	5	2	1	1	67	41	26

The percentage of recoveries after surgical interference in cases of strangulation was 39%.

(To be continued.)

NERVOUS AFFECTIONS FOLLOWING INJURY.¹

("CONCUSSION OF THE SPINE," "RAILWAY SPINE," AND "RAILWAY BRAIN.")

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BEFORE discussing the question further it is essential to give some sort of a definition of what is meant by the two vague terms hysteria and neurasthenia. Neither of them can rightly be regarded as a disease. They are both conditions of the individual, the latter being well defined as "a bodily condition which is frequently associated with various chronic disorders, and not rarely coexisting with perverted functional activity of the nervous centres."³⁴ These states are often erroneously spoken of as if they were distinct diseases, and the names are often used as convenient "dumps" for cases where we can make no diagnosis. Hysteria is the state in which ideas can control the body and produce morbid changes in its functions,³⁵ while neurasthenia is a state of exhaustion from over-strain. The two states may be combined, or may complicate other affections. There is a hysterical symptom-complex that is so definite that it may fairly well be spoken of as a disease, and that is the group of symptoms that make up the *grande hystérie* of Charcot. To that alone I will apply the term hysteria; other

¹ Concluded from page 423.

³⁴ H. C. Wood, Nervous Diseases and their Diagnosis, p. 18.

³⁵ P. J. Mabitius, Ueber den Begriff der Hysterie. Centralblatt f. Nervenheilkunde, 1st Feb., 1888.

conditions I will speak of as the hysterical or neurasthenic states.

That psychical disturbance can produce functional paralyses has been known for many years, and these paralyses have been discussed under many different names, such as "emotional paralysis,"³⁶ "paralysis dependent upon idea,"³⁷ or the "Schrecklähmung" of the Germaus.³⁸ It was reserved for Charcot,³⁹ however, to give us the explanation of their origin. He has found that in certain hysterical patients at La Salpêtrière, who were easily hypnotizable, he could produce, by suggestion when hypnotized, paralyses precisely similar to those seen in other patients as the result of an injury. He therefore suggests that the mental state occasioned by the nervous shock of the accident is similar to the somnambulistic stage of hypnotism — there is an "obnubilation of the ego." The idea of injury, occurring in this state of nervous shock or obnubilation, acts as a traumatic suggestion, producing the same results as ordinary suggestion in a hypnotized patient. The patient develops his own idea and suggests it.

Charcot's brilliant reasoning proves beyond question the existence of a traumatic hysteria in his cases, but, after a careful study of these cases, and of others collected by Rendu,⁴⁰ Poupon,⁴¹ Lyon,⁴² and Berbez,⁴³ I am unable to trace any resemblance between them and the cases cited above, or the cases reported by German observers. Charcot's patients present either typical grand hysteria, with hemianæsthesia of the skin and organs of special sense, and with hysterio-epileptic attacks with grand movements, passionate attitudes, and the *arc de cercle*; hysterical monoplegia; or hysterical articular neurosis. The characteristics of hysterical monoplegia are paralysis, with or without contracture; anæsthesia of the paralyzed limb, not following any nerve tracts but having a sharp line of demarcation that encircles the limb like a bracelet; little or no atrophy, and normal electrical reactions. The joint affection is that first described by Brodie, simulating severe organic disease, and attended with great pain, cutaneous hyperæsthesia, and tenderness and stiffness of the joint, the stiffness disappearing under ether. The diagnosis of these conditions is not difficult, and in the cases reported above they were not present. I have seen all three of the conditions, — grand hysteria, hysterical monoplegia, and articular neurosis; but I have not yet seen these conditions appearing as the result of injury.

The researches of Thomsen and Oppenheim have shown conclusively that hemianæsthesia is not pathognomonic of hysteria. Charcot formerly held⁴⁴ that general anæsthesia was rare in hysteria, that the anæsthesia was usually unilateral, the median

line forming the limit. This claim has since been abandoned, for many of his cases show anæsthesia of only one limb, and Berbez has found hemianæsthesia in only thirty-eight out of ninety-three cases. The commonest symptom in sensory anæsthesia — a point in which both French and German observers agree — is the peripheral limitation of the field of vision. Thomsen and Oppenheim have found sensory anæsthesia, which in many cases was unilateral, in epilepsy, hysteria, neurasthenia, nervousness, chorea, "railway-spine," multiple sclerosis, Westphal's pseudo-sclerosis, organic cerebral disease, certain psychoses, and other conditions; peripheral limitation of the visual field being the most constant symptom. Furthermore, the investigations of the committee of the Société de Biologie, consisting of Charcot, Luys, and Dumontpallier, have shown⁴⁵ that in hemianæsthesia due to undoubted organic disease of the brain the phenomena of transfer can sometimes be excited by the application of metals. Thus it seems that not only is hemianæsthesia not pathognomonic of hysteria, but also that transfer phenomena in hemianæsthesia are not pathognomonic of hysteria.

Thomsen and Oppenheim oppose the hypothesis of hysteria as an explanation of their cases on other grounds. To their argument that the anæsthesia is fixed and unvarying, and that the disposition is not that of the hysterical, Charcot has replied by citing cases where the anæsthesia in hysterical patients has not varied for years. Oppenheim's further objections, however, seem to be more conclusive. He finds that the patients are anxious, hypochondriacal, and depressed; complaining of headache, vertigo, faintness, and occasionally of epileptiform attacks. They have pain in the back, anæsthesia, and peripheral limitation of the field of vision; their movements are slow and feeble; and they try to guard their spines from jarring; there is often tremor; the vesical functions may be disturbed; the pulse is often rapid; in one case Oppenheim found unequal pupils which did not react to light, in another optic atrophy. This latter symptom is not very rare; it has been noted, for example, in cases reported by Rigler,⁴⁶ Walton,⁴⁷ and Wharton Jones.⁴⁸ Not only are these symptoms not hysterical, but they are not even functional; and Oppenheim justly argues that if they be ranked as hysterical the firmest pillars of our knowledge are overturned. Westphal,⁴⁹ too, asserts that these cases cannot be brought under the rubric of hysteria.

Within a few months Oppenheim has reviewed the subject again,⁵⁰ and concludes that the cases with signs of undoubted organic disease, immobile pupils, optic atrophy, and vesical symptoms are in the minority, and that most cases represent, not a typical neurosis like hysteria or neurasthenia,

³⁶ R. B. Todd. Clinical Lectures on Paralysis.

³⁷ J. Russell Reynolds. Remarks on Paralysis and other Disorders of Motion and Sensation dependent on Idea. British Medical Journal, 6th Nov., 1882.

³⁸ E. Leyden. *Op. cit.*, i, 173.

³⁹ J. M. Charcot. *Op. cit.*, iii, 355, 392, *et seq.*

⁴⁰ H. Rendu. Contribution à l'histoire des monopégies partielles du membre supérieur, d'origine hystéro-traumatique. Archives de Neurologie, sept., 1887.

⁴¹ H. Poupon. Paralytiques hystéro-traumatiques. L'Encéphale, Jan., 1886.

⁴² G. Lyon. Note sur l'hystérie consécutive aux traumatismes graves. L'Encéphale, Jan., 1888.

⁴³ P. Berbez. Hystérie et Traumatisme. Paris, 1887.

⁴⁴ J. M. Charcot. Leçons sur les localisations, etc., p. 415.

⁴⁵ Premier Rapport fait à la Société de Biologie sur la métalloscopie et la métallothérapie du Dr. Burq. Gazette Médicale, 28th April, 1877.

⁴⁶ J. Rigler. Ueber die Folgen der Verletzungen auf Eisenbahnen, insbesondere des Verletzungen des Rückenmarkes. Berlin, 1879.

⁴⁷ G. L. Walton. Art. cit., Boston Medical and Surgical Journal, 11th Oct., 1883.

⁴⁸ Quoted by Eichhorst. Handbuch of Practical Medicine. Am. Trans., iii, 14.

⁴⁹ Archiv f. Psychiatric u. Nervenkrankheiten, xvii, 262, 1886.

⁵⁰ H. Oppenheim. Wie sind die Erkrankungen des Nervensystems aufzufassen, welche sich nach Erschütterung des Rückenmarkes, insbesondere Eisenbahnunfällen, entwickeln? Berliner klinische Wochenschrift, No. 9, 27th Feb., 1888.

but a more general and complex psycho-neurosis, from which the patient never recovers.

In the cases reported above the leading symptoms were certainly not those of hysteria. The psychical conditions noted—depression, anxiety, loss of memory, mental impairment; the tremor, the exaggerated reflexes, and the swaying with closed eyes; the pronounced paresthesia; the vertigo and headache (persistent headache being confessedly not a symptom of hysteria);⁵¹ nystagmus; vesical paresis—all these point to something beside hysteria or the hysterical state. Moreover, incontinence of urine, nystagmus, and exaggerated reflexes are symptoms which we should expect to find in organic rather than in functional disease.⁵² Case XI., especially, is strongly suggestive of disseminated sclerosis.

It seems to me that the theory of an organic lesion, possibly the lesions suggested by Westphal, is the one which is the most satisfactory in many of these cases. Branwell,⁵³ who is certainly sceptical as to the frequency of organic change, suggests that there may be multiple capillary hæmorrhages in the brain and cord, which give rise to inflammatory processes, and finally to sclerosis. These hæmorrhages are so small as easily to escape notice, and later, if there be sclerosis, the recent methods of staining would be necessary to detect it.

An interesting corroboration of this theory is afforded by the general lesions found in the bodies of some of those killed at the great railway accident at Charenton in 1881. In several cases Vibert⁵⁴ states that there were found very abundant punctate hæmorrhages in the upper part of the body, and suggests that they arose from lesion of the nervous centres. Willigk⁵⁵ found in one case dilatation of the finest vessels, with infiltration into the perivascular spaces, and degeneration of the coats of the vessels. Page,⁵⁶ however, asserts that in these railway cases "*Mors silet*;" which is as correct as many of his statements. Autopsies and experimental pathology furnish us with various facts which indicate an organic change. In regard to experiment, Mendel,⁵⁷ believing that hyperæmia was an important feature of the early changes in general paralysis, sought to excite an intense chronic hyperæmia in dogs. For this purpose he fastened the animals on a revolving table, with their heads toward the periphery. Rapid revolutions, 125 to 130 a minute, continued for half an hour, produced punctate hæmorrhages. Slower revolutions (110) for six minutes a day, produced, after some weeks, symptoms of general paralysis, and, on killing the animals, he found adhesions between the skull, the meninges, and the brain, an increase in the nuclei and cells of the glia, an increase in the number of vessels, and changes in the ganglion cells. This condition finds a clinical representation in a case recently reported by Bern-

hardt,⁵⁷ where symptoms of general paralysis developed gradually after a railway injury. Fürstner⁵⁸ has repeated Mendel's experiments, with fewer revolutions (60 to 80) for a shorter time (1 to 2 minutes) and continued for months. He found double primary degeneration of the lateral columns, and of a particular part of the posterior columns, changes in the optic nerves, and changes in the brain similar to those found by Mendel. Similar changes in the lateral columns have been found after death, in patients who had suffered from "concussion," by Dumenil and Petel, and also by Edes,⁵⁹ who has called attention to the occurrence of symptoms of spastic paralysis in certain cases.

In undoubted organic disease, however, no matter what the cause may be, there are often symptoms which are due to a superinduced hysterical or neurasthenic state, and these symptoms may so overlay the symptoms due to the structural changes as to render the diagnosis extremely difficult. I need not rehearse these symptoms; they were present in several cases where I believe there was also organic disease, and I have seen organic disease not due to injury so masked by hysterical or neurasthenic symptoms as to make the case a puzzle.⁶⁰ One symptom of the neurasthenic state is not very rare, and that is the hyperæsthesia over the spinous processes of the vertebrae.

Apart from this mixture of functional and organic symptoms we must, however, recognize the fact that there are two great classes of cases which are the result of railway accidents and other injuries,⁶¹ one where the symptoms are due, as I have endeavored to prove, to organic changes in the central nervous system; the other where the symptoms are due to functional disturbance.

As a subdivision of this latter class may be mentioned the more purely psychical disturbances, which are not rare. Naturally these are seen more markedly after railway accidents than after the accidents of ordinary life, such as falls. The horror of a scene like that at Rosindale is not soon forgotten by the ordinary spectator, and to one who has been an active participant, with the terror of sudden death or some fearful injury imminent, the effect must be still greater. Immediately after the accident at Charenton Vibert⁶² noted a pronounced psychical change in almost all of the survivors, characterized by nervous excitability, insomnia, frightful dreams when sleep did come, tremor, headache, and a sort of semi-consciousness or cerebral automatism. This condition, he states, disappeared after a short time,—a few days or weeks,—but I believe that such disturbances are often of much longer duration; at any rate I have known the psychical shock of a railway accident to be apparent for a good many months afterwards.

⁵¹ J. M. Charcot. *Leçons sur les maladies du système nerveux*, iii, 208.

⁵² B. Branwell. *Diseases of the spinal cord*, 2nd ed., p. 312.

⁵³ Ch. Vibert. *Etude médico-légale sur les blessures produites par les accidents de chemin de fer*. Paris, 1888.

⁵⁴ A. Willigk. *Autonomischer Betand nach Hirnerschütterung*. Vierteljahrsschrift für die prakt. Heilkunde, cxxviii, 19, 1875.

⁵⁵ H. W. Page. *Op. cit.*, p. 52.

⁵⁶ E. Mendel. *Ueber paralytischen Blodsinn bei Hunden*. Ref. in Neurolog. Centralblatt, 15th May, 1884.

⁵⁷ M. Bernhardt. *Beitrag zur Frage von der Beurtheilung der nach heftigen Körpererschütterungen, in specie Eisenbahnunfällen, auftretenden nervösen Störungen*. Deutsche medicinische Wochenschrift, 20th March, 1888.

⁵⁸ Quoted by Hoffman, art. cit.

⁵⁹ R. T. Edes. The somewhat frequent occurrence of Degeneration of the Postero-lateral Columns of the Spinal Cord in so-called Spinal Concussion. Boston Medical and Surgical Journal. 21st Sept., 1882.

⁶⁰ For a fuller discussion of this point see E. C. Seguin's article on Hysterical Symptoms in Organic Nervous Affections, in his *Opera Minora*, p. 150.

⁶¹ F. Kallfleiter. *Ueber Rückenmarkerschütterung nach Eisenbahnunfällen (Railway-spine)*, p. 27.

⁶² Ch. Vibert. *Op. cit.*, pp. 11, 32.

Moeli⁶³ has noted some of the more permanent psychical conditions. The patients become sensitive to sensory impressions, and they are irritable, anxious, and depressed. They are easily fatigued, weak, nervous, fearful and tremulous; they are unstable and incapable of mental application, and all thought becomes difficult. They generally have headache, which is increased by mental effort or by slight amounts of alcohol. Moreover they are dominated by the thought of the accident, which is a constant source of oppression to them and haunts them night and day. Thomsen⁶⁴ has lately described a case under the name of "acute railway brain," where there was a slightly different symptom-complex. Immediately after the accident there were maniacal symptoms, with absolute and complete anaesthesia, confusion, and delusions of persecution. Later the maniacal symptoms disappeared, the anaesthesia was less complete, but the man became lachrymose, hypochondriacal, depressed, irritable, and unable to work on account of headache and weakness.

Beside these psychical disorders there are other manifestations of functional nervous disease. I believe that hysteria (the "grand hysteria" of Charcot) is only rarely the result of injury, but there is a large class of cases which, after injury, suffer from symptoms which are a part of the neurasthenic state. After severe concussion, or the psychical trauma of injury, the victim is thrown into a pronounced neurasthenic state, which may last for years. His nervous system is utterly shattered, or, to use the phrase of the day, he is "all broken up." He is nervous, emotional, irritable, perhaps hysterical; he is overcome by trifles; he is exhausted by the slightest effort. He may present no objective symptoms, but he remains an utter wreck. There is a general weakening, and a decline from the normal standard in the functions of the central nervous system, especially in the domain of the thought, the will, and the emotions.⁶⁵ The symptoms may be milder, as in Case XII. Here, the patient finds himself changed; instead of being capable of continued exertion or strain, he is easily upset, trifles annoy him, he is irritable and quick tempered, he has lost the power of rebounding after pressure, of maintaining the calm, good-tempered spirit which perhaps he had before; his sleep is not so sound, he starts when a door slams, his children annoy him, he is fretful and fault-finding. It may be that such a man is able to work as well as before, and to earn as much money, but, if he be in some responsible position, perhaps his judgment is less sure, or his bearing toward his associates less agreeable; he is no longer a "good fellow," but nervous and disagreeable. These things, of course, are trifles, for which no jury would award damages; but they are trifles which mark an enfeebled nervous system, and it is these very trifles which are like sand in the bearings of the carriage: they decide whether life is agreeable or disagreeable, and they are trifles which may continue for years; in fact, the man may never recover his old buoyancy, his consideration for others, and his good nature.

⁶³ C. Moeli. Ueber psychische Störungen nach Eisenbahnunfällen. *Berliner klinische Wochenschrift*, 7th Feb., 1881.

⁶⁴ R. Thomsen. Vorstellung eines Falles von acutem schweren Railway Brain. *Verhandl. d. Gesellschaft der Charité-Aerzte im Berlin*. *Berliner klinische Wochenschrift*, 1st Aug., 1887.

⁶⁵ M. Bernhardt. *Art. cit.*

I have not spoken as yet of the subject of strain of the muscles of the back, upon which so much stress has been laid by Page. It is, I believe, the chief source of the marked rigidity of the spine so often seen, and by it or by "spinal irritation" is to be explained the spinal tenderness so often met with, for spinal tenderness has as little to do with disease of the cord as pain in the back has to do with renal disease. Although, however, it is often present, I believe that it usually exists as a complication and not as the sole cause of the symptoms. The first two cases reported are good examples of muscular strain, but in neither of them was that the only trouble. The first man had parasthesia in the arms, vertigo, psychical disturbances, and vesical symptoms, and the second had vesical disturbance and impotence. Page⁶⁶ seeks to ascribe incontinence and impotence to the strain alone, but I am unwilling to accept his conclusions. With strain of the muscles of the back there may be a little difficulty in emptying the bladder, but, when there is pain only on motion, I cannot see how the strain should paralyze the sphincters. In severe twists of the spine the nerves may be implicated, and it is possible that some of the nerves of the vesical plexus may be among them, yet that is by no means clear. Impotence is so common in all conditions of pain or weakness as to be of no significance. Strain of the muscles may often present such prominent symptoms as to mask the symptoms of nervous disturbance that lie beneath, yet I believe that careful inquiry will, in most cases of "concussion," reveal symptoms referable to the nervous system. As to Page's claim⁶⁷ that these cases do not recover owing to excessive doses of bromide of potassium, it is too much the argument of the railway attorney to merit consideration.

Of differential diagnosis I will say but little, because there is so much to say that it might easily fill a book; nor will I dwell upon the possibility of simulation, which has been so prominent in the minds of some writers as almost to conceal the fact that there was a real affection to be simulated. It is perhaps needless to add that all objective symptoms which indicate structural disease should be noted with care: the pupils and the optic nerve, the electrical reactions, the condition of the reflexes, the presence of tremor, especially fibrillary tremor of the face and tongue, ataxia, and Romberg's symptom. It should also be borne in mind that peripheral limitation of the field of vision, which is regarded by Thomsen and Oppenheim as one of the most constant attendants upon anaesthesia, and is considered by Charcot one of the chief stigmata of hysteria, may be the earliest recognizable manifestation of atrophy of the optic nerve.

In spite of the most rigid examination, however, there are many cases which furnish us no objective signs, notably the cases of purely psychical disturbance, and the conditions of neurasthenia, the purely "functional" affections. Here we can say only this, that if the patient's statements be true, he has suffered severe and perhaps incurable injury. If, in such cases, we had the opportunity of

⁶⁶ H. W. Page. *Op. cit.*, p. 182.

⁶⁷ H. W. Page. On the Abuse of Bromide of Potassium in the Treatment of Traumatic Neurasthenia. *Medical Times and Gazette*, 4th April, 1885.

long-continued and constant observation, we would be in a better position to judge of the patient's veracity; but it may be as difficult to decide, and may require as long-continued study, as in certain cases of insanity.

The prognosis in these cases varies, of course, with the character of the affection. Although meningeal hæmorrhage may be absorbed, other distinct structural affections of the brain or cord, of course, seldom recover. A noteworthy instance of recovery after paralysis of four years' duration is the case reported a number of years ago by Dr. Webber.⁶⁸ The prognosis of neuritis, which was present as a complication in several of the cases I have reported, depends, of course, upon the amount of injury to the nerve as shown by the electrical reactions. Strain of the muscles of the back, by itself, is an affair of long duration, and, as a complication, I have found it very persistent, lasting several years. Never having seen grand hysteria as a result of trauma, I am unable, from my own experience, to judge of the prognosis, but I see no reason why, when a person is once thrown into that state, from injury, he should recover, in the sense of getting out of the state, any quicker than one who gets into it from other causes, except that the absence of a hereditary nervous taint is in his favor. I suspect, however, that comparatively few cases of hysteria are induced by injury in persons who have not the taint. Charcot's cases are chiefly "héréditaires," but Berbez and Lyon are in doubt as to the preponderance of hereditary taint in the cases reported. Their conclusions are less decisive, however, as many persons, without heredity, may be of a neuropathic type. I find my own opinion supported by the recent testimony of Bataille: "It is apparent that predisposition is alone capable of making us comprehend the development of these attacks of hysteria." Of course in hysterical cases the individual symptoms—æsthesia, paralysis, contracture—may disappear, but the underlying state remains, capable of reproducing all the symptoms at short notice.

What has been said of the hysterical state holds true in a measure of the neurasthenic state. Where the symptoms are mild, and there is no neurotic taint, the patient's chances of recovery are of course better. Even in severer forms of neurasthenia, the prognosis is not utterly bad, although, unfortunately, there are many cases that never recover, whether the neurasthenia be of traumatic origin or not. Nevertheless in many cases, even though there is so great improvement that the patient can return to work and do as much as before, there are still the subtler changes of which I have spoken which show that the recovery is not absolute.

The prognosis of the purely psychical disturbances is also grave. Hartmann has called attention to the fact that psychoses may develop a long time after an injury, especially if it has caused headache, vertigo, irritability, and a loss of power of intellectual application, as was seen in Case IX. Kraft-Ebing⁶⁹ also shows that injury may make the brain the place of least resistance; there is increased

irritability, intolerance of heat or alcohol, and disturbance of vaso-motor innervation, which favors the development of psychoses. Thomsen also regards the prognosis of his "acute railway brain" as grave.

In the majority of cases the symptom-complex is something like this: the patient has headache and vertigo; he is depressed, irritable, and hypochondriacal, with a diminished power of application; he may have some visual disturbance, he often has a contracted field of vision and occasionally optic atrophy; there is some tremor and perhaps inco-ordination; he has æsthesia, usually not limited to one half of the body, and with it numbness and pricking; his movements are slow and weak; his tendon reflexes are exaggerated; there is often some lack of control over his bladder; and he may have pain and stiffness in the back from muscular strain. Here I believe the condition is due to a disseminated military sclerosis, or, in the early stages, to a hæmorrhagic or inflammatory process. The prognosis is like that of multiple sclerosis. With rest, freedom from excitement,—such as comes when litigation is over and the anxiety about money matters is settled,—and judicious treatment the patient may improve. The same holds true of tabes dorsalis. The ultimate prognosis is bad. Oppenheim has never met with a recovery; Gowers⁷⁰ has found a good many cases where "damages" have not brought about a cure, and considers that where there has been a late or gradual onset of symptoms there is far less tendency to arrest or subsidence than with earlier lesions; and Strümpell,⁷¹ in his latest edition, warns us against regarding these conditions as mild or insignificant. "The patients actually suffer greatly from them, and the suspicion of exaggeration and simulation is certainly much more rarely justified than it is pronounced."

The following conclusions seem justifiable:—

(1) Concussion of the spine, in the strict sense of the term, although probable, is still a matter of doubt.

(2) Muscular strain, spinal irritation, and peripheral neuritis are not uncommon complications.

(3) Injury may give rise, not only to gross mechanical lesions of the central nervous system, with symptoms coming on soon after the accident, but also to typical chronic degenerative processes of insidious onset.

(4) Injury may also give rise to various functional affections of the nervous system, including psychoses, hysteria, and neurasthenia.

(5) Hemianæsthesia is not pathognomonic of hysteria, but is found in other conditions.

(6) Psychical disturbances—anxiety, hypochondriasis, depression, emotional disturbance, and lack of power of application—may exist alone or in conjunction with other affections.

(7) The neurasthenic state is often produced by injury, but true hysteria is rare.

(8) Both the hysterical and the neurasthenic states may be superimposed upon organic disease, obscuring the diagnosis.

(9) There is a fairly typical symptom-complex, with psychical disturbances, paræsthesia, æsthesia, slow and feeble movements, exaggerated

⁶⁸ S. G. Webber. Recovery after four years' paralysis following railroad injury. *Boston Medical and Surgical Journal*, 18th July, 1872.

⁶⁹ R. v. Kraft-Ebing. *Op. cit.*, i, 166.

⁷⁰ W. R. Gowers. *Op. cit.*, i, 433.

⁷¹ A. Strümpell. *Op. cit.*, ii, 1, 164.

reflexes, etc., which is not uncommon, and is probably due to organic disease.

(10) The prognosis of these conditions is grave. Improvement is not uncommon, but complete recovery is rare.

PUERPERAL ANÆMIA, AND ITS TREATMENT WITH ARSENIC.

BY WILLIAM OSLER, M.D.,

Professor of Clinical Medicine in the University of Pennsylvania.

THE first article on pernicious or essential anæmia contributed to literature was by Dr. Walter Channing, of Harvard, who, in the *New England Quarterly Journal* for 1842, published an article with the title, "Notes on Anæmia, particularly in connection with the Puerperal State, and with Functional Diseases of the Uterus, with Cases." This was a year before Addison, as stated by Stephen Mackenzie, had first publicly taught the existence of idiopathic anæmia.

In 1853 Lebert described cases of what he called "puerperal chlorosis." In the second volume of *Archiv für Gynekologie* Gussow described similar cases, and his paper, with that of Biermer's, which appeared about the same time, 1872, aroused a deep interest in this subject.

The importance of this etiological factor in pernicious anæmia is shown by the fact that of ninety-one observations collected by Eichhorst, the symptoms in twenty-nine cases developed in connection with pregnancy; of these, nineteen occurred during the pregnant state and ten after delivery.

Of twenty-one cases of pernicious anæmia of which I have notes, nine were in women, in five of whom the condition developed post-partum. Of these cases, three recovered; of one I am doubtful, as the patient removed to a distance and has not since been heard from; the fifth case I have here given in full, as illustrative of certain important points in connection with the treatment of this condition.

Amelia T., aged thirty-five, domestic, was admitted to the medical wards of Philadelphia Hospital on 25th February, 1888. Nothing of note in family or previous personal history. In October, 1887, she was confined of her fourth child—easy delivery. She was well through her pregnancy, but in last month had suffered with bleeding piles. She was up and about two weeks after delivery, nursed the baby, but was very pale and weak. She was discharged in about six weeks. She never regained color after her confinement and had many spells of fainting, once or twice having fallen in the street. After January 1st this condition grew worse, and diarrhoea set in. When admitted she was in a condition of profound anæmia, and had severe diarrhoea with irregular fever. She was placed on Tr. perchl. Fe, grt. 20, t.i.d. She remained in bed and had not improved; and when I saw her first on 17th April she was in the following condition:—

Profound anæmia; face and general cutaneous surface has slight subicteroid hue; fat is fairly well retained, though the arms look thin, conjunctive pearly, tongue extremely blanched. She is unable to sit up on account of the fainting. Has three or four movements of the bowels daily. Pulse

120°, small, jerky. Peripheral veins not very full. Apex beat of heart at fourth interspace; visible pulsation in subclavians and carotids. There is a rough thrill with first sound. Cardiac dulness from lower border third rib. On auscultation both sounds heard at apex with much echo; loud systolic murmur, propagated to axilla; also heard very plainly along left sternal border. Distinct systolic murmur at aortic cartilage. Second sound much accentuated.

Lungs normal. No enlargement of spleen or liver. Tenderness on pressure over abdomen. Glands are not enlarged. Fever range of 2 or 3 degrees daily. Blood very watery; red corpuscles per cu.mm. 1,170,000; percentage white to red, 1:484; color by Gowers' hæmoglobmometer, about 15-18%; corpuscles extremely irregular in size and shape; considerable proportion of larger ones are oval. There are many microcytes. Several nucleated red blood corpuscles were seen.

She was ordered Fowler's solution, five minims t.i.d. for a week, and then to increase one drop each day until ten minims were reached: opium suppositories for the diarrhoea, and in a few days enemata of dried blood. Blood count on April 26th, 1,480,000; corpuscle percentage, 20. She took the arsenic well; began to improve in color, and on May 19th blood count by Dr. Henry was as follows: Red corp., 2,890,000; hæmoglobin, 40%.

Patient improved rapidly through the summer, the diarrhoea stopped and she gained greatly in weight. When I went on duty Sept. 3rd I did not recognize the patient, now a large robust-looking woman with excellent color. The apex systolic murmur persists.

We have in this case a history very similar to that which is met with in the majority of instances of post-partum anæmia. It is interesting to note that the patient, prior to delivery, had suffered with hemorrhoids, and had lost from this source considerable blood. She never regained her color after confinement, but remained very pale, and after discharge from the hospital she had many fainting spells. The condition in which I found her was extremely grave. She could not sit up in bed without fainting; and she had constant vomiting, with uncontrollable diarrhoea. I did not expect her to recover. The blood condition was typical as regards the appearance of the corpuscles. The percentage of coloring matter was, however, reduced proportionally to the corpuscles. Indeed, the individual value of the corpuscles in hæmoglobin was rather below par. In the majority of instances of pernicious anæmia the reverse holds good.

The case illustrates an important point in the treatment of profound anæmia. This patient had received twenty drops of the tincture of perchloride of iron three times a day, from Feb. 25th to Apr. 17th. Her diet had been carefully regulated, and every possible means employed to check the diarrhoea and vomiting.

Fowler's solution was begun with five minim doses three times a day, and for a time was well borne. The dose was gradually increased, and the improvement was rapid. On several occasions the sickness of the stomach was aggravated, and the medicine was interrupted for a week.

By the 19th of May she was able to sit up in bed, her appetite began to improve, the corpuscles had more than doubled in number per cubic millimetre.

the hæmoglobin had risen from 15 to 40%. Rectal injections of dried blood were, for a time, employed, but had to be stopped on account of the irritation they produced.

I did not see this patient from the end of May until I went on duty Sept. 3rd, at which time I did not recognize her. She had grown stout, her color was excellent, and she looked in robust health. The patient's recovery may be attributed to the arsenic, and I believe that if the iron had been continued she would have failed progressively, as she did during the six or seven weeks in which it had been administered.

This is by no means a unique history. To Bramwell, of Edinburgh, the profession is indebted for pointing out the almost specific action of this drug in certain cases of pernicious anæmia.

The statistics collected by Padley¹ a few years ago show forty-eight cases treated without arsenic, of which forty-two died. Of twenty-two cases treated with arsenic sixteen recovered, four died, and two improved.

Within the past few years, numerous observations have shown the powerful effect of arsenic in certain cases. Unfortunately, we do not yet fully understand why, in some instances, the drug should be well borne and prove successful, while in others the patient continues in the progressively downward course.

That the cases which we group as pernicious anæmia are very varied is now recognized by all writers on the subject. It is not to be expected that when the gastric tubules are atrophied arsenic can be curative. We need a careful study of those instances in which the drug has proved successful and of those in which it has failed.

To judge from therapeutic test alone there must be a very deep-seated difference between the two classes.

I know of nothing more remarkable in practical therapeutics, nothing so resembling specific action (unless we except iron in chlorosis and quinine in ague) than the rapid recovery of profound anæmia under this drug. As a rule it is well borne; and should be given, as Bramwell advises, in increasing doses, beginning with five minims, and rising gradually to twenty or thirty three times a day.

Puffiness of the eyelids, oedema above the eyebrows, vomiting or diarrhoea, indicate that the drug should be suspended for a time, or the dose reduced. It is interesting to note that the existence of vomiting or diarrhoea does not, however, contraindicate the employment of the medicine, as in the case here reported. These symptoms seemed to improve, for a time at least, when the arsenic was first given.

If the Fowler's solution disagrees, arsenious acid may be tried. I have known it to be well borne when the liquor arsenicalis disturbed the stomach. The drug may be given hypodermically, but in these instances of profound anæmia the tendency to hæmorrhage is so marked that the punctures may become hæmorrhagic. I have known considerable subcutaneous extravasation follow an injection. The point of the greatest importance is the fact that the medicine must be given in increasing doses, and for prolonged periods.

I find practitioners express great surprise when they hear of doses of Fowler's solution, of fifteen, twenty, and twenty-five drops three times a day. There is, I think, but one rule in the matter: give the drug cautiously until physiological effects are produced. The tolerance of the system for arsenic is well known. I have never seen serious consequences from its careful administration. Young persons, as a rule, take it better than adults. In an instance of pernicious anæmia which I reported a few years ago, the patient took twenty minims of Fowler's solution three times a day for weeks, with the most satisfactory results.

In post-partum cases recovery is always slow. It may be many months before perfect health is restored. It is well to intermit arsenic for a few weeks, but the drug should be given at intervals for many months, even when the health is apparently re-established, as there is a well-recognized tendency in these cases to relapse.

Clinical Memorandum.

A CASE OF PORRO'S OPERATION, PERFORMED ON ACCOUNT OF MULTIPLE MYOMATA. SAVING BOTH MOTHER AND CHILD.

BY S. J. MINTER, M. D.

THE patient, Mary M., aged thirty-eight years, entered the Carney Hospital on the evening of July 24, 1888. She gave the following account of herself: Family history good. Has always been well and strong. Menstruation began at eighteen years and has always been regular and painless, the flow lasting only three days. Has been married one year. For two years before marriage had some pain in the back and occasional abdominal swelling, for which she consulted a physician. Never noticed any hard mass in abdomen. She became pregnant some time after marriage, and has had no unusual symptoms until within the last few weeks, when the extreme abdominal distention gave rise to some pain and dyspnoea.

The day before her entrance she began to have occasional pain, and on the 24th the pains became severe enough to cause her to send for her physician, who, after an examination and consultation, sent her at once to the Carney Hospital, where she arrived in the evening, having travelled by rail about one hundred miles and walked from the station to the hospital, a distance of about a mile. Regular labor pains began while on the train. On entrance her temperature was 99°, pulse 96.

I first saw her on my morning visit, the following day, July 25th. She was a well developed and fairly well nourished Irish woman. Labor pains regular and frequent. Pulse quick but of good quality. Temperature normal. The abdomen was much distended and very irregular in outline. On palpation it was evident that there was something more than the ordinary pregnant uterus in the abdomen. Above the pubes could be felt a rounded mass the size of a fetal head, and extending up from this to the margin of the ribs in the right hypochondriac region was a tumor, oval in outline, and evidently the uterus. Fœtal parts could be felt through the uterine wall, and the patient said

¹ Lancet, 1883, ii.

that all foetal motion had been felt in this part of the abdomen. The foetal heart could be heard on the right side, opposite the umbilicus.

In the left hypochondrium was another mass, hard, rounded, and smooth, separated from the uterus by a sulcus, quite marked in the abdominal wall and still more distinct on deep pressure. This mass extended up under the border of the ribs, and the percussion note was flat over the whole abdomen except in the sulcus above mentioned, where it was tympanitic. Two other hard nodules could be felt through the abdominal wall, one near the umbilicus about the size of a hen's egg.

Examination by the vagina showed a solid, immovable mass, filling nearly the whole pelvis. The finger could with difficulty be passed between this and the pubis, and a partially dilated os could be felt.

After consultation with Dr. M. F. Gavin, who kindly gave me the benefit of his advice and valuable assistance during the operation, an immediate laparotomy was decided on, as there seemed no reason to believe that the firmly impacted mass in the pelvis would move up to allow the passage of the child.

Everything was prepared to do the Säger operation if it should seem possible after opening the abdomen.

An incision was made in the linea alba below the umbilicus, and the mass exposed. On introducing the hand into the abdominal cavity a firm, solid mass could be felt, springing from the fundus of the uterus and extending upward and to the left, and adherent to omentum and intestines. The incision was rapidly continued upward, and after the adhesions had been clamped and divided where necessary, the whole mass was turned out of the abdomen.

During these manipulations a rent was made in a venous bridge connecting the uterus and fibroid, which gave rise to a profuse hemorrhage, easily controlled, however, by pressure. The tumor filling the pelvis could now be seen, and was with great difficulty dragged upward sufficiently to allow the wire of the *écraseur* to be placed about the cervix, below it, but without constricting it at all. Both of the large tumors presented yellow areas on their surfaces. Two smaller tumors were situated on the front of the uterus. Hot towels were held over the abdominal wound by an assistant.

The anterior uterine wall appeared to be thin, and was not apparently the site of the placental insertion. An opening was therefore made at this point and rapidly enlarged with scissors, while the wire was at the same time tightened about the cervix. The child was easily delivered, the cord clamped with forceps and divided; the uterus, meanwhile, contracting rapidly as its contents were removed.

The hemorrhage from the uterine wound was comparatively slight in amount.

A sound was now introduced into the bladder, the wire tightened, and the uterus was amputated some distance above it. The broad ligaments were tied separately, and, after sponging out the abdominal cavity, and securing several bleeding points where adhesions had been torn, the abdominal

wound was closed, using deep silver sutures, and superficial ones of silk, leaving the stump at the lower angle of the wound. One long pin was passed through it, and then the ovaries and superabundant uterine tissue removed with the Paquelin cautery. The stump and wound were sprinkled with iodoform and dressed in the usual manner. No attempt was made to stitch the peritoneal surfaces of the stump and abdominal wall together, as they were held firmly in apposition by the tension of the edges of the wound.

Meanwhile the child, which weighed nine and one-half pounds, was crying lustily in the next room.

Child born eight minutes after beginning of incision, and the total time of operation was fifty-seven minutes. Pulse at the end of the operation, 106. The patient made an uninterrupted recovery and suffered no more than most women after a normal delivery. The child was put to the breast as after a normal labor and there was a large quantity of milk.

I have reported this case at length, as the operation is an uncommon one in this country, and is destined everywhere to give place to the more conservative one of Säger in the majority of cases.

The history of the operation is an interesting one, and especially so to Boston physicians, as the first operation on record for the removal of the uterus after Cæsarian section, was performed by Dr. H. R. Storer, in 1869. In his case the uterus was removed on account of uncontrollable hemorrhage following the usual operation, which was undertaken for obstruction caused by a uterine fibroid. Porro, in 1876, performed the operation, hoping to diminish the frightful mortality in Cæsarian section, death almost always following from escape of septic material from the uterine cavity into the abdomen. The result was a brilliant success, and in Europe especially the operation became at once popular. The tables of Harris published in April, 1885 (*Am. Jour. Med. Sci.*), show one hundred and sixty-four operations. Leaving out moribund cases, and fourteen cases where the stump was treated intraperitoneally (ten resulting fatally), will give a percentage of recovery of forty-four. Austrian operators have had the greatest success. In England there have been comparatively few operations, and Spencer Wells, in reporting an operation for obstruction by a uterine myoma, in June, 1887 (*Brit. Med. Jour.*), speaks of it as the third successful case, that is, saving both mother and child, in Great Britain.

In Harris's table quoted above, are recorded three operations in the United States, with one mother and two children saved.

In a letter from Dr. Harris kindly written in answer to my inquiries, he says: "The Porro operation in cases of fibroid tumors has rarely been performed in this country, as the ordinary or Säger methods have usually been preferred. Porro amputation has been performed by Prof. H. R. Storer, Prof. D. Hayes Agnew, Dr. Oscar H. Allis, Philadelphia, and Dr. Bernays—all women lost, and all of the children but the last. As far as I know yours is the fifth American case. Thus far your operation appears to have been the only one to save both mother and child. The ordinary Cæsarian operation has

done better than this in our country, viz., fourteen operations: women saved, four; children saved, five. In only one were both saved, and I presume they are now living—boy nearly eight."

Gastro-laparoclytrotomy, the statistics of which have been very good for an operation so seldom performed, would not have been suitable under the circumstances, as it seemed best to open the abdomen, and find out the true condition of things.

The success of the modified Cæsarian operation, now known as Säger's, has greatly limited the field of Porro's operation. The results of the more conservative operation have been so brilliant that there is now no excuse for the removal of the uterus and ovaries, except in a few cases. It has been shown that a woman can have repeated operations performed without a fatal result; and when an operator (Leopold) can save thirteen cases out of fourteen by Säger's method, Porro's operation on the one hand and craniotomy on the other are sure to become less often necessary. I had hoped to be able in this case to save the uterus, but I think that its removal was demanded by the large size and apparently necrotic condition of the myomata, and the hemorrhage from the ruptured vessels. The tumors were found on section to be already necrotic, and the deep sutures necessary to check the hemorrhage spoken of would undoubtedly have caused sloughing of the mass. In regard to the possibility of their removal apart from the uterus, I can only say that it might have been possible, but it would have added greatly to the risk of the operation.

In conclusion I wish to speak of the *écraseur* used in the operation.

It is one made for me by Codman and Shurtleff, to be used especially in the removal of large uterine tumors. The principle of the instrument is that of Billroth's, that is, it consists of a handle containing the screw, and a movable tip (*b*) with a secondary clamp. After tightening the wire as far as necessary, it is clamped on to the tip, and the handle and screw removed. The whole instrument is heavily made to give power. To prevent the wire from breaking where it passes into the tip, I had grooved wheels (*a*) put in, over which the wire runs. I had found by experiment that the wire always broke at this point, as the friction was so great.

With this instrument the wire (which is best of annealed steel) can be quickly tightened to any degree thought best, and the tip and wire left in place, surrounded by the dressing. The handle is easily reapplied whenever it is necessary to tighten

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M. D., SECRETARY.

REGULAR meeting, Oct. 22, 1888. The PRESIDENT, DR. O. F. WADSWORTH, in the chair. DR. H. R. STEDMAN read a paper on

MEDICAL ADVICE REGARDING THE MARRIAGE OF SUBJECTS WITH A PERSONAL OR FAMILY HISTORY OF INSANITY.¹

DR. GEORGE F. JELLY said this question comes to me not infrequently for decision, and I find that my advice is frequently not followed. There are two standpoints from which the subject may be viewed.

First, the personal history of the applicant for advice. If the person has had several attacks of insanity I always advise against marriage. If there has been but one attack and a seemingly full recovery, with an interval of a number of years and a good family history, I advise marriage.

The second standpoint is that of heredity. If there is a taint on both sides, *i. e.*, of both of the contracting parties, I advise against marriage. If there is a taint on one side, and that be a strong taint, or if numerous members of the family have been affected, I advise against marriage.

I recall the case of a young lady who had suffered already from two attacks and was then having a third. The parents thought that marriage might bring her relief, and asked my advice. I advised against marriage. The lady has since had four or five other attacks.

As a rule the parties have already become attached, and although they seek advice they do not follow it.

DR. S. G. WEBER said: I can speak with much less positiveness than the gentlemen who have just spoken, as I have comparatively little to do with insanity. Dr. Stedman has mentioned the necessity of giving heed to the presence of other neuroses than insanity in the antecedents of those whose marriage is in contemplation. This deserves more consideration than it generally receives. The neurotic tendency is very strong in certain families: sick headaches, epilepsy, alcoholism, and a general nervous weakness or neurasthenia, is found among the ancestors with only a very small proportion of insanity; or the person whose case is before the physician is the only one who has had insanity and yet he has come from such a family. In that case it is not desirable that he should marry.

I remember one or two cases in which I have been able to follow the subsequent history of the parties. A young lady, engaged to be married, had an attack of melancholia, not very severe, but requiring to be constantly watched. I treated her at home till she was nearly well, and then she went into the country to complete the cure. She recovered completely and remained well for more than ten years. I advised marriage. I believe her recovery was hastened by the knowledge that she could be married after she was well. Had the engagement been broken off she would probably have been much worse for a longer time, or

¹Reserved for publication.



CODMAN & SHURTLEFF,
BOSTON.

the wire. Extra tips of different sizes may be made.

possibly have become incurable. She had two children; I saw her frequently, not professionally. About ten years after her marriage, as the result of some extra demand upon her strength, in consequence of sickness or other circumstances, she had a second attack of melancholia more severe than the first, and I felt it necessary to advise the sending her to an asylum. Being so situated that I could not give her the constant attention she needed, I did not follow the case and have not learned what was done nor how she got along.

In another case a lady had been insane in earlier life: she was at Somerville for some time; she recovered completely, so there was no trace of mental disturbance. She married, had no children; she was subsequently insane again, again recovered, and finally died of phthisis.

In both these cases I think marriage was proper. The patients were probably better for it. The only doubt would be as to the effect on the children in the first case; and it is too soon to know whether any ill will come to them. As the rest of the families were healthy, we may at least hope that the children will not inherit their mother's weakness. In the second case there were no children and the family was the better for the marriage.

There are four or five parties to consider in deciding this question of the marriage of the insane,—the man and woman themselves; the children, if there are any; the relatives; and the community at large. The first three are those most interested. In many cases there are no children.

Often it is difficult to decide what is the better course; and after giving advice one way, I have questioned whether it would not have been better to have given the opposite advice.

Dr. S. J. MIXTER reported

A CASE OF PORRO'S OPERATION FOR OBSTRUCTION BY UTERINE FIBROIDS, SAVING BOTH MOTHER AND CHILD.²

Dr. JOHN HOMANS said that the reader was much to be congratulated for the success of the case. He recalled to mind a patient, who came under his care just before confinement, with a fibroid completely filling the pelvis, so that the os uteri could be reached only with the greatest difficulty. All efforts to lift this tumor out of the pelvis were unavailing, although great force was used. He had expected to be obliged to operate on the patient, but two days later, after labor had been in progress for some time, the uterus lifted the mass out of the pelvis, and on examination the os was found presenting. The child was born, but was dead.

He considered the instrument which Dr. Mixter had shown a valuable one. He had experienced much trouble with breaking of wire, and he thought the wheels were of much value in taking off the strain.

Dr. J. W. ELLIOT objected to the *céraseur* shown by Dr. Mixter, because of the difficulty in keeping it clean. He said there would be breakage of wire with this instrument as well as with others, as there had been in his own experience with the instrument. He considered Dr. Mixter's operation wonderfully successful. With such large fibroids as these, he thought that, if any operation was done, it should be the removal of the whole uterus. As to the rel-

ative value of Sanger's and Porro's operation in ordinary cases, there could be no question of the superiority of the former. The record of Leopold's fourteen cases, with but one death and all the children saved, would show this superiority.

There are, however, certain indications which call for the removal of the entire uterus:—

(1) A septic uterus, which if not removed would increase the danger of fatal termination.

(2) Those cases in which a condition exists which makes it important that the woman should never again become pregnant. Of course this can be accomplished by removal of the ovaries.

(3) In cases of large fibroids like the one under consideration.

Dr. C. M. GREEN said that in such cases the question to be decided is whether the tumor will recede. Cases which seem very threatening often take care of themselves. Such a case he had seen.

He did not think that the presence of fibroids as a rule need interfere with the performance of the Sanger operation. He congratulated Dr. Mixter on being the first to perform a successful Porro's operation in New England.

Dr. MIXTER said that he watched the case for some time, hoping to find that there was some movement in the pelvic mass, and finally decided that he should be obliged to proceed. In drawing the tumor out of the pelvis there was a rent made in the tissues about the uterus from which the hemorrhage was more abundant than from the uterine wound. This was another reason for removing the whole uterus.

Dr. HOMANS said that these fibroids caused a good deal of trouble. They interfere with impregnation, they make trouble during the period of gestation, and cause difficult and dangerous labors. He should advise women with fibroids not to marry.

THE NEW YORK ACADEMY OF MEDICINE.
SECTION ON THEORY AND PRACTICE
OF MEDICINE.

STATED meeting, October 16, 1888. Dr. LANDON CARTER GRAY read a paper on

NEURASTHENIA; ITS DIFFERENTIATION AND
TREATMENT.

He first directed attention to the fact that while functional nervous diseases are largely disregarded by the general practitioner because of the modern development of the study of them, yet the need of their proper classification was widely felt, particularly by neurological specialists. Dr. Gray did not believe that true neurasthenia was as prevalent as the followers of the late Dr. George M. Beard would have us believe. He stated that in his opinion there were three forms of neurasthenia,—the reflex, the lithamic, and the simple. The reflex form was due to vicious habits and reflexes from non-nervous organs; the lithamic was due to so-called lithæmia; and the simple form was that in which there was true nervous prostration. The points of differential diagnosis of these various forms were then dwelt upon.

But neurasthenia was also to be differentiated from a number of nervous diseases—especially the early stages of the latter—such as the morbid

² See page 435 of this Journal.

fears (for which Dr. suggested the name of functional insanity), and which really belonged to the insane diseases; melancholia, especially the mild cases, in which suicide was often committed; the early stages of mild chronic forms of insanity; neurotic conditions in which the individual is subject to migraine, hysteria, angina pectoris, or anginoid attacks; the early stages of general paresis or locomotor ataxia; and a peculiar affection recently described by Hughes Bennett, and called by him muscular hypertonicity, in which the symptoms are those of weakness and exaggerated reflexes of the lower extremities.

The prognosis of these different forms was variable, depending upon the severity of the reflex cause when present, and the possibility of thorough treatment. The treatment of the reflex form was the removal of the cause, if possible. The lithæmic form was to be treated by moderate laxatives (the most satisfactory of which he had found to be the fluid extract of *cascara sagrada*), dilute nitromuriatic acid, and, if the nervous symptoms are severe, by rest. In any event, rest was a most important adjuvant, and should be proportioned to the needs of each particular case; it being better to have rather too much of it than too little. The diet should be regulated to a moderate degree by the entire withdrawal of either starchy or nitrogenous material for a short time, and then by cutting down the starchy material permanently by at least 50 per cent. In hot weather it was sometimes advisable to cut off the nitrogenous material for several weeks; and a complete change of air was often of the greatest benefit.

In the true cases of neurasthenia the best treatment was that advocated by Weir Mitchell, by rest, forced alimentation, massage, and faradism. Large doses of iron and malt extract should also be given with this treatment; the great difficulty with which was, however, that patients are apt to be disappointed at the loss of their muscular strength on first getting out of bed. Galvanism was an agent of great value in all these forms of neurasthenia, and it should be used as early as possible, except when the case was to be put to bed. It should be applied by means of large sponges, one at the nape of the neck and one on the dorsal spine, five to fifteen milliamperes being used, and the sitting continued for from three to five minutes every day. Massage was an uncertain remedy, often irritating to the patient, and was only to be used in connection with the rest treatment mentioned.

DISCUSSION.

DR. W. R. BIRDSALL thought unquestionably that we must admit a neurasthenic element in disease; yet, at the same time, when we attempted to apply it to a group of symptoms we found that it often failed. In many individuals the nervous tendencies predominated as a result of heredity, and it seemed to him that the great danger was in assuming that we had a congenital neurasthenic condition, when the symptoms were in reality due to local causes or merely temporary conditions. The class of cases which Dr. Gray called the lithæmic would probably comprise the greater number of these, and it was important that they should not

be treated on the basis of an unstable or defective hereditary nervous system. The same difficulty was found in dealing with the insanities. If we were to use the term neurasthenia at all, then he thought we should confine it to the class of individuals who suffer from hereditary defective nervous systems.

There was one point in which he said he did not quite agree with Dr. Gray. The latter had stated that in the class of reflex cases all that was necessary to do was to remove the cause. There was often, however, an acquired condition, the result of the reflex irritation, in which the whole nervous system was at fault. The removal of a local cause, whether about the eye, the nasal cavity, or elsewhere, was not always sufficient. In many cases we are still obliged to treat the individual for other neurasthenic symptoms cropping out in different forms.

In lithæmic cases the question of rest or of exertion for the patient was one which he thought must be specially determined in each individual case. In many instances increased activity, of a kind entirely different to what the patient had been accustomed, constituted the most satisfactory means of treatment. Of the modes of exercise that might be tried, mountain climbing was undoubtedly one of the best, as it secured an amount of oxygenation and tissue-change which could be hardly secured in any other way. The majority of their patients took very little exercise ordinarily, and it was important that the exertion made should not be too violent or prolonged. Another advantage of this moderate exercise was the mental occupation which it afforded. Very few of the cases were free from a hypochondriacal element, and the exercise of the muscles in tramping, rowing, etc., offered just that mild diversion which was needed; particularly if the patient were provided with the right sort of a companion, which was quite an important point. In conclusion, he said that if we used the term neurasthenia, he thought it should be with the proviso that it was understood to comprise a group of symptoms which might belong to various conditions.

DR. WM. H. THOMSON said that the term neurasthenia was, no doubt, a very impressive word to use sometimes to patients, but otherwise he abominated it. He thought it should be placed on the same level as tonic, a word that led to more bad practice than any other in medicine, because remedies which acted in all sorts of different ways were all called tonics. When a patient came to him affected with nervous debility without appreciable organic disease, he said he always put to himself the question whether the individual was not suffering from one of four things, viz., virtual starvation; over-strain; some unnatural drain upon the system; self-poisoning. Those who were the subjects of virtual starvation (usually females), it would be found, ate no breakfast to speak of, and probably took for their other meals principally tea, bread, and sweets. They did not take sufficient food to maintain their respiration and circulation, and the rest cure was therefore the best for them. In the second class rest and food were also required, and often a change of surroundings. In the third class the drain, whatever it was, should be checked if it

could, and the patient would then get well. The fourth class, that of self-poisoning, was the commonest of all, and it was well illustrated by a case that had recently been under his care. A gentleman came to him suffering from cloudy mind in the day and insomnia at night, and he was cured with bismuth, columbo, and naphthalin. Another similar case was also successfully treated with intestinal antiseptics.

It was only very recently, Dr. Thomson said, that after paying special attention to various divisions of the organism in turn, we were coming back to that old part of the body that our forefathers used to regard as of so much importance, the bowels. At all times fermentations were going on in the intestines, and at the best moments of our lives putrid ptomaines were going into the kidneys, the liver, and other organs. The trouble with such patients as he was now speaking of was that they were suffering from prolonged self-poisoning, resulting from a deficiency of the natural antiseptics of the intestines, viz., the secretions. This was the lithæmic neurasthenia of Dr. Gray. The pulse was often full or of high tension, and the urine acid and of high specific gravity; while in the other three classes to which he had referred the pulse was very weak and compressible, and the urine usually of low specific gravity, and either alkaline or neutral in reaction.

As to the question of therapeutics, he had faith in only one real cure, and that was camping out in a tent in the woods.

Dr. A. JACOBI said that of late it had been the tendency in medicine to get rid as far as possible of all names given to symptoms merely, and neurasthenia was of this class. We could speak of it properly as only a symptom, and it was a symptom common to so many conditions that the sooner it was gotten rid of the better. It was not simply weakness alone; we had been told that it was a chronic malnutrition of the nervous centres, due either to various adventitious causes or to a hereditary tendency. But congenital neurasthenia did not exist alone. With it was associated weakness of the circulation and the whole constitution. In any case of so-called neurasthenia, then, it should be our endeavor to make a diagnosis, if possible, of the original condition that gave rise to the symptoms met with.

Dr. A. D. ROCKWELL said that although unprepared to discuss the question at length, he could not refrain from the statement that he believed in the existence of neurasthenia just as much as he did in that of malaria. The term was, with limitations, a valuable one, although he thought it had been very much abused. The most important point of differentiation was between primary nervous exhaustion and lithæmia. As to the manner of dealing with the lithæmic condition, the only way was for the subject of it to find out for himself what he could eat and drink and how he must work.

Dr. S. BARTON said that he was convinced that there was a complex of symptoms which was best designated by the term neurasthenia. In its treatment the principal indication was to promote tissue-change, and there was perhaps no better method of securing this than hydro-therapy. Many of his patients suffering from this trouble he directed to

take a cold plunge bath every morning; care being taken to secure prompt reaction. He still believed in the term tonic also, and he thought the cold plunge one of the most valuable tonics that we had.

Dr. E. D. FISHER thought the word neurasthenia would be a very convenient one to retain until our knowledge of nervous diseases had become more complete than it was at present. The principal objection to its use was the danger of mistaking for the condition it implied some of the grave organic diseases, especially in the incipient stage. It was, therefore, necessary to be on our guard in this respect. As regards the treatment of neurasthenia, since it represented merely functional disturbances, so far as we knew, uniformity was impossible, and each case must be handled according to its individual circumstances.

In closing the discussion, Dr. Gray said that one of his objects in writing the paper was to elicit such an expression of opinion from various observers as had now been given. On the whole, it seemed to him that there was a very immaterial difference between his own standpoint and that of some of the speakers who objected to the use of the term neurasthenia. There were certainly many symptoms not of organic origin which one could not classify without resorting to some such expression. It was, therefore, of practical service to retain it, and the subdivision into the three classes which he had indicated seemed to him a convenient one. In the future such advances would no doubt be made that many points which are now obscure will be cleared up, and many of our present views would accordingly be modified.

Prof. Beclard (drawing cigar from pocket): "Does tobacco make you sick, young man?"

Fellow-traveller (with manifest disgust): "Yes, sir; it nauseates and gives me a frightful headache."

Prof. Beclard (lighting cigar): "My advice, then, is for you never to smoke."

—An English contemporary, commenting on the efforts of cremation societies, and the vigorous attempts which are made to popularise this method of the disposal of the dead, says that cremation evidently makes very little progress. According to an official statement only fifty furnaces, the purpose of which is to reduce human bodies to ashes, are to be found outside Asia. Of these, twenty are in Italy, one in Germany, one in England, one in Switzerland, one in France, and the rest in the United States. This record, it must be conceded, can scarcely be interpreted into any sign of encouragement those who devote much of their time to advocating the claims of cremation over other methods of disposal of the dead. According to the *Flamme*, which is the official organ of the Berlin Cremation Society, the total number of bodies cremated in the various countries to the 1st August is as follows:—Italy, 998; Gotha, 554; America, 287; Sweden, 39; England, 16; France, 7; Denmark, 1. The members of cremation societies number 3012 in Sweden; 1326 in Denmark; 1326 in Holland; 612 in Germany; 580 in Italy; Hamburg, 438 and Switzerland (Zurich), 390. There is a curious disparity between the number of members in Italy and the proportion cremated.

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THE TREATMENT OF VALVULAR DISEASES OF THE HEART.

UNDER this head, Dr. J. M. Da Costa contributes an article to the *American Journal of Medical Science*, for November. He emphasizes the view, in opposition to still widely prevalent teaching, that the precise valve affected is not, with our present resources, the key-note to the treatment of valvular diseases. Much more important is it to regard the state of the muscular fibre; the size of the cavities; the condition of the arteries, veins, and capillary system; the secondary results of the cardiac lesion; the control of the nervous system. The first two of these considerations are the most important. The treatment of a valvular disease that is "compensated"—where the increase in size of the heart muscle is just enough to overcome the valvular imperfection—in which there is no dropsy or respiratory disturbance, and exercise does not produce inordinate distress, is widely different from that of commencing failure of the heart muscle with circulatory embarrassment. In the former case we are to endeavor to keep the heart muscle and cavities in a healthy condition by simply regulating the patient's life and habits; in the second case the stretching, faltering heart calls for support, and is rallied, made regular, and kept for a long time performing its functions admirably, by the persistent employment of moderate doses of digitalis. Dr. Da Costa emphasizes the fact that the same valvular disease will, at different times, according to the varying state of heart muscle and cavity, require very varying treatment. Cases have come under his observation in which the active state of the circulation, the marked hypertrophy, the cardiac uneasiness, were always greatly relieved by aconite and aggravated by digitalis, which produced a sense of cerebral

uneasiness and weight; such cases, however, when the heart began to weaken, were for a series of years markedly benefited by digitalis.

Patients of the class above alluded to, with slowly deteriorating compensation, are usually those in whom small doses of digitalis act most favorably. The quantity need rarely be more than ten drops of the tincture twice daily, to be kept up till the effect on the heart and pulse is perceptible, and then suspended, to be resumed according to circumstances.

There is another cardiac condition encountered in valvular diseases in which digitalis is the principal remedy, and in still larger doses. "It is when the compensatory hypertrophy is gradually lessening in proportion to the valvular defect, where the nervous system is becoming gorged, the breathing much oppressed; the internal organs congested; where the feet are beginning to swell, the pulse is rapid and compressible, the heart often fitfully excited; it is when the symptoms become rather suddenly aggravated, and a sense of weight and distress in the cardiac region suggests that the organ does not fully empty itself, that larger doses of digitalis will show a wonderful influence." Here the writer would give as much as fifteen minims of the tincture every second or third hour. But while this remedy is given in these large doses, the patient must be kept at rest. The mischief once checked, smaller doses will again show their good effects. This condition is most often met with in mitral complaints, and in advanced stages of aortic regurgitation.

In the remarks above made it is assumed that the muscular fibre of the heart is not in a state of degeneration. When, however, a granular, fatty, waxy, or fibroid change takes place, the treatment is still the same, though there should be a freer exhibition of tonics and stimulants. We do not now get the same results from digitalis or kindred agents, and arsenic or strychnia is always worthy of a trial. These are difficult cases to treat, and difficult cases to recognize. The age, the history which shows a likelihood of fatty or other degeneration, the aspect of the patient, and the very fact that the heart muscle does not seem to respond to cardiac tonics give a clue to the true character of the affection.

Prof. Da Costa speaks of another class of cases in which excessive growth of the heart muscle and strong action call for aconite and veratrum. This state is oftenest met with in aortic regurgitation. "The impulse is extended, forcible, and forcible out of proportion to the cardiac percussion dulness; there is often throbbing of the vessels of the neck, dull headache, tension in the pulse, and a feeling of constriction in the chest. Aconite is pre-eminently the remedy; it diminishes the blood pressure

in the arterial system and gives great relief." Two-drop doses of the tincture are given every fourth or sixth hour for the first few days, then only twice a day. Da Costa speaks highly of a combination of one-drop doses of aconite tincture, with three of tincture of veratrum viride, and seven of tincture of ginger; this, he says, is an admirable sedative, and does not sicken.

The writer next alludes to cases, especially of mitral narrowing, in which the extreme irregularity presents a striking feature. These are mostly cases with imperfect or weakening compensation, and therefore to be benefited by digitalis and remedies of that class. As an adjunct to this treatment, belladonna may be used, and pushed to its constitutional effect.

The condition of the arteries, veins, and capillaries often calls for treatment. The turgescence of the veins in instances of dilated right heart and dropsy is always remarked. But there is the equally important state of the arteries, arterioles and capillaries, and the appearance of the skin and network of fine vessels in it, by which we can judge of the more minute circulation. This condition of the vascular system demands treatment equally with that of the heart, but digitalis contracts the arteries and arterioles, and the indications are to get with increased cardiac power a freer flow in the vessels without resistance from them. No remedy, says Da Costa does this. It is claimed that strophanthus has this property; but this is not proved, and recent researches really suggest the contrary. Nitro-glycerine and the nitrites produce rapid and great dilatation of the vessels but have little or no effect on the muscular fibres of the heart. Belladonna has the same effect as nitro-glycerine, less on the vessels, rather more on the heart. He suggests a combination of nitro-glycerine or atropia with digitalis in the right proportions, to meet the special indication, and thinks that here is a rich field for future research.

With reference to atheromatous disease, as well as to rheumatism as a causal agent of valvular disease, we have no remedies enabling us specially to meet the causal indications. We possess, says Da Costa, no remedies to influence the results of rheumatic endocarditis, when the acute stage is fairly over, nor have we any "solvents" or the means to influence degenerative states.

Some judicious directions are presented as to food, which should be "nutritious, easily assimilated, but never taken in large quantities at a time." "There is no objection to the use of tea and coffee if not excessive, and small quantities of alcoholic drinks are rather beneficial than otherwise in inadequate or faltering compensation. Except

for gouty persons, we may hold to this axiom, that it is right to allow alcohol in cases in which we think digitalis applicable."

Regulated muscular exercise, especially on foot, is of use, as it sustains the nutrition of the heart muscle. It must be kept within the limits of not producing shortness of breath, and ought not to be undertaken in the face of a strong wind. Having had some experience with the difficulty people with valvular heart affections have in living in mountainous regions, as in Colorado, Dr. Da Costa is not favorably inclined toward Oertel's hill-climbing and mountain-climbing plans of treatment. Keeping the nervous system as quiet as possible, and being cheerful, are great aids in holding the cardiac malady at bay. Absence of worry means generally long life; worry, short life.

In the treatment of the secondary results of cardiac affections, Da Costa recommends ammonia, brandy, small doses of digitalis with bromide, a course of cannabis indica, etc., for palpitations; the iodides, with aconite plasters, where a constant sense of uneasiness or actual pain "is the striking symptom, and especially nitro-glycerine," which so lessens blood pressure, and diminishes the resistance the heart has to overcome; caffeine, "than which there is no better diuretic in cardiac cases," for renal insufficiency and scanty diuresis; purgatives and small doses of nux vomica for dyspeptic symptoms, due to catarrhal condition of the stomach and bowels, so common in valvular diseases. Purgatives, he says, are not given as often as they ought to be in valvular disease of the heart. They not only remedy the stagnation in the portal circle and remove the catarrhal condition, but they lessen the liability to dropsy.

Among the substitutes for digitalis, Dr. Da Costa regards caffeine, strophanthus, and adonidine as the best. From adonidine in one-tenth to one-fifth of a grain doses, three times a day, he has witnessed some admirable results, but more in cases of functional than of valvular disease of the heart. Strophanthus he has seen to favorably influence irregularity and dyspnoea, but as a diuretic it is inferior both to digitalis and caffeine. From convallaria he has had, in common with others, disappointment in valvular affections, though he has found it of value in functional disorder. Cocaine has proved to be a cardiac stimulant and tonic not devoid of diuretic powers. Chloride of barium in one tenth of grain doses in pill form has shown itself to be "a general tonic and a cardiac tonic, a remedy that increases the tone in the blood vessels, and a fairly good diuretic." Among its properties, it has been found to lessen cardiac pain.

THE CASE OF THE LATE EMPEROR
FREDERICK OF GERMANY.

WE had hoped to be spared the necessity of editorial comment upon this unfortunate and unedifying subject, but with the receipt of the official reports and manifestoes giving all the light which is likely to be thrown upon it, and an insight into some issues which we would gladly not have had, some reference to them is unavoidable.

The perusal of the published documents¹ of the German and English physicians concerning the fatal illness of the late Emperor, now before the public, has been a source of sorrow to every one who has the least regard for the good faith and the good name of the medical profession.

One encounters in these volumes such storms of ill temper and bad breeding that one is tempted at the very outset to discredit all the statements of all the combatants. Anger and accuracy are incompatible. We shall, therefore, leave the loathsome and inhuman personal thrusts and stabs, which are scattered through these pages, in silence, and from the mass of words and vituperation endeavor to gather a few grains of scientific truth.

The history of the Emperor's malady is complete. That he died of cancer of the larynx there is no doubt; there is also no doubt that it was so diagnosed by his German physicians at a time when it was all-important to recognize it, namely, in its earliest stage. For it is at this stage that we must act promptly and vigorously if we are to do anything of a surgical nature with a view to the preservation of life. Granting that the account of the appearances in the larynx at this stage (May, 1887), as given by that able clinician and laryngoscopist, Prof. Gerhardt, be correct, it is inconceivable how any one familiar with the manifestations of disease in the larynx should not have confirmed his diagnosis of malignancy. Sir Morell Mackenzie, however, of London, an acknowledged authority on diseases of the larynx, examined the patient at that time, and strongly doubted the malignant nature of the disease. If we turn now to Mackenzie's account of the Emperor's illness, and look at the sketch of the growth (p. 13) when first seen by him, we should say that he was quite right in not agreeing with the diagnosis of cancer. And if we turn over a few

more pages and inspect the sketch on p. 47, which shows the appearance of the larynx after complete removal of the growth, we are free to confess that it is as healthy a looking glottis on paper as we have ever seen. Here, then, we meet with our first dilemma. We leave Prof. Gerhardt's description feeling convinced that the disease can be no other than cancer, and turn to Sir Morell's well-executed diagrams and feel equally convinced that cancer did not exist, and no longer wonder that Prof. Virchow failed to find evidence of malignancy or that he did find a *pachydermia verrucosa* or any other unheard-of complaint. The autopsy, however, showed that the disease was cancer. We feel that the microscope played rather an unfortunate rôle in the early history of the Emperor's malady. The course of a disease and its clinical aspects are the important features in a case of this nature. It is what we see, not what the microscope sees, that should influence our judgment and determine our actions. It is a possible thing, and in certain instances by no means a difficult thing, to recognize cancer of the larynx when it is limited to a very small area of the organ. We are of the opinion that the case of the late Emperor was just one of these instances. The Germans knew perfectly well what disease they had before them. The English apparently did not. In this case, at least, the general practitioner proved himself more expert and a better observer than the specialist.

The practical question now is, What is the proper treatment for cancer of the larynx when it is limited to a small portion of the larynx — the condition, in fact, of the Crown Prince in May, 1887? We all know what happened in his case, and what inevitably will happen in all similar cases when the disease is allowed to run its course.

Would the result have been different had the advice of the Germans regarding treatment been adopted? They showed their wisdom in recognizing the true nature of the disease. Was their suggestion to split the thyroid cartilage, whereby easy access could be had to the seat of the trouble, and to thoroughly scrape away the diseased tissues, equally wise? This question can be answered in twenty, or perhaps in ten, years from now more accurately than it can be at present. We incline to the belief, however, that this counsel given by the Germans indicated, under the circumstances, the scientific and proper course to have pursued; and for these reasons: The Crown Prince was apparently in superb physical condition; thyrotomy is not a grave operation in itself; all the advantages of antiseptic surgery were at hand, and the operation would have been performed by a skilful and able surgeon; other men have been cured, why not this one in

¹ Die Krankheit Kaiser Friedrich des Dritten, dargestellt nach amtlichen Quellen und den im Königlichen Hansministerium niedergelegten Berichten der Aerzte Prof. Bardeleben, Generalarzt I. Kl. und Kgl. Geh. Ober-Med. Rath in Berlin; Prof. von Bergmann, Generalarzt I. Kl. und Geh. Med. Rath in Berlin; Dr. Braunmann, erster Assistent der Kgl. Chirurg. Klinik in Berlin; Prof. Gerhardt, Geh. Med. Rath in Berlin; Prof. Kussmann, Geheimrath in Strassburg i. E.; Dr. Landgraf, Stabsarzt in Berlin; Dr. Moritz Schmidt, Sanitätsrath in Frankfurt a.-M.; Prof. Schrötter, Vorstand der Laryngol. Klinik in Wien; Prof. Tobold, Geh. Sanitätsrath in Berlin; Prof. Waldeyer, Geh. Med. Rath in Berlin. 8vo, pp. 103. Kaiserlich Reichsdruckerei, Berlin, 1888.

² "The Fatal Illness of Frederick the Noble." By Sir Morell Mackenzie. London: Sampson, Low and Co. 1888.

the prime and vigor of life? The advisers of the Crown Prince were justified, we think, in running the slight risk of a thyrotomy to rescue such a great life. The result, at all events, could not have been worse than that of the palliative course pursued, and there is a possibility that the life of the best and noblest Hohenzollern that has ever lived might have been saved.

We are glad here to record the one point upon which all the medical advisers of the late Emperor agree. They all bear testimony to his noble character, fortitude, and the uncomplaining and patient manner with which he submitted to his fate. This is the one soothing feature of these volumes. Considering the length of time the physicians were in contact with this gentle and good man, it is to be regretted that they did not absorb at least a little of his virtue.

TREATMENT OF INCONTINENCE OF URINE BY RHUS AROMATICA.

RHUS AROMATICA has recently come into vogue in France as a remedy for incontinence of urine in atonic states of the bladder. According to *La Thérapeutique Contemporaine*, Drs. Max, Burvenich, Numa, and Hamon have all tried it in this disorder, and have obtained signal successes where all other remedies have failed.

Max prepares a tincture by macerating two hundred grammes of the bark in a thousand grammes of alcohol at 80°. The dose is from ten to fifteen drops three times a day. Max claims nine cures out of eleven cases. Burvenich obtained a cure in eleven out of thirty-three cases; ten of the remaining twenty-two were considerably benefited. The good effect of the medicine is not felt till the fifth or sixth day; sometimes satisfactory results are not perceived till at the end of three or four weeks.

According to Burvenich, *Rhus aromatica* constitutes a powerful tonic similar to nux vomica, for in a man aged seventy-nine years, affected with incomplete paralysis of the bladder without stricture of the urethra or hypertrophy of the prostate, *rhus aromatica*, in the dose of thirty drops a day, greatly facilitated micturition by giving tone to the bladder. Numa also asserts that it excites the unstriated muscle of the bladder as well as of the uterus and the rectum. He gives the tincture to children from two to six years of age in the dose of ten drops twice a day, and to older children in the dose of fifteen drops night and morning. The tonic effects do not last, for the paresis of the sphincter vesicæ muscle returns when the medicine is discontinued.

Hamon has also testified to the efficacy of *Rhus toxicodendron* in certain cases of incontinence of

urine, with atony, in young persons. He gives twenty drops at bedtime in a little simple elixir, or other convenient menstruum. This use of *Rhus toxicodendron* is not new.

The *Rhus aromatica* is the fragrant sumach, which is indigenous in this country, growing in dry rocky soil from Vermont to Michigan, Kentucky, and westward. It is a low straggling bush with sweet-scented leaves. The *Rhus toxicodendron* is the well-known poison ivy.

MEDICAL NOTES.

The *Medical Press* reports the case of a young woman, of a highly nervous temperament, who had not menstruated for ten years, since the sudden arrest of the flow consequent on a fright. This suppression reacted on her, and made her a confirmed invalid. She had kept her bed for several years. The patient was anesthetized, and Dr. Chiarleoni made an incision in the median line extending through the epidermis only. This was sutured and covered with an antiseptic dressing. The result of the operation was surprising. On the third, fourth, and fifth days after the operation there was a copious discharge of blood from the uterus, with lumbar and pelvic pain. The ultimate effect was a marked amelioration of the patient's general condition, and she was soon able to get up and take exercise.

—Cooking delicacies for the sick is a comparatively new but very popular industry, added to the list of peculiar employments by which women are enabled to earn their living in New York, according to the *New York Sun*. One of the consignors of the Woman's Exchange has entire charge of this special branch of cuisine, and has coined dollars for herself, besides carrying comfort to many sufferers. At the suggestion of friends she began the cooking of delicacies in which long practice had made her an adept. Now the invalids in the richest houses on the avenue, the boarders at the Hoffman House, and the delicate friends of wealthy patrons among the poor, alike enjoy the same broths and teas, ice-land moss, and blanc mange she prepares, and which can be found nowhere else so delicious in taste. Beef tea, chicken and mutton broth, and beef juice, with various similar delicacies, may be had at any time on a day's notice at the Exchange, and in cases of emergency they are often prepared by the lady during the night. The most accomplished and high-priced cooks almost invariably fail in cooking for invalids, and boarders at even the best hotels and boarding-houses cannot be supplied with the appetizing and nourishing food essential to invalidism.

Many physicians in the city, understanding the importance of suitable diet for their patients, rec-

commend to them the food prepared by these women who are by long practice proficient in the art of serving. Another woman makes her living preparing calf's-foot jelly for the sick. This requires a longer notice than the broths, as she sometimes experiences some difficulty in obtaining the calves' feet in the up-town markets, which necessitates a half day's journey among the down-town shops.

Still another gentlewoman prepares various kinds of breads, — brown bread, graham, and health food bread. A wealthy lady in town has kept an old coachman alive on the beef tea made by the gentle spinster at the Woman's Exchange all through the past summer, and another ordered rolls and chicken broth sent to a sick servant for many weeks, until her recovery was announced. A lady in Washington, learning of the illness of a poor friend, ordered nourishing dainties sent to her through a long illness.

Miscellany.

A SIMPLE WATER-FILTER.

Dr. Castle says (*New York Medical Journal*) that for a long time he has used a simple contrivance for filtering water, which has been serviceable and at the same time inexpensive. He took an ordinary percolator and packed the outlet with absorbent cotton so tightly that the water could only flow in drops. By means of a piece of copper wire for a bale, it was suspended from a hook over the sink. As often as necessary, water is poured into the percolator, and a receiving vessel is placed under the outlet. Whenever the cotton shows much discoloration (a thing which is easily observed, owing to the percolator being of glass), it is replaced with a fresh portion. The filtering medium being always under observation, there is little risk of contamination of the water by accumulation of filth.

TOBACCO AND BACTERIA.

The *Lancet* remarks that the popular belief in the germicidal virtues of tobacco-smoke (which has been revived in connection with the alleged immunity enjoyed by the cigar-makers of Florida during the recent yellow-fever epidemic) has received some confirmation in the scientific researches of Dr. Vincenzo Tassinari, first assistant of the Hygienic Institute of Pisa University. In a preliminary note on his experiments (*Centr. f. Bakteriologie*, Bd. iv. No. 15) he describes the simple apparatus he designed to test the effect on pathogenic organisms of exposure to the fumes of tobacco. The apparatus consists of a chamber formed by two glass funnels placed horizontally, and connected together at their mouths by paraffin. In this chamber is suspended from a loop of platinum a small piece of linen, with the threads of its lower extremity immersed in a culture fluid containing the microbes. The chamber is connected at one end by a tube with a cigar or cigarette, and at the other, by a tube containing a plug of cotton wool (to serve as a filter), with the mouth of the experimenter. The smoke as it is exhaled, therefore, thoroughly surrounds the linen

soaked in the culture fluid, and after the experiment, which lasts from thirty to thirty-five minutes, involving the consumption of from three and a half to four and a half grammes of tobacco, the chamber is opened and the linen allowed to fall into a test tube containing fluid gelatine. Control experiments were also, of course, made. The micro-organisms subjected to this treatment included — 1, *Spirillum cholerae asiaticæ*; 2, *Spirillum Finkler-Prior*; 3, *Bacillus anthracis*; 4, *Bacillus typho-abdominalis*; 5, *Bacillus pneumoniae* (Friedländer); 6, *Staphylococcus pyogenes aureus*; 7, *Bacillus prodigiosus*. The result varied with the variety of tobacco and the kind of microbe, but in every instance there was marked (sometimes very great) delay in the development of colonies in the gelatine as compared with that of organisms dealt with similarly, but without exposure to tobacco-smoke. Indeed, the development of some was entirely prevented. For example, in the third series of experiments cited, where large Virginia cigars were used, the development of *Bacillus prodigiosus* was delayed for seventy-two hours, that of *Staphylococcus pyogenes aureus* for seventy-three hours, of *Bacillus anthracis* for ninety-seven hours; whilst of the others mentioned above no development of colonies took place after from a hundred and twenty-eight to a hundred and sixty-eight hours. Dr. Tassinari attributes these results to the chemical action of the ingredients of tobacco-smoke. He proposes to extend his researches more fully, both as regards the effect of different kinds of tobacco upon these and other micro-organisms, especially the tubercle bacillus, and to determine the time of exposure as well as the amount of tobacco necessary to produce the full effect. He hopes also to ascertain what substance or substances are responsible for the germicidal action.

THE FORTHCOMING REPORT ON MARRIAGE AND DIVORCE IN THE UNITED STATES.

The thoroughness with which statistics are collected under the direction of Col. Carroll D. Wright by the Labor Bureau at Washington is well illustrated, says *Science*, in the gathering of the facts in regard to marriage and divorce in the United States, that are to be embodied in a special report that will be ready early in January. The special agents engaged in this work have obtained the figures from every court in the country having divorce jurisdiction. When it is stated that there are more than twenty-seven hundred of these courts, and that the period of investigation extends over the ten years from 1876 to 1886, the magnitude of the work may be imagined. The report in each case will give the ages of the persons divorced, the cause for which the separation was granted, state whether the husband or wife obtained the decree, the number of children, the place of marriage, and the migration of the couple since then. This latter inquiry is made in order to show whether the change of residence was *bona fide*, or merely for the purpose of obtaining a divorce. Statistics showing the length of time the marriage lasted, and other facts that may tend to throw light on the subject, have also been collected. The number of marriages will be given by counties for the same period, so that

the ratio of divorces to marriages may be seen. There will be added a synopsis of the divorce laws of every State, and the statistics of divorces in the principal countries of Europe. No such investigation for original information has ever been made in any country, and there is none in which it could be made. If it were possible for such a force of experts to be organized elsewhere, as Colonel Wright commands the services of, to make the inquiries, prejudice, red tape, and respect for established institutions would prevent them from obtaining the information they sought. Americans have reason to feel proud when they remember that nowhere upon the globe is there an organization, public or private, so well equipped for the collection of social statistics as the United States Labor Bureau.

Correspondence.

ANTIPIRYNE AS AN ANALGESIC.

MR. EDITOR, — In the excellent "Report on Progress in Therapeutics," by Drs. Williams and Delano, published in your Journal of Oct. 11th and 18th, no mention is made of the use of antipyrine in congestive dysmenorrhœa. In my experience (*Medical Record*, Oct. 20th) this drug is most efficient in migraine, and following this in the pains of dysmenorrhœa.

It is also stated that "in relieving pain it does not produce sleep, but, for the relief of pain and to produce sleep as well, antipyrine and chloral make a good combination." This is contrary to my experience, in which it produced sleep in a side of one hour in all but two cases; even these felt drowsy and wished to lie down.

Two cases coming under my care since the notes were forwarded to the *Record* will illustrate these points.

Case I. Dysmenorrhœa of several years standing. The patient experiences severe uterine pains, which are followed by violent pains in the region of the occiput. These give rise to delirium, which usually lasts for twelve and sometimes for twenty-four hours. When called to see the case I was informed that nothing gave relief: that morphia was generally used hypodermically, but only produced a condition of muttering delirium and never gave rise to quiet sleep.

As the patient had never taken antipyrine, I gave ten grains, which in one-half hour lessened the pain and caused a slight doze, from which the least noise awoke the sufferer with a start. At the end of that time the medicine was again repeated. Inside another half-hour the patient had fallen into a quiet sleep, from which she awoke to find her pains departed. No medicine had ever produced so happy a result before.

Case II. Boy of about eleven years ate some uncooked peas. In a short time his stomach became distended so as to be visible through the integument, and when percussed sounded like a drum. Periodic pains had come on, during which he cried out so as to be heard for one hundred yards. One ten-grain dose of antipyrine was given. Inside one half-hour he had ceased to cry out, and passed into a short sleep, from which he awoke completely relieved.

I am, Sir, yours very truly,
P. R. EGAN,
Asst. Surgn. U. S. Army.

PARIS LETTER.

(From our Special Correspondent.)

PARIS, 26th October, 1888.

MR. EDITOR, — Potassophobia is a term that may be applied to the fear entertained against the salts of potash,

as they are considered toxic. It is for this reason that the iodide of sodium is frequently substituted for the iodide of potassium. But this fear, according to Professor Germain Sée, in a recent communication to the Academy of Medicine, is utterly without foundation. The salts of potash, he says, are toxic when injected directly into the circulatory system; they then have an undeniable action on the heart; but taken by the stomach they have no injurious effect. He points out that the debilitating effects of potassium salts on muscular structures are also found, though in a slightly smaller degree, in sodium salts. Bunge has calculated that one hundred grammes of potatoes contained six grammes and twenty centigrammes of potash. An Irishman consumes per day from twelve hundred to thirteen hundred grammes of potatoes. He absorbs in consequence from seventy-two to eighty grammes of potash, comparing which with the amount of potash contained in the two or three grammes of the iodide of potassium daily prescribed to patients, that contained in the latter is insignificant. In the treatment of affections of the heart and of the lungs, M. Sée prefers the iodide of potassium to the iodide of sodium, acting as it does, as pointed out by Traube, in a most distinct manner on the muscular system and on the nerves of the heart.

Dr. Dujardin-Beaumetz regards phenacetine as superior to antipyrine for the following reasons: it is more active, there is absence of toxicity and of accessory unpleasant phenomena, its insipidity is perfect, its analgesic and antithermic properties are equal and perhaps superior to those of antipyrine. Like the latter, however, phenacetine does not act on the duration nor on the course of a malady.

At a recent meeting of the Academy of Medicine, Dr. Perrin read a report on a note by Prof. Chauvel, of Val-de-Grâce, on two cases of tardy extraction of projectiles lost in the bones of the face, which had been considerably injured. In both the cases the bullets were allowed to remain in the deeper parts of the face for three and four years respectively; the consequence was that the bullets could not be reached when the surgeon searched for them in order to extract them, as their presence had caused considerable damage. From these two cases Dr. Chauvel has arrived at the practical conclusion that it is advisable to make a search for foreign bodies or projectiles, whatever they may be, immediately after the wound when it is possible, and when this search is not exposed to any serious danger. There is an exception to this rule only for penetrating wounds of the skull, of the chest, or of the abdomen.

Dr. A. Ollivier read a note on the contagiousness of the vulvo-vaginitis of young girls. This form of the etiology of the disease has been scarcely noticed by authors, although Dr. Suchard, of Lavey, has lately drawn attention to it, and he indicated that the bath in common was one of the modes of this contagion. Dr. Ollivier relates cases of contagion having been propagated from one child to another. Two little girls having been treated for a vulvo-vaginal discharge at the hospital for children, fifteen other cases in the same ward soon followed. Dr. Ollivier, considering this affection as being contagious, took precautionary measures for the protection of the healthy subjects, and the epidemic was completely arrested. It was possible, said Dr. Ollivier, that the contagion was effected by the hands of the *infirmières* (sick nurses), by the sponges, by the vases, and the seat of the privies. This was probable, because there were no cases of vulvo-vaginitis in the ward before the admission of the two little girls referred to, and there were none after the prophylactic measures had been carried out. As regards the nature of the contagion, Dr. Ollivier is engaged in experimental researches, and will in due time communicate the result to the Academy.

Dr. Lutaud, in a note in the *Revue Obstétricale* on the treatment of the retention of the urine in lying-in

women, writes that all practitioners have observed the frequency of this complication, which, however, does not present any gravity, as it is sufficient to practise catheterism for a few days to remedy it. But the use of the catheter is far from being inoffensive. It might, in spite of all the antiseptic precautions, produce infection of the bladder. It is admitted by many that the catarrh of the bladder and the cystitis which is so often observed after parturition are the consequence of catheterism. Schultze and Freund have lately drawn attention to this subject. They think that the retention of urine is not due to parturition, but simply to the fact that the parturient patient had not learned to pass her water in the dorsal decubitus. According to these authors, the woman ought to acquire the habit of urinating in the position of dorsal decubitus for some weeks or even the few days which precede parturition. Retention of urine will thus be avoided in parturient females. Dr. Lutaul

states that since he became acquainted with the above observation, he caused his parturient patients to urinate in the dorsal position, and he has never since observed a single case of retention of urine in such patients.

In the *Petit Journal de la Santé*, Dr. Sully gives the following advice to suckling women: Abundance of substantial food, which should be easily digested. This food should contain a considerable quantity of albumen, also of salts of lime, of soda, and of potash. On this account, lentils deserve the preference. After having tried alcohol in all its forms, the author concluded that every variety of alcoholic drink is injurious as much to the mother as to the child. It is true that the absorption of a glass of beer or porter increases the afflux of milk to the breasts, but this milk is watery, poor in nutritive principles, and not at all comparable to that which is produced by the digestion of substantial nourishment.

REPORTED MORTALITY FOR THE WEEK ENDING OCTOBER 27, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhoeal Diseases.	Typhoid Fever.	Diph. & Croup.
New York.....	1,526,081	673	241	16.05	16.80	1.95	2.70	4.80
Philadelphia.....	1,016,758	337	88	13.63	15.95	1.16	3.48	6.38
Brooklyn.....	751,432	296	101	23.12	12.92	2.72	4.08	10.54
Chicago.....	760,000	277	102	21.96	9.36	1.80	5.04	11.16
St. Louis.....	449,160	159	55	22.44	6.60	2.64	1.98	9.24
Baltimore.....	437,155	137	58	13.44	14.72	2.56	4.48	1.28
Boston.....	407,024	195	59	14.79	14.28	1.53	4.68	7.14
Cincinnati.....	325,000	98	—	15.30	7.14	3.06	3.06	9.18
New Orleans.....	248,000	—	—	—	—	—	—	—
Buffalo.....	230,000	—	—	—	—	—	—	—
Washington.....	225,000	92	30	22.89	11.99	1.09	11.99	3.27
Pittsburgh.....	210,000	—	—	—	—	—	—	—
Milwaukee.....	200,000	—	—	—	—	—	—	—
Providence.....	123,000	—	—	—	—	—	—	—
New Haven.....	80,000	—	—	—	—	—	—	—
Nashville.....	65,153	27	15	37.03	11.10	14.80	3.70	3.70
Charleston.....	60,145	35	15	17.16	5.72	8.58	2.86	2.86
Portland.....	40,000	13	4	23.07	23.07	7.69	—	15.38
Worcester.....	76,328	28	14	14.84	11.13	7.42	—	3.71
Lowell.....	69,530	—	—	—	—	—	—	—
Cambridge.....	64,079	24	9	12.48	12.48	4.16	8.32	—
Fall River.....	61,203	22	12	22.75	13.65	—	9.10	—
Lynn.....	51,467	16	—	—	18.75	—	—	—
Lawrence.....	40,175	12	4	—	8.33	—	—	—
Springfield.....	39,952	16	5	25.00	—	—	12.50	6.25
New Bedford.....	36,298	14	2	28.56	21.42	7.14	7.14	14.28
Somerville.....	33,307	8	—	25.00	25.00	—	12.50	12.50
Holyoke.....	32,887	—	—	—	—	—	—	—
Salem.....	28,781	10	3	40.00	—	10.00	20.00	10.00
Chelsea.....	27,552	6	1	16.66	33.33	—	16.66	—
Haverhill.....	24,979	11	3	—	18.18	—	—	—
Taunton.....	24,796	5	2	20.00	20.00	—	—	—
Brookton.....	24,784	6	1	33.33	33.33	—	16.66	16.66
Gloucester.....	23,187	—	—	—	—	—	—	—
Newton.....	21,105	—	—	—	—	—	—	—
Malden.....	18,932	4	2	25.00	—	—	—	25.00
Fitchburg.....	17,534	7	1	—	28.56	—	—	—
Waltham.....	16,651	2	1	—	—	—	—	—
Newburyport.....	13,839	5	2	—	20.00	—	—	—
Northampton.....	13,419	—	—	—	—	—	—	—

Deaths reported 2,546: under five years of age 830; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas, and fevers) 469, consumption 346, acute lung diseases 246, diphtheria and croup 170, diarrhoeal diseases 63, typhoid fever 98, scarlet fever 35, whooping-cough 32, malarial fever 26, measles 15, cerebro-spinal meningitis 11, erysipelas five, yellow fever one. From scarlet fever, New York 16, Philadelphia, Brooklyn, and Chicago, four each, Baltimore two, St. Louis, Boston, Washington, Fall River, and Taunton, one each. From whooping-cough, New York 14, Brooklyn five, Philadelphia three, Chicago and Washington two each, St. Louis, Baltimore, Boston, and Nashville one each. From malarial fevers, St. Louis nine, Brooklyn eight, Baltimore five, New York three, Nashville one. From measles, New York six, Chicago four, Philadelphia two, Boston, Charleston, and Fall River, one each. From cerebro-spinal meningitis, New York

and Washington three each, Nashville two, Chicago, St. Louis, and Boston one each. From erysipelas, New York two, St. Louis, Worcester, and Fall River one each.

In the 28-greater towns of England and Wales, with an estimated population of 9,338,273, for the week ending October 20, the death-rate was 21.0. Deaths reported 3780; infants under one year of age, 1606; acute diseases of the respiratory organs (London) 344, diarrhoea 129, measles 122, scarlet fever 85, fever 58, diphtheria 58, whooping-cough 40.

The death-rates ranged from 16.0 in Leicester to 29.8 in Blackburn; 25.7, Bolton; 25.7, Bradford 16.4, Hull 16.5, Leeds 23.7, Liverpool 19.7, London 20.0, Manchester 26.1, Newcastle-on-Tyne 22.6, Nottingham 19.4, Portsmouth 20.6, Sheffield 23.0, Sunderland 23.3.

In Edinburgh 15.9, Glasgow 21.3, Dublin 24.2.

The meteorological record for the week ending October 27, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week end'g Saturday, Oct. 27, 1888.	Barom- eter.	Thermometer.		Relative Humidity.		Direction of Wind.		Velocity of Wind.		State of Weather.*		Rainfall.	
		Daily Mean.	Daily Mean.	Maximum.	Minimum.	S. A. M.	S. P. M.	S. A. M.	S. P. M.	S. A. M.	S. P. M.	Duration Hours & Min.	Amount in Inches.
Sunday . . . 21	30.04	40.0	51.0	36.0	61	50	56.0	W.	N. W.				
Monday . . . 22	30.21	41.0	52.0	34.0	55	44	50.0	W.	N. W.	14	24		
Tuesday . . . 23	30.20	43.0	56.0	38.0	55	74	65.0	W.	S. W.	16	16		
Wednesday . . . 24	31.80	48.0	59.0	45.0	53	79	86.0	S. W.	W.	9	13		
Thursday . . . 25	30.25	46.0	54.0	41.0	67	50	64.0	N. W.	E.	0	12		10.50
Friday . . . 26	30.50	44.0	49.0	36.0	51	78	80.0	N. E.	E.	0	12		.81
Saturday . . . 27	30.30	50.0	53.0	44.0	93	100	96.0	S. E.	E.	9	10		3.30
Mean, the Week.													.05

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM OCTOBER 27, 1888, TO NOVEMBER 2, 1888.

BAILEY, ELISH I., colonel, surgeon, and Captain JOHN J. COCHRAN, assistant surgeon, detailed on duty on Army Retiring Board, to meet at San Francisco, Cal., for the examination of such officers as may be ordered before it. Paragraph 3, S. O. 233, A. G. O., Washington, October 30, 1888.

Leave of absence for one month, on surgeon's certificate of disability, is granted Major JOHN H. BARTHOLOMEW, U. S. Army. (Fort McIntosh, Texas.) Headquarters Department of Texas, San Antonio, Texas, October 10, 1888.

WEISER, DANIEL, captain, assistant surgeon United States Army. Died at Fort Sill, Ind. Ter., October 30, 1888.

By direction of the Secretary of War, Captain WILLIAM H. ARTHUR, assistant surgeon, is relieved from duty at Fort Bowie, Arizona, and will report in person to the commanding officer Fort 250, A. G. O., Washington, D. C., October 26, 1888.

GLENNAN, JAMES D., and ALFRED E. BRADLEY, appointed assistant surgeons United States Army, with rank of first lieutenants, to rank from October 29, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING NOVEMBER 1, 1888.

GHIN, A. L., medical director, ordered to Naval Hospital, Brooklyn, N. Y.

TAYLOR, JOHN Y., medical director, detached from Naval Hospital, N. Y., and to Examining Board.

HUBSON, ADRIAN, medical inspector, promoted to medical director.

BRADLEY, MICHAEL, medical inspector, promoted to medical director.

BATES, NEWTON L., medical inspector, promoted to medical director.

WOOLVERTON, T., surgeon, promoted to medical inspector.

WHITE, C. H., surgeon, promoted to medical inspector.

WOODS, G. W., surgeon, promoted to medical inspector.

DEBOIS, F. L., surgeon, promoted to medical inspector.

COCKE, G. H., surgeon, promoted to medical inspector.

WELLS, HOWARD, passed assistant surgeon, promoted to surgeon.

BERTOLETTE, D., passed assistant surgeon, promoted to surgeon.

GAINES, J. H., passed assistant surgeon, promoted to surgeon.

DEXTER, EZRA Z., passed assistant surgeon, promoted to surgeon.

STEPHENSON, Z. B., passed assistant surgeon, promoted to surgeon.

SOCIETY NOTICE.

The sessions of the twelfth annual meeting of the AMERICAN ACADEMY OF MEDICINE will be held in the governors' rooms of the New York Hotel, Capital, 8 West Nineteenth street, New York, Tuesday and Wednesday, November 13 and 14, 1888. The programme of Tuesday includes the Report of "Standing Committee on the Requirements for Preliminary Education in the various medical colleges of the United States and Canada," by LEONARD CONNOR, A. M., M. D., of Detroit, Mich., and the following papers: "The Causes and Prevention of the Optimum Habit and other Allied Affections," by JAMES C. WILSON, A. M., M. D., Philadelphia, Pa.; "The Influence of the Work of the Illinois Medical Practice Act upon Medical Education," by H. A. JOHNSON, A. M., M. D., Chicago, Ill.; "The Importance of Practical Obstetrics in the Course of Instruction given by Medical Schools," by THEOPHILUS PARRY, A. M., M. D., Philadelphia, Pa.; Address by the president, FREDERICK HEVLY GERRISH, A. M., M. D., Portland, Me.; "A few words concerning the Academy," by R. LOWRY SIBBEL, A. M., M. D., Carlisle, Pa.; "Tolerance and Intolerance in Medicine; Codes of Ethics; What code should the Academy adopt?" by HENRY I. FOWLETT, A. M., M. D., Boston, Mass.; "The Relations between the Consultant or Specialist and the General Practitioner," by L. DUNCAN BULKLEY, A. M., M. D., New

York; "The Evils of a Medical Dialect Separated Widely from Classical English," by EDMUND ANDREWS, A. M., M. D., Chicago, Ill.; At nine o'clock, P. M., annual collation of the Academy, at Martine's, Fifth Avenue. Tickets for the Collation (fixed, by decision of the Academy, at Two DOLLARS each) may be obtained by remitting the amount to Dr. L. DUNCAN BULKLEY, 4 E. 37th street, New York, on Wednesday, November 14th:—Reading of papers: "The Multiplication of Useless Drugs," by C. C. BOMBARDIER, A. M., M. D., Baltimore, Md.; "The Necessity for Post-Graduate Instruction in the Present State of American Medical Education," by CHARLES C. LEE, M. D., New York, N. Y.; "Which is the Liberal School?" by CHARLES MCINTIRE, JR., A. M., M. D., Philadelphia, Pa.; "The Treatment of Uterine Diseases by other than surgical Means," by F. E. WATSON, A. M., M. D., Philadelphia, Pa.; "The Famous Historic Masters of the Healing Art were Men of Classical Education," by GEORGE J. FISHER, A. M., M. D., Sing Sing, New York.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. A Regular Meeting of the Society will be held Monday, Nov. 12, at the Medical Library, at quarter of eight P. M.

Reader, Dr. R. M. HODGES, Subject, "Excision of the Breast for Cancer." Drs. F. G. MORRILL and E. H. BRADFORD will report a "Case of Tubercular Peritonitis apparently cured by Laparotomy."

F. B. HARRINGTON, M. D., Secretary.

BOOKS AND PAMPHLETS RECEIVED.

The Dispensatory of the United States of America. By Dr. Geo. B. Wood and Dr. Franklin Baché. 18th edition, rearranged, thoroughly revised and largely rewritten, with illustrations by H. C. Wood, M. D., LL.D., Joseph P. Remington, Ph. M., F. C. S., and Samuel Sadler, Ph. D., F. C. S. Philadelphia: J. B. Lippincott & Company, 1888.

Der Klumpfuß und seine folgen für das übrige knöchengerüst. Nach neuen untersuchungen von Dr. G. Hermann von Meyer, ordentl. professor der Anatomie in Zürich. Mit 17 abbildungen im text. Jena: verlag von Gustav Fischer, 1888.

A Text-book of Physiology. By M. Foster, M. A., M. D., LL.D., F. R. S., Professor of Physiology in the University of Cambridge, and Fellow of Trinity college, Cambridge. With illustrations. Fifth edition, largely revised. Part I, comprising Book I, Biological and Tissues of Movement; The Vascular Mechanism. London: Macmillan & Co., New York, 1888.

The Failure of Dr. J. B. Thomas' Treatment of Urthral Stricture by Electrolysis. By Robert Newman, M. D., of New York. Reprinted from the "Journal of the American Medical Association," September 8, 1888. Chicago, 1888.

How far can Legislation Aid in Maintaining a Proper Standard of Medical Education? A Paper read before the American Social Science Association, at the Annual Meeting held at Saratoga, September 5, 1888. By W. A. Purrington, Council of the Medical Society of the County of New York. Boston, 1888.

A new Series of Metric Test-Letters for Determining the Acuity of Direct Vision for Forum. By CHARLES A. OLIVER, M. D., Philadelphia. A Paper read before the American Ophthalmological Society at its Annual Meeting held at the Pequot House, New London, Conn., July 14th and 16th, 1888. Extracted from the transactions of the Society.

A Case of Extrauterine Pregnancy: Embryo destroyed by a Twisted Canulae Current without Interruptions; together with Remarks on the best manner of using Electricity for this Purpose. By A. H. BUCKMASTER, M. D., of Brooklyn. From the Medical News, July 21, 1888.

Diseases of the Skin: Their Description, Pathology, Diagnosis, and Treatment. By H. RADCLIFFE CROCKER, M. D., Lond., etc., etc. With 76 Illustrations. Philadelphia: P. Blakiston, Son & Co., 1888.

A Guide Series. The Diseases of the Chest. Including Heart, and Aorta. By VINCENT D. HARRIS, M. D., Lond., F. R. C., etc., etc. With 55 Illustrations. Philadelphia: P. Blakiston, Son & Co., 1888.

Elements of Practical Medicine, by ALFRED H. CARTER, M. D., Lond., M. R. C. P. London, etc. Fifth Edition. London: K. K. Lewis, 1888.

Original Articles.

THE DIAGNOSIS AND MEDICAL TREATMENT OF ACUTE INTESTINAL OBSTRUCTION.¹

BY REGINALD H. FITZ, M. D.,

Professor of Pathological Anatomy in Harvard University, and Physician to the Massachusetts General Hospital.

INTUSSUSCEPTION.

Of all the varieties of acute, internal, intestinal obstruction that which most often presents the clearest clinical picture is intussusception or invagination.

Its relative frequency among the more important cases is nearly constant at 39%, and ninety-three cases are included in the series collected since 1880. None were recognized as such unless the diagnosis was substantiated at an autopsy, by laparotomy, rectal examination, or by the discharge of a slough.

It occurred among males in fifty-two cases, among females in twenty-seven; about two-thirds of the cases were thus found in the former sex and one-third in the latter. The relative frequency at various periods of life is shown below:—

Year of age.	Number of cases.	Per cent.
Under 1	31	34
From 1-2	5	
2-3	3	
3-4	3	
4-5	3	
5-6	4	
6-7	1	
7-8	2	
8-9	2	
Under 10	51	56
From 10-20	6	
20-30	13	
30-40	9	
40-50	5	
50-60	2	
60-70	4	
70-80	1	
	91	

Exciting causes were absent in forty-two cases, 45%; and the following were possible causes in fifty-one cases, 55%:—

Diarrhœa	in 13 cases
Habitual constipation	in 12 "
Retracted abdominal pain	in 7 "
Indigestible food	in 6 "
Violent exertion	in 4 "
Injury	in 3 "
	45 "

Single cases occurred in the course of typhoid fever, gastroenteritis, variola, pregnancy, after an operation for incarcerated hernia, and after the use of cathartics, — in all, six cases. A preceding like attack was observed in two instances.

These possible factors are of but little value in differential diagnosis; and their frequency without injurious sequences makes their further consideration of little or no importance.

Our knowledge of the method of production of the invagination has been rendered relatively exact by the experiments of Nothnagel⁶ and of Senn.⁷ The former found that a contracted bit of intestine pushed itself into a passive portion from above downwards. This contraction was induced⁸ by a faradic current, and in the course of a minute or

two the invagination might become four inches long. He found that the internal and external cylinders were formed below the tetanized part almost without exception. If the intestines were paralyzed by crushing no invagination occurred. These observations go to show that the invagination is always descending and is rather spasmodic than paralytic. Senn also found that the invagination was early formed in a relaxed bowel and could not be produced in the contracted gut.

The most important symptoms of intussusception are abdominal pain, nausea or vomiting, tympany, tumor, bloody stools, and tenesmus.

Their relative frequency was reported as follows:—

Pain	in 65 cases	= 70 per cent.
Nausea or vomit.	in 66 "	= 71 "
Tympany	in 31 "	= 33 "
Tumor	in 34 "	= 37 "
Bloody stools	in 56 "	= 60 "
Tenesmus	in 33 "	= 36 "

The date of the appearance of these principal symptoms of intussusception is represented in the following table:—

DATE.	Pain.	Nausea or Vomit.	Tympany.	Tumor.			
				Abdomen.	Rectum.	Bloody Stools.	Tenesmus.
1st day	61	51	1	9	10	32	15
2nd day	2	4	2	12	8	7	4
3rd day	1	3	8	8	7	6	5
4th day	1	3	8	2	3	3	
5th day		4			2	1	2
6th day			3	3	4	3	3
Later or not given		4	5	5	6	4	4
Total No. of cases	65	66	31	39	40	56	33

Where pain was recorded as a symptom, it appeared on the first day in nearly all the cases. Its early absence, on the contrary, was conspicuous in rare instances. It was usually described as abdominal, and was sometimes located at the navel, in the stomach and epigastrium, and in the right iliac fossa.

It was referred to the left iliac fossa in rectal or colico-rectal varieties of intussusception. Of five cases in which the pain was said to be at the navel, the intussusception was of the ileum in three instances. The seat of the pain in the right iliac fossa frequently led to the diagnosis of typhlitis, perityphlitis, or typhoid enteritis.

It was usually sudden, severe, perhaps violent, and was frequently spasmodic. In one case it was so intense as to lead to an attempt at suicide. Its importance in the diagnosis of the seat of the intussusception was merely relative. The possibility is obvious that its seat in either iliac fossa might serve to differentiate an intussusception of the colon or rectum from one near the cæcum. In like manner its position at the navel might serve to suggest the small intestine as the seat.

Nausea or vomiting occurred on the first day in nearly nine-tenths of the cases in which a definite date could be fixed. If nausea occurred in the first instance it was rapidly followed by vomiting. The latter presented no characteristics of any value in

¹ Continued from page 449.⁶Nothnagel. *Zeitschr. f. klin. Med.*, 1882, iv, 555.⁷Senn. *Annals of surgery*, 1888, vii, 4.⁸Nothnagel. *Wien. Med. Bl.*, 1883, v, 1483.

differentiating this variety of intestinal obstruction, except the rarity of its becoming fecal. Among the ninety-three cases of intussusception fecal vomit is noted in only twelve patients, and it appeared on or after the fourth day in all but two of these. In nearly one-third of the twelve cases, the obstruction was fixed at or below the cæcum. In two-thirds the intussusception was of the small intestine; in at least one-half of these certainly away from the valve, in the other half possibly near the valve. This symptom, therefore, has no absolute value in determining the existence of an intussusception; if the latter is rendered probable, fecal vomit suggests that the seat is at or above the cæcum.

Tympany is perhaps the least important symptom of obstruction by intussusception. It occurred only in one-third of the cases, and in one-half of these on the third and fourth days.

A tumor was found in sixty-one cases, nearly two-thirds of the entire number. It was found in the abdomen only in twenty-three cases, in the rectum only in twenty-one cases, and in the abdomen and rectum in sixty-one cases. It is stated to have been absent in four instances, while in twenty-eight its presence is not mentioned. It was found on the first day in more than one-third of the cases, on the second day in one-fourth, and on the third day in more than one-fifth of the cases. Thus in more than one-half of all cases it was present in the first two days, and in the first three days in more than three-fourths of the cases. The relative frequency of its presence in the abdomen or rectum on these days is shown in the preceding table. In the cases of intussusception of the small intestine a tumor was not observed. The general characteristics of the tumor of intussusception are sufficiently well known. It was often associated with a relaxed sphincter.

The rectal discharges in intussusception are of the greatest importance in diagnosis, especially as they not infrequently continue throughout the disease. Diarrhœa may immediately precede the attack, and the alvine discharges may be wholly fecal at the outset, but rapidly become mixed with blood. Pure blood or blood and mucus are the more frequent discharges. They may occur spontaneously, or immediately follow a rectal examination, or the use of an enema.

Bloody stools were recorded in three-fifths of the cases; and occurred on the first day in the same proportion of cases where a definite date was given.

Tenesmus was stated to be present in nearly one-third of the cases, in about the same number as was tympany. Its presence on the first day was noted in one-half of these, when a fixed date was mentioned.

Fever occurred in twenty-six cases — 28% of the entire number. Its absence in five was conspicuously stated, while no mention was made in sixty-two instances. The temperature was elevated on the first day in four cases, on the second in seven, on the third in eight, on the fourth in four, and in one on each of the three succeeding days.

Intussusceptions are classified anatomically according to the part of the bowel affected. They are, without more minute subdivision, of the small intestine into itself, into the cæcum, or into the

colon, of the colon into itself or rectum, and of the rectum into itself. The relative frequency of these varieties has a decided practical importance; and of sixty-five cases the variety was as follows: —

Ileo-cæcal or ileo-colic.....	18 cases = 75 per cent.
Enteric.....	5 " = 12 "
Rectal.....	5 " = 8 "
Colico-rectal.....	4 " = 5 "
	65 100

The intussusceptions in the vicinity of the cæcum thus represented three-fourths of the whole number. The question as to the variety in any given case will lie essentially between this form and that of the small intestine away from the valve, which occurred in only one-eighth of the cases. The rectal and colico-rectal varieties are usually easily recognized on rectal examination.

These figures differ considerably from those of Leichtenstern,* based upon a collection of four hundred and seventy-nine cases, which are as follows: Ileo-cæcal and ileo-colic, 52%; ileal (enteric), 30%; rectal and colico-rectal, 18%. The chief difference lies in the greater frequency of the varieties originating near the cæcum in the smaller series and in the lesser frequency of the enteric variety. It is possible that the latter difference may result from the more critical exclusion of post-mortem cases. The former difference may be due to the inclusion, for practical purposes, of ileal intussusception near the valve among ileo-cæcal forms.

The mortality in cases of indisputable intussusception was very great, excepting in the rectal variety. The following table shows the number and date of deaths of other varieties than the rectal, when the treatment was by other measures than surgical: —

Date.	Death.
1st day.....	2
2nd day.....	2
3rd day.....	6
4th day.....	3
5th day.....	5
6th day.....	1
1st week.....	19
2nd week.....	6
3rd week.....	1
Not given.....	9
	35
Recoveries.....	16
	51

It thus appears that of the above series 69% died and 31% recovered. Of the fatal cases nearly one-half, and perhaps a larger proportion, died during the first five days. The third, fourth, and fifth days were especially fatal.

The following table shows the mortality after surgical interference: —

Date of operation.	No. of cases.	Deaths.	Recovery.
1st day.....	1	0	1
2nd day.....	1	0	1
3rd day.....	6	5	1
4th day.....	4	4	0
5th day.....	4	2	2
6th day.....	4	3	1
7th day.....	2	2	0
8th day.....	4	4	0
9th day.....	3	3	0
Not given.....	7	6	1
	36	30	6

The mortality after surgical treatment was thus 80%, against 69% of medical treatment.

* *Op. cit.*, 601.

TWISTS AND KNOTS.

Acute obstruction from volvulus or twist occurred in forty cases, and from knots in two instances. As already stated, the symptoms from knots are essentially the same as those from strangulation. Their occurrence is so rare that they may practically be disregarded.

Of the forty cases of volvulus since 1880, the vast majority were axial, but in rare cases a part of the small intestine was twisted about another portion. As but two instances of the latter variety occurred in the series these have been included among the former, although their symptoms are those of cords and bands, while their prognosis is, perhaps, more favorable. Their number is such as not to materially modify the conclusions to be drawn.

Of thirty-eight cases of volvulus twenty-six occurred in males and twelve in females; 68% in the former and 32% in the latter.

The ages of the patients was as follows in thirty-four cases:—

Year of age.	Number of cases.
From 15-20.....	1
20-25.....	4
25-30.....	2
30-35.....	2
35-40.....	6
40-45.....	3
45-50.....	2
50-55.....	1
55-60.....	5
65-70.....	1
70-75.....	1

34

The extremes of life represented are therefore six years and seventy-three years. The greatest number of cases in any ten years was between the ages of thirty and forty years, and was about one-third of all.

In the etiology of this class of cases of obstruction, the previous occurrence of a similar attack was observed in five instances. A constipated habit was noted in six cases. Hernias existed in three. Two of the patients were insane, and one was paralytic. One suffered from chronic diarrhœa. Upon another the operation of ovariectomy was performed six years before the obstruction took place. In four cases violent exercise was the exciting cause; in another an attack of diarrhœa; and in still another irritating food.

The following table shows the relative frequency of the principal symptoms of volvulus:—

DATE.	Pain.	Nausea or vomiting	Tympany.
1st day.....	19	9	1
2nd day.....		2	1
3rd day.....			3
4th day.....	2	2	3
5th day.....			1
6th day.....		1	1
7th day.....			2
Later or not given.....	3	1	10
Total No. of cases.....	24	15	22

Abdominal pain was thus the first symptom of importance in nearly one-half of all the cases, and

it occurred on the first day in nearly all where the date was recorded. It was sudden in one-half of the above number. It was either severe, intense, extreme or violent in as many cases, and in only one instance was there a record of no particular pain. It was seated near the navel in four cases, in the left abdomen and in the left iliac fossa each in two instances; in the lower abdomen, left groin, right iliac fossa, and near the stomach each in one case.

It was found, therefore, most often, in one-fifth of the cases, on the left side, then at the navel in one-sixth of the cases, and elsewhere in the abdomen in small but equal proportion.

The pain was stated to be associated with nausea or vomiting in three-fifths of the cases where a date was given. In two cases there was no vomit as late as the eighth day, in one till the eleventh day, and in another there was none at all.

The vomit was fecal in six cases,—in three on the fourth day, in one on the sixth day, in one on the eleventh day, and in another no mention is made of the date of its occurrence. It was slight in two of the cases. It occurred in four instances where the small intestine was obstructed, and in two where the large intestine was twisted. On the contrary, in three cases where the volvulus was of the small intestine, there was no fecal vomit.

Although tympany was recorded in more than one-half of the cases, it was present during the first week in only about one-half of these. Its occurrence during the first week was oftener on the third and fourth days. It might be much on the first day, or slight on the fourth day. It was described as enormous on the ninth day.

Tumors are not a characteristic of twist, but the abdominal swelling might be so circumscribed as to suggest a tumor. When the flanks alone were swollen the twist was of the large intestine; when the umbilical region was conically distended the obstruction was either of the large or of the small bowel. Visible coils were present only in three cases. In one the coil was the transverse colon, the twist being of the sigmoid flexure. In a second the sigmoid flexure was also twisted. In the third the volvulus was probably of the small intestine.

A record of the temperature was made in sixteen cases. In four there was no elevation on the third, sixth, and seventh days. In two the temperature was fairly normal or slightly elevated. Of the cases of distinct elevation, there were three in which the temperature on the fourth day was between 99.6° F. and 101.3° F. The temperature is first recorded as elevated on the second, third, fifth, sixth, ninth, and tenth days, each in one case. Since in only about one-fourth of the cases was there any noteworthy elevation of temperature, and since in two-thirds of these cases it took place on no particular day between the second and tenth days, it is obvious that fever is no important characteristic of obstruction from a twist.

Hiccough was present in three cases, apparently without especial dependence on the part of the intestine twisted.

Occasional records were made of the condition of the urine. It was rarely reported as modified in quantity or quality. In one case only half a pint was passed on the seventh day. In another four

ounces were passed in twelve hours on the ninth day. There was retention on the fourth day in a single case. In another patient an increased quantity of indican was reported on the eighth day. In all the other cases there was either no record of its condition or the flow was reported as free or as abundant.

The seat of the twist is shown in the following table.

Seat.	Number of Cases.	Per cent.
Sigmoid flexure.....	19.....	49
Ileo-cæcal region in 6 {.....	11.....	29
Cæcum in 5 {.....	5.....	13
Small intestine.....	2.....	5
Ascending colon.....	1.....	2
Colon.....	1.....	2
Descending colon.....	1.....	2
	39.....	100

It is thus evident that about one-half of the cases of twist took place at the sigmoid flexure, and that nearly one-third of them were present in the ileo-cæcal region. It is further evident that, for all practical purposes, 87% of the cases occurred in the large intestine.

An absolute diagnosis of volvulus is only to be made by abdominal section, either before or after death. Death is, therefore, to be regarded as the probable result of this lesion unless the surgeon affords relief. This statement is made despite the fact that in five of the cases there was the previous history of a similar attack.

Death occurred as follows in cases not treated surgically:—

Date.	Number of cases.
1st day.....	1
3rd ".....	2
5th ".....	2
7th ".....	3
8th ".....	2
9th ".....	1
10th ".....	1
12th ".....	1
Not given.....	3
	15

The date and result of operative interference is given in the following table:—

Date of operation.	Number of cases.	Death.	Recovery.
3rd day.....	2.....	1.....	1.....
4th ".....	1.....	1.....	0.....
5th ".....	3.....	2.....	1.....
6th ".....	2.....	2.....	0.....
7th ".....	1.....	1.....	0.....
9th ".....	6.....	5.....	1.....
10th ".....	1.....	1.....	0.....
11th ".....	1.....	1.....	0.....
16th ".....	1.....	0.....	1.....
26th ".....	1.....	0.....	1.....
Not given.....	6.....	0.....	0.....
	25.....	20.....	5.....

It is apparent from the above tables that all of the cases not treated surgically died, and that of those thus treated one-fifth recovered.

Since, of known dates of death, at least one-half took place before the eighth day, it is obvious that medical treatment should cease before this date. Furthermore, since, of the cases treated by the surgeon from the third to the sixth day only one-third recovered, it is suggested that medical treatment should cease at the former date.

—The death of Prof. Bamberger is reported from Vienna. He will be a serious loss to the department of clinical medicine in the medical school and general hospital.

ABDOMINAL SURGERY AT THE MASSACHUSETTS GENERAL HOSPITAL.

SERVICE OF J. C. WARREN, M.D., AND M. H. RICHARDSON, M.D.

REPORTED BY HOMER GAGE, A. M., M. D.

The following cases occurred during a service as senior surgical house pupil at the Massachusetts General Hospital, and are a fair illustration of the amount and character of work in abdominal surgery done at that hospital. The operations were all performed in the large operating theatre¹ of the hospital, under full antiseptic precautions, and the patient was in each case returned to a private room. On the day before the operation the patient was given a thorough sponge bath with soap and corrosive sublimate. The abdomen was scrubbed with a brush, carefully dried, and then covered with an antiseptic dressing of salicylated cotton and carbolized gauze, retained in position by a tight swathe. The bowels were moved the morning of the operation, and the patient catheterized immediately before etherization. All instruments were thoroughly washed, and then placed in a 2% solution of carbolic acid. The silk used for tying the pedicle, and suturing the abdominal wound, had been previously boiled, and kept in 50% alcohol, and, with the catgut, was allowed to soak for several hours in corrosive sublimate, 1-2000. The only sponges used were those devised by Dr. J. W. Elliot, prepared from Germantown wool, boiled for several hours, and kept in bichloride until wanted. The abdomen of the patient was surrounded on all sides by warm towels wrung out in a sublimate solution, and the hands of the operator and assistants were thoroughly scrubbed and cleansed.

After the operation, the wound was freely dusted with iodoform, and a dressing applied which consisted of successive layers of iodoform gauze, salicylic cotton, and carbolized gauze. Over all was tightly drawn a broad plaster swathe. Absolute rest was maintained for the first forty-eight hours, and all nourishment withheld. Morphia was given only as required for the relief of pain, while the distressing thirst which often followed these operations was relieved by the free administration of cracked ice. In but two of these cases, to which reference will again be made, was there any discomfort from nausea or vomiting. At the end of forty-eight hours, or even earlier, if the temperature and general condition of the patient were satisfactory, or particularly if there had been a free discharge of flatus from the bowels, liquid nourishment, in the form of milk and meat broths, was given, and by the tenth day the patient was expected to be on full diet.

EXPLORATORY INCISION.

Case 1. Female, nineteen years of age, abdominal enlargement for three months. Operation by Dr. Richardson revealed cirrhosis of liver with ascites. Death on third day, apparently from exhaustion. No rise of temperature, no abdominal distention or tenderness, no nausea or vomiting.

Case 2. Male, forty-six years old, abdominal tumor for two months. Operation by Dr. Richardson disclosed cancer of liver. The wound healed

¹ They were for the most part done on other than public operating days, and before a selected number of students.

rapidly, and he was taken from the hospital by his friends on the ninth day.

Both of these cases had been under observation for some time, and in neither had a reasonably positive diagnosis been made. Both were losing ground rapidly, and the operation was proposed as a last resort to get at the exact cause of the trouble, and, if possible, to remove it.

INGUINAL COLO TOMY.

Case 3. Female, forty-two years old. Cancer of rectum for four years. Operation by Dr. Richardson.

Case 4. Male, twenty-five years of age. Cancer of rectum for seven months. Operation by Dr. Warren.

In these cases, an incision about four inches long was made parallel to and one finger's-breadth removed from Poupart's ligament. On opening the peritoneal cavity, the sigmoid flexure was in each case directly under the incision, readily recognizable from its mesentery and the longitudinal striæ of its walls.

In the first of these cases, there had been almost complete obstruction for one week, associated with intense pain. The bowel was first stitched to the wound, and at the end of four days opened. The relief following the establishment of the artificial anus was complete, and at the end of four weeks the patient's general condition and comfort had very much improved.

In No. 4, the patient's youth suggested a specific origin, but no specific history could be obtained, nor was there any change in the local condition after a prolonged course of specific treatment. At the operation, the posterior wall of the bowel was drawn well forward, so that when the opening was made on the third day the bowel below the artificial anus was completely shut off. The almost constant mucopurulent bloody discharge which had existed for several weeks prior to the operation ceased within a short time, and when he left the hospital, at the end of one month, his general appearance was very much improved. He reported June 13th later, having gained twenty pounds, and been perfectly free from pain. On examination of the rectum, the anus was found puckering in and contracting, the hard nodular mass still present, but with no extension or ulceration. He was having a truss made to support and occlude the opening.

MEDIAN COLO TOMY.

Case 5. Male, forty-six years old. Cancer of ascending colon, two years' duration. Exploratory incision. Median colotomy. Recovery.

This case presented a tumor as large as a hen's egg midway between the anterior superior spine and the lower margin of the ribs on the right side, of irregular outline, freely movable, and the seat of constant pain. Although believed to be malignant, its mobility seemed to offer a reasonable chance for removal. The tumor was disclosed through a median incision, and proved to be a cancer of the ascending colon, with coils of small intestine adherent. There was also a cancerous infiltration of the mesenteric glands. Its removal being out of the question, and the calibre of the bowel having been already considerably narrowed, an artificial anus

was established by stitching a portion of the bowel between the cæcum and the tumor to the incision in the median line. The patient left the hospital four weeks after the operation very much stronger, and entirely free from pain.

OVARIOTOMY.

Case 6. Married, twenty-eight years old. Several miscarriages, no children; painful, irregular, and profuse menstruation for several months. Removal of parovarian cyst by Dr. Warren. Recovery.

Case 7. Married, twenty-two years old. No children; miscarried at fifth month two years ago. Tumor in left iliac region for three months. Cyst of left ovary. Removal by Dr. Warren. Recovery.

Case 8. Unmarried, thirty years old. Tumor in right iliac region for six weeks. History of a recent attack of local peritonitis, from which she had just recovered. Cyst of right ovary removed by Dr. Richardson. Recovery.

These were small cysts, all of short duration. Case 6 had a small abscess about one stitch hole, but otherwise made an uninterrupted recovery. She reported three months later, entirely free from the catamenial irregularity which had been present before the operation, but still suffering from incontinence of urine. The latter trouble was due to a urethro-vesical fistula, resulting from an operation in Sweden. She was advised to postpone any further operation for its relief.

In Case 7 menstruation had been scanty, irregular, and painful for two years. The tumor was as large as a cocoanut, and contained about a pint of thick chocolate-colored fluid. The patient seemed perfectly well until the fourth day, when she began to complain of some abdominal pain and slight nausea, which continued at intervals for several days. At the end of a week, all the stitches were removed, and the wound found to have closed by first intention. There was slight tenderness in the right iliac region, and some diarrhœa. From the seventh to the fourteenth day there was a gradual rise of temperature without any apparent cause, and on consultation it had been decided to reopen the wound. On the evening before the day appointed for the operation, the patient had a large movement of the bowels following an enema, and the temperature on the next morning was normal. There was no subsequent rise, and convalescence was uninterrupted. Just what pathological change gave rise to the unfavorable symptoms in this case must be largely a matter of conjecture. Of one thing, however, we are sure—that it was entirely relieved by a free movement of the bowels. Speaking of peritonitis following an operation, Greig Smith says that "a case seen with distention, sickness, and restlessness has a Scidlitz powder prescribed, to be followed by a hot water or turpentine enema; and it is almost taken for granted that at the visit next day the patient will have a flat abdomen, the sickness will have disappeared, and she will express herself as feeling infinitely better." In his experiments on intestinal suture in dogs, Dr. Warren found, on reopening the abdominal wound from three to eight days after the operation, that the sutured point was in each case more or less concealed by the matting together of mesentery and intestines about the resected spot. Although the

passage of fluid through these coils was in nowise interfered with, there was probably a certain amount of paralysis from the local inflammation. The breaking up of these adhesions by the free peristalsis set up by an enema or saline cathartic, may have the same beneficial effect as when the adhesions are forcibly broken up in cases of laparotomy for suppurative peritonitis.

Case 9. Widow, fifty-nine years old; two children, menopause eight years ago. Multilocular cyst of right ovary, duration one year. Removed by Dr. Warren. Recovery.

At the operation, a small subserous fibroid was found attached to the anterior wall of the uterus, undergoing calcareous degeneration. Its removal was not attempted. During her convalescence she had an attack of facial erysipelas, without, however, any implication of the wound, and she was discharged well in twenty-four days. One month later she was reported to be in excellent health.

Case 10. Married, fifty-two years old. Youngest child fourteen years old; climacteric seven years ago. Dermoid cyst of right ovary, five years' duration. Removed by Dr. Richardson. Recovery.

The tumor was very firmly adherent, especially over the anterior surface. Its contents, which were at first supposed to be pus, proved to be a pure yellow fat, that solidified completely on cooling. There was a mass of black hair as large as two fists within the cyst, and, on its walls, two rudimentary teeth.

Case 11. Married, fifty years old. Ventral hernia for three years. Symptoms of incarceration for one week. Radical cure by Dr. Richardson. Recovery.

Ovariectomy had been performed on this patient four years previously, and the hernia had developed in twelve months. The incision was made parallel to but a little to the left of the scar, the opening enlarged, and the peritoneal surfaces approximated as in a primary laparotomy.

Case 12. Widow, thirty-two years old. Chronic suppurative salpingitis. Removal of tube and ovary by Dr. Richardson. Recovery.

This patient gave a history of several artificially induced abortions; the last nine months before her admission to the hospital. Since then her catamenia had been irregular and increasingly painful. She had suffered also from a severe and almost constant pain across the lower abdomen, following the course of the right sciatic nerve, increased by exercise, and preventing her from attending to ordinary household duties. During this same time she has noticed a slight enlargement in right side of abdomen. The uterus was deflected to the left, two and three-fourth inches deep, while to the right of, and intimately connected with, the uterus was an indurated mass as large as an orange. Exploratory puncture through the posterior vaginal wall revealed the presence of pus. The tumor was exposed by a median incision, and found to be intimately adherent, not only to the uterus but also to the floor and sides of the pelvis and to the intestines. There was no capsule or pedicle, and the fallopian tube, ovary, and broad ligament were indistinguishable. Twelve ounces of thick pus were evacuated, and the mass finally removed with great difficulty. During the operation some very large vessels were ligated and cut, and considerable

pus escaped into the pelvis from rupture of the cyst. A glass drainage tube was introduced into Douglas's pouch, which projected through the main dressing, and from which the accumulated fluid was withdrawn twice a day by means of a catheter. The tube was removed on the fifth day, and the patient was up and about three weeks after the operation. She has gained thirty pounds, is now free from pain, well, and strong. Dr. K. H. Fitz examined the tumor, and reported that it was a "cyst with dense fibrous walls; its inner surface, rough, red, and easily scraped away. In the immediate vicinity and intimately adherent was a dilated tube nearly as large as the little finger, the wall of which was thickened and fibrous, and the inner surface lined with a membrane resembling that of the cyst. Diagnosis—chronic salpingitis with probable cystic degeneration."

No. 13. Fibroid of uterus with umbilical hernia. Herniotomy by Dr. Warren for strangulation of hernia. Recovery. Hysterectomy for sloughing fibroid by Dr. Warren. Death.

This case presented many features of peculiar interest. A single woman, thirty-eight years old, had first noticed a tumor seven years ago in the lower left side of the abdomen. It had grown with especial rapidity during the past year, and with its growth there had developed an umbilical hernia as large as two fists. This had been irreducible for three months, but gave rise to no discomfort until three days ago, when she began to have frequent attacks of abdominal pain, with nausea and vomiting. There had been no movement of the bowels and no passage of flatus for forty-eight hours. The hernial protrusion was tense, tender, and moderately painful. The skin was generally reddened and acutely inflamed at the summit, where there was a dry black slough as large as a fifty-cent piece. It was tympanitic, with a doubtful impulse; gurgling on pressure. The abdomen was enlarged to the size of pregnancy at term, and was tympanitic, except on the left side, where there was a large dull area in the hypogastric, inguinal and lumbar regions. These were occupied by a slightly movable tumor of distinct outline. The symptoms of strangulation continuing, on November 12th the hernial sac was opened, and found to consist of four pouches separated by thick, fibrous walls, each communicating with the other through a small opening. Two of these pouches contained three to four ounces each of dark serum, while the two on the left of the median line contained a loop of intestine, three inches long, dark-colored and lustreless, with no omentum. At the middle of this loop was a constriction so tight that the calibre of the bowel was diminished one half. The muscular and mucous coats were cut and had retracted, leaving a white glistening ring around the bowel one quarter inch wide. The contents of the bowel could however be readily passed through without leaking. After enlarging the opening the intestine was replaced, and the wound closed tightly by a double row of braced sutures. The patient had several large loose dejections on the third day, and improved steadily until the ninth day, when she had a chill, with severe abdominal pain, nausea, and vomiting. During the next two weeks she had six chills at irregular intervals, all associated with the same evidences of abdominal

distress. The pain and tenderness were referred chiefly to the region of the tumor. This tumor had grown very slowly without causing any local or constitutional disturbance. It was hard when first examined, easily movable, and intimately connected with the uterus. Vaginal examination threw no light on its origin. After the operation on the hernia it seemed to grow softer, and, over the lower part of the anterior surface, distinctly fluctuating. That the abdominal symptoms could be in anywise referable to the previous stranguination of the bowel seemed unlikely in view of the absence of constipation and the free passage of flatus. The possibilities of a pyelitis from pressure, of a suppurating cyst of the ovary, and of a sloughing fibroid of the uterus were all directly suggested, with the chances rather in favor of the latter condition. At all events it was evident that she was failing rapidly as the result of some inflammatory change within or about the tumor, and Dr. Warren, after consultation, decided upon its immediate removal. With the greatest difficulty the mass was delivered through a median incision reaching from above the umbilicus almost to the symphysis. It was found to occupy the entire left side of the abdomen and to extend above the lower margin of the ribs. It was mainly solid, very friable, and presented on section the appearance of a fibro-myoma. In several places, notably on the anterior surface, it had undergone cystic degeneration, and the resulting cavities were filled with a thick purulent fluid in which were floating bits of sloughing tissue. On the left side were to be seen the left broad ligament with ovary and tube. No trace of these structures could be found on the right. The body of the uterus was completely lost in the tumor. A Koerber's craseur was adjusted as low down as possible, and the mass cut off even with the abdominal walls. A glass drainage tube was placed in the posterior cul-de-sac, the stumps dressed with iodoform and iodoform gauze, and the wound closed about it. The patient improved slightly during the first forty-eight hours, but died on the fifth day.

An autopsy was made by Dr. R. H. Fitz, who reported as follows:—

"Intestines adherent to the peritoneum by recent adhesions throughout the greater part of the lower half of the abdomen. Douglas's fossa was filled with adherent coils of intestine, and contained two ounces of thin, dirty, red fluid. Peritoneal surface at seat of adhesions thickened, moderately opaque, with numerous patches of friable false membrane.

Left kidney one-fourth larger than right, soft, capsule adherent, cortex opaque yellowish gray, tubular regions indistinct. Right kidney normal in size, with similar gross appearances. The pelvis and ureter were diminished in volume. The mucous membrane spotted with patches of a pale red, granular material, resembling fine grains of seed.

The uterus was represented by a stump. The remains of the canal were two inches long, its anterior part intimately connected with a dirty gray, soft fibroid mass as large as a small lemon, apparently subperitoneal. On the right side of the canal, also subperitoneal, were two fibrous nodules, size of English walnuts. No ovaries or fallopian tubes seen. Left ovarian vein contained a dark red thrombus adherent in places.

Intestines: Two feet above the ilio-cæcal valve was a loop of ilium six inches long, distended, of a dirty gray color. On its peritoneal surface occasional fibrous patches; also a fibrous band, easily torn, forming a bridge between the root of the mesentery and the peritoneal portion of the intestine. On section the mucous membrane thin, especially at the lower part of the loop, where the muscular coat was also thin in places. At the lower part of the pigmented loop was an annular ulcer one-quarter inch wide, with a slight constriction. The ulcer extended through the mucous and muscular coats over the greater part of its surface. Near the mesenteric insertion was a pouch as big as a pea, extending from the ulcer into the mesentery. The mesenteric lymph glands in the immediate vicinity of this loop were enlarged to the size of beans, moist, reddish gray. Near root of mesentery a nodule as big as end of thumb. On section it showed a tough fibrous wall and soft putty like contents.

Diagnosis—laparotomy; acute peritonitis; hysterectomy: annular ulcer of intestine; hyperplastic spleen; granular degeneration kidneys and liver.

REPORT PROGRESS—ORTHOPEDIC SURGERY.

BY E. H. BRADFORD AND R. W. LOVETT.

POTTS' DISEASE—PARALYSIS.

DR. ELLIOT has made a most careful pathological and experimental study of the pressure paralysis of Potts' disease, and has reached the following conclusions: that the lesion begins as a simple mechanical pressure on the cord in the form of abscess products, thickened dura, or bone, that the inflammatory process in the dura is a limited one, and that the medullary surface of the dura is almost always normal. As there is no tendency of the cord to be involved by the specific carious process going on in the bone, the cord lesion is purely the result of pressure.

That the presence of sclerotic tissue at the site of the cord lesion in cases of long standing is not an evidence that the process was originally an inflammatory one, and experimental physiology gives no evidence of an inflammatory lesion following experimental compression of the cord. And pathological findings in recent cases reveal but few instances where the original lesion seems to have been inflammatory. In short, his research would lead to the conclusion that the original cord lesion is not, as a rule, inflammatory.¹

Mr. Wright has recently attacked a case of dorsal Potts' disease by operation in the hope of relieving a severe and progressive paralysis. The disease was in the mid-dorsal region and an incision was made over the spines along the angular prominence. Three laminae on each side were divided, and with their spinous processes were removed, exposing the cord, which was found surrounded with a buff-colored, tough, leathery substance. This was cut away with scissors, and the muscles and skin were brought together over the wound. The wound healed by first intention, and slight improvement followed, which was only temporary, however, and the condition gradually fell back to what it was before operation, where it remained stationary.²

¹ N. Y. Medical Journal, June 2, 1888, p. 699.

² Lancet, July 14, 1888, p. 64.

Dr. Judson formulates a general rule which may serve as a guide in the treatment of Potts' disease by rigid apparatus, especially in all forms of the Taylor brace. The rule reads: "The apparatus may be considered as having reached the limit of its efficiency if it makes the greatest possible pressure on the projection compatible with the comfort and integrity of the skin."³

Dr. Sayre tells again the story of the first application of the plaster jacket, and again claims for its advantages over any other form of apparatus, without however, contributing anything new to the subject; one useful suggestion, however, is that his wire cuirass and jury mast can be used in children who are disabled by the disease, securing at once fixation and any desired degree of extension to the diseased column.⁴

LATERAL CURVATURE.

A new apparatus is described by Mr. Scudder, which seems likely to prove useful in recording the amount of deformity present in cases of lateral curvature. It is a modification of the pantograph, by which it is possible to reproduce on a much smaller scale the lateral curve of the back, along the spinous processes, the antero-posterior curve of the back, the outline of the shoulders and trunk, and the amount of rotation of the ribs. The apparatus is simple and easily understood, and the article is well illustrated by cuts giving an idea of its use.⁵

Ketch, in an article on scoliosis, again calls attention to the prevalence of the deformity in young children, and speaks of the importance of at once attacking it by suitable treatment. Where rotation in any marked degree has appeared, there is in his opinion no means on which we can depend to overcome it. Sometimes it disappears, but the surgeon cannot count upon its doing so, and for these reasons he lays the greater importance upon the question of prophylaxis.⁶

WRY NECK.

Robinson describes a new instrument for the treatment of torticollis by elastic traction. A cap with chin piece is buckled upon the head. A chest piece (like a leather jacket) encircles the body and furnishes the counter point from which to pull upon the head—and three elastic straps can be attached to pull in any one of three directions. From the cut the apparatus appears very clumsy.⁷

HIP DISEASE.

In a paper recently published, Dr. Ridlon attacks the American method of treating hip disease, namely, by an extension splint while the child is going about, and advocates a return to the old method of keeping the children in bed during the acute stage and providing them with the practically complete fixation afforded by the Thomas splint.

The American method of to-day he claims to be a direct outgrowth of the Davis idea of providing "motion without friction" obtained by means of a "portative apparatus," so far as the theory of the method goes. In practice too he believes that most modern orthopedic surgeons hold to this theory and treat cases upon this principle.

As regards the results of treatment by the American method, Dr. Ridlon thinks that they "leave much to be desired." His own method would be rest in bed until the muscular spasm subsides, and then locomotion with a Thomas splint worn continuously; and he adds: "There is much evidence that traction can be dispensed with in all cases provided fixation and removal of superincumbent weight be efficient."⁸

HIP DISEASE WITH PERIPHERAL NEURITIS AND EPILEPSY.

Mr. Donaldson records the case of a boy fifteen years old who had had hip disease for three years, and who presented, when seen by the writer, signs of peripheral neuritis of both sides, namely, dry, scaly skin, hyperesthesia, and loss of extensor power in the feet muscles. The neuritis of the diseased side undoubtedly took its origin in its nearness to a suppurating joint, as pointed out by Gowers; and such irritative nerve lesions are apt to be followed by trophic changes in the skin, as in this case. The peripheral irritation had moreover resulted in epileptic attacks shortly before his death, which was due to exhaustion. There was no autopsy.⁹

FLAT FOOT.

Dr. Whitman publishes some observations made in forty-five cases of flat foot, especially with regard to etiology and treatment. After a careful description of the various symptoms and physical signs of the condition, he considers the various theories which strive to explain its etiology, namely, the theories of muscular weakness or paralysis, of lax ligaments, of high heels, and of congenital osseous malformation; and he concludes that each theory probably applies to a certain group of the cases, but should not be taken as explaining all by any means. And in general he would formulate the cause as "a disproportion between the weight the foot is called upon to bear and the ability of the muscles and ligaments to sustain it, a simple breaking down from overwork."

The treatment which he advocates is the application of a light steel plate, slightly elastic, which reaches from just behind the ball of the great toe to just in front of the bearing point of the heel on the inner surface of the foot; it should run up just above the head of the astragals, which carries it nearly to the internal malleolus, and it runs under the sole of the foot to the outer border just behind the fifth metatarsal. The plate must be fitted over a cast of the foot taken with the foot in a restored position. By this means, when weight is put on the properly shaped plate, not only is the arch of the foot held up, but the inner flange of the plate acts as a lever pressing up against the sustentaculum tali and the tuberosity of the scaphoid.¹⁰

KNOCK KNEE.

Davy analyzes sixty-four operations for genu valgum by Ogston's method, all of which were successful and without mishap of any sort. In the forty-two patients operated the age varied between two and thirty years. The width, measured between

³ N. Y. Medical Journal, Sept. 22, 1888.

⁴ N. Y. Medical Journal, June 16, 1888.

⁵ C. L. Scudder. N. Y. Medical Journal, May 19, 1888, p. 543.

⁶ Samuel Ketch. N. Y. Medical Journal, May 19, 1888.

⁷ Lancet, March 31, 1888, p. 631.

⁸ Rest in the Treatment of Chronic Joint Disease. Medical Record, Sept. 15, 1888.

⁹ Brit. Medical Journal, May 12, 1888, p. 1006.

¹⁰ Royal Whitman. Boston Med. and Surg. Journal, June and 21, 1888.

the malleoli when the patient lay with the knees together, presented in general a divergence of twelve to eighteen inches, one reaching twenty-two inches. Davy uses a combination saw and tenotome, so that he accomplishes the whole operation with one introduction of the instrument. His conclusion with regard to the operation is that it is a safe and efficient remedy for genu valgum, if properly done. And as necessary precautions he would insist upon antiseptics and after the operation rest to the joint for at least three weeks, when passive movement should be begun. He uses an outside splint to which the leg is firmly bandaged.¹¹

Mr. Owen also favors the use of the keyhole saw rather than the chisel and mallet in the performance of these osteotomies as being safer and equally satisfactory, and he also protests against too long-continued an endeavor to straighten knock knee by splints and mechanical appliances, inasmuch as laxity of the knee may result and be a much more serious matter than the original deformity. Redressement forcé, although an unscientific method, he considers a useful adjunct to the mechanical treatment in the bad cases in young children. If it fails, osteotomy of course must be resorted to.¹²

Mr. Ellis, who has written several papers advocating the treatment of flat foot by exercises directed to developing the flexor longus pollicis, now comes forward in a short paper advocating the treatment of knock knee by muscular exercises. His assertion is "that the muscle concerned in raising the body to the full height, and those that draw down the pelvis in opposition to resistance from above, pull the knee towards a straight line between the foot and the pelvis, and that their agency ought to be utilized in correcting knock knee."¹³ Beyond this he gives no directions as to how the treatment should be carried out. He has, he says, found this method highly satisfactory.¹³

CLUB FOOT.

Mr. Swan writes advocating the removal of a wedge-shaped piece of bone from the outer border of the foot in cases of neglected and inveterate club foot. He considers congenital club foot as a curable condition if attacked early enough, but in neglected cases, if tenotomy and milder means fail, he would at once do osteotomy, unless the deformity is so severe that the anterior part of the foot is atrophied. In this event he would not advise operation. He has done osteotomy thirty-four times, with excellent results.¹⁴

Prince (*St. Louis Medical and Surgical Journal*, May) describes an apparatus for the treatment of equino-varus. It consists of a sole-plate, or the sole of the shoe, with an iron plate turned up on either side just back of the toe, and perforated for a joint. From here, attached by a rivet, passes a metallic strap, on each side, parallel with the sole to a point about opposite the malleoli, thence upwards at right angle with the first portion and parallel with the leg, and at the top the two straps are connected by a metallic band across the front of the leg. A leather strap passes across the instep, connecting the two right angles; and another leather

strap passes from the top around the back of the leg, drawing the upper end of the lever backward and thus forcing the heel downwards.¹⁵

OPEN INCISION AND SUPRA-MALLEOLAR OSTEOCLASIS IN CLUB FOOT.

Levy reports excellent results with this method, but considers that after healing of the wound correcting manipulations are essential. He considers that resection of the tarsus in children is unnecessary.¹⁶

Vincent,¹⁷ after a review of a number of cases of congenital club foot, is of opinion that the results of resection are no better than after bloodless operations, and that the removal of the astragalus and cuboid cripples the foot. In cases with extreme and obstinate inversion he has employed osteoclasis of the femur, of the tibia and fibula above the malleoli, and forcibly twisting the limb and fixation of the limb for union with inversion of the foot.

SPINA BIFIDA.

Dr. Evans records a most remarkable case, in which he removed with the knife a spina bifida tumor in a boy six years old. The tumor was cut off by a direct incision (it appears to have been a true spina bifida), a gush of spinal fluid followed, but in spite of severe shock the patient recovered. No antiseptics were used. The sac was double, and one half contained the meninges of the cord, and communicated directly with the spinal canal.¹⁸

MUSCULAR ATROPHY IN AFFECTIONS OF THE JOINTS.

Strümpell reports an observation of muscular atrophy in the muscles surrounding the shoulder joint, accompanied by temporary paralysis, in a case of acute rheumatism. He considers that in joint affections this condition of the muscles is not due to the inaction of the muscles, but to a local affection of the adjacent muscle sympathetic to the disease of the joint.¹⁹

ARTHRECTOMY AND RESECTIONS OF THE KNEE JOINT.

Sendler reports a number of cures of these joints with the restoration of motion. Where motion is to be hoped for, a cross incision is not desirable, and the muscular and ligamentous system for extension is interfered with. In these instances, the straight incisions are preferable.

Sendler reports three cases of arthrectomy, with the establishment of motion, in patients of the ages of two and one-half, twenty-two, and eight years of age.²⁰

RESECTION OF THE KNEE JOINT.

Mugnai reports eight cases from the clinic of Prof. Durante, of Rome, and recommends a method of fixation after excision, using the patella, which is nailed to the refreshed tuberosity of the tibia, in addition to the use of splints. He concludes that: 1st, not all cases of fungous disease of the joint are tubercular; 2nd, the surgical treatment is preferable to the palliative; 3d, the shortening in

¹¹ *Lancet*, May 5, 1888, p. 570.

¹² Edmund Owen, *Practitioner*, April, 1888.

¹³ *British Medical Journal*, June 30, 1888, p. 1377.

¹⁴ *Dublin Journal Med. Sci.*, Sept., 1888.

¹⁵ *Medical Anaesthetic*, N. Y., vol. vi, No. 36, p. 425.

¹⁶ *Centralblatt f. orthop. Chirurgie und Mechanik*, May, 1888.

¹⁷ *Centralblatt f. Chirurgie*, No. 24, 1888.

¹⁸ *N. Y. Medical Journal*, August 25, 1888, p. 205.

¹⁹ *Munchener Medical Wochenschr.*, 1888, No. 13.

²⁰ *Deutsche Zeitschrift f. Chirurgie*, Bd. xxvii, p. 307.

moderate resection rarely exceeds five c.m.; 4th, an appliance is to be used for the few months following the operation.²¹

ORTHOTEDIC RESECTIONS.

Mollière believes that a large number of cases hitherto demanding resection for deformity may now be corrected by osteoclasts since the introduction of Robin's osteoclast, which breaks with accuracy. In club foot, osteoclasts of the tarsus or supra-malleolar osteoclasts is preferred to resection. In genu varum and valgum, osteoclasts is greatly to be preferred to resection. He reports one hundred cases without any accident. In cases of ankylosis in faulty position, Mollière considers that osteoclasts gives better results, except in the case of the elbow.

In opposition to the view of Mollière, Ollier claims that the osteoclast can never be as exact as is desirable. In old contraction at the hip joint, Ollier prefers subtrochanteric osteotomy, and rejects resection. In ankylosis of the knee in a contracted position, Ollier prefers wedge-shaped osteotomy.²²

THE TREATMENT OF TUBERCULAR DISEASE OF THE KNEE JOINT BY ARTHRECTOMY.

Mr. Pollard has recently operated upon nine cases of tumor albus by this method. The patients were boys ranging in age between three and seven years, and in all the disease was advanced enough to warrant radical treatment. One case died of septic or iodoform poisoning, and one has recurrence in the scar, as well as a new focus of disease in the spine. The other patients, at the end of a few months, have serviceable limbs, although they are obliged to wear Thomas knee-splints, because when artificial support is left off the knees tend to flex. The incision made in six cases was a curved incision severing the ligamentum patellæ. In the others, the H-shaped incision dividing the patella, which Mr. Pollard thinks gives a firmer union, when once united, than ligamentous union does. So far as possible, the wounds were allowed to heal under one dressing.²³

TUBERCULAR JOINT DISEASE AND ITS TREATMENT BY OPERATION.

Mr. Barker, in three lectures delivered at the Royal College of Surgeons, gives the most complete account yet published of the experiments which have led to the identification of the great mass of chronic joint disease as a tuberculous affection. The inoculation experiments with tuberculous products, and the generalization of tuberculosis from a local focus, are considered in their bearing on the establishment of the identity of scrofula and tuberculosis. The reason why the joints are so often affected, and especially the epiphyseal junction is so often the seat of the primary focus, are considered; and he calls attention to the danger that a small and local disease will suppurate and become generalized. With regard to this question of operation in general, Mr. Barker's view would be that "as long as there is no distinct evidence of caseation in tubercular joints, so long may we be content to wait while treating them by other means." And so soon as caseation is commencing and advancing,

Mr. Barker would advocate operation. He realizes with regret that this is not yet the accepted rule. The third lecture is taken up with an account of the best methods of operating upon the hip and the knee.²⁴

FIBROUS ANCHYLOSIS OF ELBOW.

Weigel describes an apparatus which he has invented for overcoming fibrous ankylosis of the elbow by the use of elastic tension. The apparatus produces not only extension, but at the same time rotation. It is, however, impossible to describe it without the use of figures.²⁵

SUPPURATION AFTER BRISEMENT FORCE.

Müller reports such an accident occurring in the straightening of the deformity following an acute osteomyelitis at the hip in a boy of twelve. The disease became extensive, and it became necessary to excise the joint, which was done successfully.²⁶

CHRONIC LUXATION OF THE JOINT.

Albert advocates a plan for the treatment of congenital dislocation of the hip-joint, based on the successful treatment of a case of lax shoulder-joint which incapacitated the patient by constant tendency to luxation. Albert opened the joint, removed the cartilaginous surface of the bones by means of a chisel, and sewed the bones together with kangaroo tendon. The result was a cure of the luxation but an ankylosed joint.

Albert promises the report in future of a case of congenital dislocation of the hip-joint treated in the same way.²⁷

SYPHILITIC AFFECTIONS OF THE JOINTS.

Monastirskji (*Centralblatt für Chirurgie*, No. 32, p. 582), basing his opinion on a number of anatomical specimens, the results of autopsies as well as operative cases, thinks that syphilitic diseases of the joint are often mistaken for tubercular. He thinks that gummata may present themselves in a microscopic and diffuse form, as well as a macroscopic mass. Gummata may be found in the synovial tissue, in fibrous tissue of the ligament or in the bone.

A diagnosis of syphilitic disease of the joint is a difficult one unless other evidences of syphilitic disease are present. Characteristic however, are the following symptoms: extreme pain accompanied by good motion at the joint, and a peculiar grating at the joint on motion. If the gummata have not emptied their degenerative products into the cavity of the joint, recovery with good motion may follow antisyphilitic treatment, even in old people.

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²¹ *Centralblatt f. Chirurgie*, No. 27, 1888, p. 105.

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Therapeutical Memorandum.

EXPERIENCE WITH STROPHANTHUS IN HEART DISEASE.

BY WM. DEVINE, M. D.

My attention was first called to this drug last January, and since that time I have used it in twenty cases of heart disease, organic and functional. Although rather sceptical regarding new drugs, I have found its action in certain cases of heart disease beneficial. No digestive trouble or cumulative effects have been noticed, even where it has been used for two or three months. Of course it will require a more extended use of the drug to demonstrate what advantages it may have over digitalis and other heart remedies. I have written these notes with the object of encouraging others to try it.

I will give a brief account of a few of the most important cases, which remained under observation several months.

Case 1. Lady, æt. fifty-five, suffering with mitral disease of heart (stenosis). January, 1887, was taken ill. When I first saw her she was in a critical condition. Pulse 140, weak, irregular, and intermittent. Great dyspnoea. Physical examination revealed pulmonary oedema and anasarca. During the first week I tried tinct. digitalis, tinct. nucis vom., ammon carb., and stimulants, but could see no improvement. Then gave tinct. strophanthus, gtt. 5 every four hours; in forty-eight hours noticed marked improvement, then increased to gtt. 10 four times daily. She made a good recovery in about two weeks. She continued with tinct. stroph.; taking gtt. 5 four times daily, for one month. Called to see her Sept. 12. Pulse 160; weak, irregular, and

intermittent, great dyspnoea, oedema of ankles. Commenced with tinct. stroph. gtt. 8 t.i.d., and increased up to gtt. 12 t.i.d. (Edema began to disappear on third day, pulse grew stronger and more regular, dyspnoea relieved. She has continued to take gtt. 12 t.i.d. up to the present time, and her pulse is now stronger and more regular than it has been since she came under my observation.

Case 2. J. C., æt. 60. Has been subject to chronic bronchitis for several years. Has had occasional attacks of asthma. Taken sick in May with an attack of acute bronchitis. The most noticeable feature of his illness was a remarkable cardiac weakness. In the third week, under the influence of enfeebled heart action, pulmonary hypostasis developed. To combat this heart weakness tinct. digitalis, tinct. nucis vom., quin., wine of coca, and stimulants were tried, but without avail. Then commenced with tinct. strophanthus, gtt. 6, and gradually increased to gtt. 10. Pulse gradually grew stronger under its influence, hypostasis disappeared in about two weeks, and he was entirely well in three weeks, and remains so at the present time.

Case 3. A. C., a corpulent woman of sedentary habits, had severe attack of acute articular rheumatism with cardiac complications last February. Recovered from rheumatism in two months, but had dyspnoea on slight exertion, pulse weak, intermittent and irregular, frequent dizzy spells. No valvular lesion could be detected, but symptoms made me suspicious of fatty degeneration. Gave her tinct. digitalis in small dose with tinct. ferri chloridi; also gave quinine, nux vomica, etc., but could notice no real improvement. September 1 commenced with strophanthus, gtt. 4 t.i.d.; gradually increased to gtt. 8 t.i.d.

There is a marked improvement in her general condition (October 1). Her wind is much better, pulse stronger and regular, 84 per min. I shall continue with small doses unless I see something to contra-indicate it.

Case 4. C. G., æt. 26, policeman. Father died of heart disease. First came under observation in April. Has had several attacks of palpitation the last year. These attacks would generally last several days, unless he remained absolutely quiet. No treatment gave any permanent relief. He was addicted to the moderate use of tobacco, otherwise his habits were good. I forbade the use of tobacco in any form. Physical examination revealed no valvular lesion. The continued overaction of the heart had ceased; slight hypertrophy. In his case used various cardiac sedatives, but got no permanent relief; finally, September 1, 1887, commenced with tinct. strophanthus, gtt. 5 t.i.d., and have increased it to gtt. 12. Under this course of treatment the excited pulse gradually subsided, and he has had but one slight attack of palpitation since. I could cite a number of other cases to show the efficacy of this drug in heart disease.

I have used strophanthin in several cases; it is a more reliable method of administering the remedy. The dose is one-hundredth to one-fiftieth of a grain. In urgent cases of heart disease, where quick action of drug is desired, it will be found more efficacious than the tincture of strophanthus. The proper average adult dose of the tincture is gtt 10; it may be increased up to gtt. 20.

Reports of Societies.

THE NEW YORK ACADEMY OF MEDICINE.

STATED meeting, November 1, 1888. DR. J. LEWIS SMITH read a paper on

SUDDEN HEART FAILURE IN DIPHTHERIA: ITS PATHOLOGY AND TREATMENT.

There was no other disease, he said, in which sudden, unforeseen, and fatal attacks of heart-failure occurred so frequently as in diphtheria, and no other disease in which physicians, largely on account of such unexpected attacks, were so frequently deceived in their prognosis. In most cases of this kind death speedily occurred, even when the medical attendant had made a favorable prognosis only a short time previously. Having briefly referred to the symptoms, he quoted, with comments of his own, a number of typical cases occurring in the hospital service of M. de Gassicourt, which he said he had selected on account of the completeness of the latter's records. In some of these the heart-failure occurred early in the course of the disease, and in others during its later stages. M. de Gassicourt met with one recovery to fourteen deaths, and the case which recovered was of special interest from the fact that the heart-failure preceded the palatal and other forms of paralysis, instead of being preceded by them, as is ordinarily the case.

Dr. Smith then went on to discuss the cause of this sudden loss of power in the heart in diphtheria. Having shown that Bouchut and Lagrange's hypothesis that it was due to endocarditis was untenable, he stated that the heart-failure had with more probability been attributed to granulo-fatty degeneration of the muscular fibres of the organ, consequent upon a prolonged and severe attack of diphtheria; and quoted Oertel in support of this theory. Such degenerative changes, if occurring in a considerable proportion of the muscular fibres, would undoubtedly render the contractile power of the heart feeble, and perhaps inadequate. It could, however, be regarded as a cause of the condition in question in a limited number of cases only, since in the majority of instances the loss of power in the heart occurred suddenly, and during convalescence, when degenerative changes were not likely to occur. In most of the recorded cases the contractile power of the organs did not appear to have been notably weakened previously to the attack of heart-failure, as would probably have been the case were degenerative changes in the myocardium the sole or chief cause. Furthermore, in typical cases of sudden heart-failure the microscope sometimes revealed a perfectly healthy myocardium after death.

The accident had also been attributed to cardiac thrombosis; and among the most strenuous advocates of this theory was Dr. Beverley Robinson, whose thesis for the doctorate of medicine in Paris had been devoted to this subject. But, as several writers had pointed out, the heart clots which had been observed were identical in appearance and kind with those found in the heart after death from other diseases, and there was every reason to suppose that they were formed during the death-struggle, and that they are not, consequently, the primary cause of the heart-failure, but secondary to

it. In support of this position he quoted De Gassicourt and Sanné.

The theory of deficient innervation, or a true cardiac paralysis, Dr. Smith thought the most tenable hypothesis. It appeared to be applicable to the largest number of cases, and afforded the most satisfactory explanation of those cases in which death occurred during apparent convalescence, when the symptoms were fast disappearing, with the exception of the palatal or other paralysis; as well as the most satisfactory explanation also of the occurrence of those obscure cases in which the *post-mortem* examination shows an apparently healthy state of the heart. The theory of an arrested or deficient innervation of the heart, furthermore, furnished an explanation of the occurrence of the concomitant symptoms, such as vomiting, epigastric pain, and dyspnea, with an irregular respiration; since the heart derived its innervation from the same source as the lungs and stomach, viz., through the pneumogastric. In classifying the forms of diphtheritic paralysis he felt justified, therefore, in making a distinct class having the designation cardiac paralysis, or, to adopt the French expression, cardio-pulmonary paralysis.

He then proceeded to speak of the etiology of cardiac paralysis. It was, as he had shown, associated with and preceded by other forms of paralysis, with few exceptions, and it was probable that in most cases it had the same pathology and cause. What was true in reference to the cause and nature of palatal and multiple paralyses, and even of abolition of the tendon reflexes, was probably true also of cardiac paralysis. Having spoken of the untenable theory of Gubler, that paralysis of the velum and palate was due to disease of the terminal nerves produced by contiguity or propagation from the inflamed fauces, he stated that Trousseau considered that the real cause of diphtheritic paralysis was the poisoning of the system by the morbid principle which generated the malady, and believed it doubtful whether its mode of action in producing the paralysis would ever be discovered. The microscopic examinations of Charcot, Vulpian, Roger, Damaschino, Buhl, Pierret, Déjeune, Oertel, and others established the fact that the peripheral nerves distributed to paralyzed muscles had, in certain instances at least, undergone degenerative changes. Pathologists had attributed these lesions to a neuritis, and hence the widely accepted theory that the cause of diphtheritic paralysis is a peripheral neuritis. But anatomical changes equally marked had been discovered in the spinal cord, and especially in its gray matter, and in the roots of the spinal nerves; so that in some cases it was a fact that central lesions occurred which were quite as extensive and marked as those in the peripheral nerves.

Dr. Smith's next point was to examine by the light of clinical experience the prevailing theory that diphtheritic paralysis results from anatomical changes peripheral or central, or both, in the nervous system, and to enquire whether it was adequate to explain the paralysis as it ordinarily occurs—whether cardiac paralysis or the other forms. The following were some of the objections to it:—

1. Cases occur in which carefully conducted microscopic examinations reveal an apparently normal state of the nerves supplying the paralyzed part, and of that part of the cerebro-spinal axis from which the nerves arise. Thus, in three cases of typical cardiac paralysis reported by M. de Gassicourt, which had been detailed in the early part of the paper, the pneumogastric (and its branches, examined in one case) appeared normal, and in none of the three was there any lesion sufficient to cause paralysis found in the medulla oblongata, the central organ of innervation of the heart.

2. Palatal paralysis sometimes occurs as early as the second or third day of diphtheria, and loss of the tendon reflexes as early as the first day; and it seems improbable that a peripheral neuritis, or anatomical changes in the cerebro-spinal axis such as to cause paralysis, should occur at so early a date.

3. In its commencement, diphtheritic paralysis often exhibits what Trousseau designates as mutability, suddenly shifting from one group of muscles to another. It would seem impossible that there should be a sudden recovery from the paralysis, and then perhaps on the following day a recurrence of it, if it resulted from degenerative nerve changes, either central or peripheral. A persistent cause should produce a continuous effect.

4. Some of the microscopists who have discovered degenerative changes in the peripheral nerves supplying paralyzed muscles state that, while some nerve-fibres have undergone complete or nearly complete degeneration, others have been affected with only partial degeneration, and still others seem to be intact; a condition which would hardly account for the complete paralysis often met with, as for instance, in the velum palati.

5. It has been alluded to by both Drs. Suss and Wm. H. Thomson that diphtheritic paralysis, both motor and sensory, is sometimes limited to the parts supplied by a single branch of a nerve, while all the other branches have their normal function. This fact, of not infrequent occurrence, is not, of course, antagonistic to the theory that peripheral nerve lesions cause the paralysis, but it affords a strong, if not conclusive, argument against the theory that central nerve lesions are the cause.

Notwithstanding these objections, however, when the lesions referred to, whether peripheral or central, were found after death, we naturally inferred that they had a tendency to increase and prolong the paralysis. The present theory relating to the etiology of diphtheria, which was gaining acceptance throughout the world, was that the specific germ of the disease acts only locally upon the surface, and that systemic infection occurs through ptomaines, which are produced upon the surface by the agency of the microbes, and enter the system through the lymphatics and blood-vessels. If this theory were true, we must attribute anatomical changes in the interior of the body, in the peripheral nerves as well as the cerebro-spinal axis, to the agency of ptomaines, and the ptomaine must be the causal agent, acting directly or indirectly, in diphtheritic paralysis. Dr. Wm. H. Thomson, in his recent paper on diphtheritic paralysis, wrote: "It is quite conceivable that a

ptomaine may follow upon the changes which the diphtheritic process sets up in the organism, and thus produce all of its characteristic symptoms. The special tendency of diphtheritic inflammation to cause necrotic and gangrenous lesions lends further support to this surmise."

The ptomaines, Dr. Smith said, sprang into existence suddenly and unexpectedly under favoring conditions, as was seen in the cheese or milk ptomaine, tyrotoxicoin; and chemistry, brought to the aid of microscopy, might yet reveal the fact that the common cause of diphtheritic paralysis is a chemical agent acting in some respects, in manner though not degree, like curare. Clinical facts appeared to harmonize best with the theory that a ptomaine is the direct cause of the paralysis, especially in cases occurring early and quickly cured; though it would be idle to argue that the marked degenerative peripheral and central nerve lesions which are so frequently present in those who have died with diphtheritic paralysis do not prolong and intensify the paralysis, and are in some instances its primary cause.

As to the treatment of cardiac paralysis, the reader said that it was evident from the nature of the trouble that it must be combated promptly and with the most active remedies. The patient should be kept quiet in bed, with the head low, and alcoholic stimulants administered at once. In sudden seizures hypodermic injections of brandy acted most promptly in sustaining the heart's action. Ammonia, camphor, musk, and electricity were also of service; as well as the predigested beef preparations, peptonized milk, and other concentrated foods designed for those with feeble digestion. If the urgent symptoms were relieved by these measures, such remedies should be employed as were useful in other forms of diphtheritic paralysis. In addition to the beef extracts, concentrated foods, and alcoholic stimulants, iron and quinine, in moderate doses, were indicated. The use of electricity was suggested by the nature of the attack, though some physicians considered it of doubtful efficacy. If there were reason to suspect the presence of lesions in the central nervous system the galvanic current in short sittings had been recommended in preference to the faradic, while in ordinary cases either the direct or induced current might be employed. Strychnia, however, was regarded by good observers as the most efficacious nerve stimulant in the various forms of diphtheritic paralysis, and he referred to the testimony of Henoeh, Reinhardt, and Gerasimon in its favor. Still, it was a fact that some physicians of experience state that they have not observed any marked benefit from this agent.

DISCUSSION.

DR. A. L. LOOMIS, having mentioned two fatal cases which had occurred in his practice, said that he had always supposed that diphtheritic paralysis and heart-failure were not always dependent on the same cause. In the early stages of diphtheria it had seemed to him that heart-failure was due to the direct action of the poison in the system, whatever that might be; as was no doubt the case in other diseases, especially typhus fever, in which sudden death not infrequently occurred from this cause. On the other hand, he had been inclined to

believe (although it was perhaps an assumption not sufficiently well based on evidence) that when heart-failure occurred in the advanced stages of diphtheria it was due to a peripheral neuritis.

DR. A. CAILLE spoke of the importance of keeping all patients suffering from diphtheria strictly confined to bed, and of giving them sufficient stimulus, for the purpose of counteracting the tendency to heart-failure as far as possible. He also mentioned one case in which fatal heart-failure was apparently brought about by an error in diet.

DR. BEVERLEY ROBINSON said that, so far as he was able to judge, cardiac failure in acute cases, in the majority of instances, was connected with the ante-mortem formation of clots in the heart, especially the right heart, depending on granulo-fatty degeneration of the walls of the organ. When a hospital interne in Paris he had made a large number of autopsies in such cases, and he had never found any lesions of the peripheric nerves. He believed that the condition of the heart to which he referred could be frequently detected during life, if properly looked for. In his experience death did not always occur rapidly; the symptoms of heart-failure often continuing for a considerable time before the fatal termination. After death there would almost invariably be found fibrinous clots, and from their character he believed they were formed ante-mortem, and were to a greater or less extent the direct cause of death.

DR. SEIBERT expressed the opinion that heart-failure occurring in the early stages of diphtheria was due to the direct action of the poison of the disease upon the central nervous system, and that when it developed later on it was due to pathological changes in the cardiac muscle. He related cases, and said that all the patients died from the attempt to make some exertion.

DR. LOOMIS said that Dr. Robinson seemed to think it was the heart-clot that killed; but he himself did not believe it possible to have a clot without antecedent heart-failure. It was the heart-failure that caused death, and the formation of a clot was simply the last act, resulting from the slowing of the blood-flow.

DR. ROBINSON said that his personal observation compelled him to differ from Dr. Loomis as regards the formation of clots; and as he had formerly made a special study of this subject, he felt justified in the views which he held. It was a fact that the heart-clot in diphtheria differed absolutely from every other. It was completely fibrinous and formed in layers; and he thought that there could be no doubt that it existed a long time before death and antedated the cardiac failure.

THE PRESIDENT, DR. A. JACOBI, said it was probable that some of the sudden deaths in diphtheria were due to syncope, the result of anemia of the brain brought about by exertion, as was not infrequently the case in pneumonia. Fatty degeneration of the heart, when present, was always a sufficient cause of death at any time. There was one peculiar condition that might be mistaken for heart-failure in the later stages of diphtheria, viz., paralysis of the muscles of respiration. It usually followed the other forms of paralysis, and was characterized by shallow respiration, with a good deal of resulting dyspnoea and rapidity of the

heart's action. In such cases electricity in short sittings and strychnia in full doses were called for. The strychnia should be given hypodermically,—the one-hundredth of a grain every one, two, three, four, or five hours according to circumstances.

It was impossible to say which of our diphtheritic patients was going to die of heart-failure; but we did know that in diphtheria there was such a tendency, and hence it was our duty in every instance to do all in our power to guard against such an accident. The indications were to save the strength of the patient by feeding and tonics, and especially to fortify the heart by means of alcohol and such agents as digitalis, sparteine, and strophanthus. In every case of diphtheria we had to deal with sepsis, and alcohol was therefore of the highest possible advantage. He believed that no case of this disease could be injured by alcohol; and even the most courageous practitioners often erred in giving too little of this invaluable agent. If the choice were given him between alcohol and all other remedies in diphtheria, he would unhesitatingly select the former as offering the best chance to the patient. In brief, then, the indications for the prevention of heart-failure were to save the strength, combat sepsis, and sustain the heart.

DR. SMITH, in closing the discussion, said that since the stomach and lungs, as well as the heart, were implicated, the inference was that the cause of the trouble was some affection of the nerve supplying these three organs, the pneumogastric. It was a fact that a certain proportion of those attacked with heart-failure recovered, and that in some of those who died there was for a time an amelioration of the symptoms; and it seemed to him that this would not be possible if the trouble were due to heart-clot, which would undoubtedly be a permanent condition, unaffected by any treatment that might be adopted. It was also a fact that paralysis of some form almost invariably preceded the heart-failure, and this would seem to indicate that the latter was due to the same cause as the paralysis.

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON NEUROLOGY.

STATED meeting, October 12, 1888. DR. C. A. HERTER read a paper on

THE THERAPEUTIC USES OF HYPNOTISM.

The employment of hypnotism was attended with difficulty, he said, on account of the prejudices existing against it in the minds of the profession, as well as the public at large. It was indeed perhaps impossible at the present time to arrive at any positive conclusions as to its proper place in medicine. Hypnosis resembled ordinary sleep, with the element of "suggestion" added. Suggestion was effective, however, in the waking state also, as shown in the so-called Christian Science and faith cure, as well as to some extent as regards homœopathy.

Having given Lieboldt's classification of hypnotic trance in six divisions, according to the degree of intensity of the hypnosis, he said that this was at variance with the well-known division of Charcot into catalepsy, lethargy, and somnambulism. Char-

cot's cases, he thought, should not be taken as a basis of conclusions, because they were as a rule trained subjects. He had never seen the neuro-muscular excitability so much spoken of occur spontaneously, although he had found that it could be readily developed by suggestion. He then described the proper method of producing hypnosis, as advocated by Lieboldt and Bernheim. The operator should first secure the confidence of the patient, and then tell him to look him steadily in the eye and think of nothing but going to sleep. The process could be materially aided by suggestive remarks addressed to the patient, and by placing two fingers upon the face; the fingers being finally pressed gently upon the eye-lids. In order to obtain good results it was necessary to watch the patient very closely, and to suit the words to the symptoms of sleep as they developed themselves. The *rationale* was very simple. Verbal suggestion in the waking state made the patient believe that he was falling asleep, and the method closely resembled the natural process. It had been found that men and women were about equally susceptible to hypnosis, the preponderance being only one per cent. in favor of the latter.

In speaking of some of the conditions in which it had been employed as a therapeutic agent, Dr. Herter first referred to hysteria, and stated that notwithstanding so much had been written on hypnosis in this connection, the special indications for resorting to it were still far from clear. It was probable that hypnotic suggestion might be of more or less service in all forms of hysteria; but, as a rule, recovery, if secured, was not permanent. In old cases of contractures due to this cause, it was indeed often very difficult to get any appreciable result. The effect on hysterical amblyopia and amaurosis was extremely interesting, and in many cases a very marked improvement in vision had attended the persevering use of hypnosis. Of the motor paralyses, none were more benefited by it than abductor paralysis of the larynx. In hysterical convulsions the number and severity of the attacks were greatly diminished. He said that one need never be discouraged by failure to secure hypnosis at the first trial in any case of hysteria. The prospect of a cure would depend on various circumstances, but at all events hypnosis would in many instances serve as a useful adjunct to other treatment. Not much was to be hoped from it in hystero-epilepsy. He had personally employed it in two cases, but with no satisfactory results. The prospect was not encouraging in epilepsy either.

In several cases of chorea the effect on the movements was rapid and marked, and with perseverance a cure might sometimes be made in this affection. A number of daily sittings was generally required, and in some cases it was necessary to keep these up for months. Still, in any case of supposed cure there would always arise the question whether the disease had not simply run its course, and ended spontaneously. There was the most ground for hope in those cases in which the movements were general; and the previous existence of rheumatism and endocarditis did not seem to render the chances of relief less favorable. In insanity the results from hypnotic suggestion had not for the most part been satisfactory. He

had seen it tried quite extensively at Zurich, but had never observed any benefit from it that was not evanescent.

In delirium tremens its effect was often excellent, and quiet, restful sleep was sometimes secured by it in cases in which the same result could only have been obtained by the use of drugs in doses so large as to be dangerous. Alcoholism constituted one of the most hopeful fields for its employment. The *séances* should be given twice daily for several months, and in many cases the patient became inspired by suggestion with a complete disgust for drink. The same was true also of the opium, chloral, cocaine, and tobacco habits; but in all these cases surveillance in an asylum was, of course, an essential feature of the treatment.

Masturbation and other bad habits had been cured by hypnosis; and perhaps no more satisfactory results from its use had ever been observed than in incontinence of urine in children. Lieboldt had employed it in seventy-seven cases, with a very large percentage of cures. The average age of the patients was seven years; and in two of those cured there was incontinence of feces in addition to the enuresis. The results obtained were the more gratifying from the fact that many of the cases had resisted all the ordinary methods of treatment. In various rheumatic affections Bernheim and others had reported fairly satisfactory results. Among these were lumbago, and subacute, chronic, and gonorrhoeal rheumatism. In chronic joint cases it was claimed that not only was the pain diminished, but that the nutrition of the joint was actually improved by the treatment. Dr. Herter thought it was doubtful, however, whether any real effect upon the joint was produced. In neuralgia much benefit could be expected in recent cases, but if the trouble was chronic there was less chance of success. In some old cases of sciatica, however, good results had been claimed, and at all events the method was often of service in securing sleep, even if no permanent benefit could be looked for. In functional headaches it was of decided advantage; and in certain instances of migraine he had been successful in mitigating and cutting short the attacks by its aid.

At first sight it might seem that such an agency as this could have no effect upon a function like that of menstruation; but it had been practically demonstrated that in some cases not only the interval between the periods, but the length of the periods themselves, could be absolutely controlled by it. The number of individuals in which such results as these could be looked for was, however, comparatively few.

As to the employment of hypnosis in surgery as a substitute for the ordinary anaesthetics, the number of patients, with the exception perhaps of children, in whom it was available for major operations was, no doubt, small, especially as the anticipation of having an operation performed was extremely apt to interfere with the success of the hypnosis. On the whole, its employment in this field was not to be recommended, except in cases where for any reason the use of anaesthetics was contra-indicated. He had, however, seen a molar removed under its influence without the patient's suffering any pain or having any remembrance afterwards of the extraction of the tooth.

Having spoken at some length of the use of hypnotism in parturition, Dr. Herter said that we were justified in arriving at the following conclusions regarding the subject:—

(1) It induces sleep, and is in no wise prejudicial to the efficacy of the uterine contractions.

(2) It has no tendency to produce *post partum* hemorrhage, and is unattended by any other bad results.

(3) It is in no way comparable to chloroform in labor, and should only be used in those rare cases where the usual anæsthetics are contra-indicated.

In insomnia it could often be employed with good results, but it sometimes required months of persevering treatment to effect a cure. In cases where drugs had been resorted to, it could be used in addition to the habitual remedy; the dose of the latter being gradually diminished, and perhaps finally replaced by a placebo. Among the other affections in which it had been tried were writer's cramp and paralysis agitans.

Among the objections which had been raised to the employment of hypnotism were the following:—

(1) It tends in certain susceptible subjects to produce temporary mental alienation; some individuals thus developing hallucinations during wakefulness.

(2) Some individuals fall asleep spontaneously, showing a tendency to auto-hypnotism.

(3) Some can be readily put to sleep by any one who chooses to do so.

The bad results referred to Dr. Herter thought could for the most part be entirely antagonized by suggestion. In conclusion he proposed the following general rules for those desiring to practise suggestive therapeutics:—

(1) Never hypnotize any subject without first obtaining his or her formal consent.

(2) Always hypnotize in the presence of a third person.

(3) Never give any suggestions other than those which are necessary for the patient's improvement in health.

Public exhibitions of hypnotism he thought should be prohibited by law, and the use of this agency confined exclusively to the medical profession. One advantage connected with its employment in medicine was that it does not lose its effect by repetition. On the contrary, the subject became more and more readily influenced by it the oftener he tried it. From what had been said it could be seen, therefore, that suggestive therapeutics was not a delusion; and he had no doubt that before many years it would be assigned a regular place in medical science. At the conclusion of his paper Dr. Herter exhibited on a female subject the method of inducing hypnosis.

The Chairman of the Section, DR. W. R. BIRD-SALL, read the

REPORT OF A CASE OF TREMOR TREATED BY HYPNOTIC SUGGESTION.

The tremor was of recent origin, and completely incapacitated the patient, who was a young man of twenty-one, from work. It affected the right forearm, and there was constant flexion and extension of the member; the movement being so violent as

to shake the entire body. Hypnotism was readily induced, the arm becoming perfectly quiet under its influence, and he was told that when he awoke the tremor would not return. When he first came out of the trance there was no motion, but it soon came back to a slight extent. He was told, however, that it would disappear altogether before long, and requested to return for a second treatment the following day. The treatment was repeated several times, and after the fifth *séance* the cure was complete. Some time afterward there was a slight return of the trouble, but it was readily removed by the same treatment. The patient had been lost sight of, having removed from the city. Dr. Birdsall said, in concluding his report of the case, which he considered to be of an hysterical nature, that he thought we were not justified in wholly discarding a method of treatment which had already shown itself useful in many nervous troubles; though, of course, he did not mean to contend that we should by any means attempt to treat all classes of cases by hypnotism, and thus place ourselves on a level with the faith healers and Christian Science people.

DR. OSGOOD MASON read a paper on

SIX CASES OF TREATMENT WITH ANIMAL MAGNETISM.

He said, in commencing, that as the term hypnotism was not altogether satisfactory, and as he had been in the habit of employing that of animal magnetism before the latter came into vogue, he preferred to still retain it, in the absence of any better designation. Among the cases described, the first of which was treated eighteen years ago, were cases of hysterical paralysis, epilepsy, and rheumatism, and the results obtained by him were quite favorable. The deductions which Dr. Mason said he had derived from these and other cases were as follows:—

(1) Animal magnetism is of decided value as a therapeutic agent.

(2) Sleep is not always necessary for the production of the greatest benefit.

(3) It has the effect of equalizing the circulation.

(4) It also regulates and equalizes nervous action.

Corollary: The equalization of the circulation is the result of the equalization of nervous action.

The SECRETARY then read a paper on

THE THERAPEUTIC VALUE OF HYPNOTISM,

by Mr. COREY, of Boston, Chairman of the Committee on Hypnotism of the American Society for Psychical Research, who had been present during the early part of the meeting, but had been obliged to leave in order to catch a train. In the course of it he spoke particularly of the results obtained by M. Voisin in certain cases of insanity. He also referred to many of the affections spoken of in Dr. Herter's paper, and expressed the opinion that hypnotism was destined to prove of great service in properly selected cases in medical practice. In the latter part of it he dwelt at some length upon the medico-legal aspect of the subject, and spoke of the danger, that susceptible individuals might be caused by the unscrupulous to commit criminal acts while in a state of hypnotic trance.

DISCUSSION.

DR. KREMER said that he had employed hypnotism in six or eight cases of a nerasthenic or hysterical character, and three of these he related as presenting points of special interest. In one case he had had considerable difficulty in arousing the patient from the hypnotic sleep, and in several instances he had found that the treatment gave rise to headache and malaise. On the whole, his experience with the method had not been very favorable.

DR. C. L. DANA mentioned the case of a child of neurotic family, who was suffering from vomiting and intense headache, in which, after other remedies had proved inefficient, complete recovery was secured by hypnosis repeated twice. After referring to two other cases in his experience, he said that it was something of a coincidence that at the time when the convention of the "Christian Alliance," composed of those who believed in faith healing, was treating the subject of suggestive therapeutics empirically, it should be discussed at the Academy of Medicine from a rational point of view. He said that five or six years ago, when the method of Bray was in vogue, he had paid considerable attention to hypnotism, and he had known of one subject, a young girl of nervous temperament, who was affected with convulsions in consequence of the treatment. While the method of Bernheim and Lieboldt was much less objectionable, he did not think the practical application of hypnotism was of very wide range. There were comparatively few individuals who were suitable subjects for treatment by it; and there were not many physicians who were willing to devote the time necessarily required by it. Dr. Dana thought the so-called faith cure and Christian Science should be prohibited by law, and expressed the opinion that it was better for a person to remain ill rather than be cured by such agencies, which tended to produce paresis of the will and eventually bring about a certain amount of volitional degradation.

DR. HERTER said, in reply to Dr. Kremer, that he had never found any difficulty in arousing a patient from the hypnotic sleep, although he had seen the method tried in over one hundred subjects. The only exception was in an individual who had been in a spontaneous condition of trance previously. He did not think this a valid objection to hypnotism, and as to the headache and malaise referred to, he believed these could always be prevented by suggestion before allowing the patient to awaken. He had never noticed any depressing tendency about the treatment. He agreed with Dr. Dana as to the bad effects of Bray's method, with the bright light, which had been known to give rise to epilepsy and convulsions; but said he was not aware of any evil results having been noted from the method now employed. It was comparatively easy to hypnotize a considerable portion of people, although he thought that in the higher classes of society it was no doubt more difficult to get subjects sufficiently passive than was the case in individuals of the middle and lower classes.

— In China insanity is not accepted as a defence in charges of murder. The insane person is beheaded as if responsible for his act.

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THE MORTALITY OF PNEUMONIA.

THIS subject has been attracting a good deal of attention during the past year, and some of those who have discussed it have been disposed to take the ground that the rate of mortality has greatly increased within the last fifty years, and that such increase is due in no small degree to unsuitable treatment.

Dr. Henry Hartshorne read a paper before the College of Physicians of Philadelphia, in February, on the "Past and Present Mortality and Treatment of Pneumonia,"¹ in which the average mortality of pneumonia during the second quarter of this century is "safely and fairly" estimated, from various statistical sources, at 8.33 per cent., a mortality which is favorably compared with that of 16 to 20 per cent., as given in the returns of the Collective Investigation Committee of the British Medical Association.² In the Pennsylvania hospital, in the three years 1845-46-47, the mortality from pneumonia was 6.25 per cent.; in the years 1865-66-67, 18.50 per cent.; in 1884-85-86, 31 per cent. According to Dr. A. L. Loomis,³ the average ratio of deaths from pneumonia to those from all diseases together, in New York, was 15.2 per cent. greater between 1850 and 1877 than between 1840 and 1858. From these figures the writer deduces a demonstration of the large increase in the proportion of deaths from pneumonia over what it was thirty, forty, and fifty years ago. Moreover, from a comparison of these and other figures with the modes of treatment prevalent at various periods the conclusion is drawn that there is reason for the judgment that the now current "working theory" of the treatment of pneumonia and allied affections, by early and continued

¹ Abstract, Medical News, April 7, 1888.

² The Collective Investigation Record, vol. II., July, 1884.

³ American System Practical Medicine, (Pneumonia,

stimulation and narcotism, is not supported by the facts concerning the results of that treatment, as compared with those of the *moderate, early, sedative and eliminative* practice of forty and fifty years ago.

According to Dr. Gouverneur M. Smith,⁴ New York experience corroborates the statistics of Philadelphia. From a table furnished him showing the number of cases, the number of deaths and death-rate from pneumonia, occurring in the New York hospital for a period extending from the year 1810 to 1887, divided into decades, it appears that the lowest mortality occurred between the years 1820 and 1830. The mortality has been rising, and during the last decade it reached its acme—considerably over double the earlier percentage. Dr. Smith thinks that, from such sources of inference as are at hand, and from observation, it may be regarded as an accepted fact that the death-rate from pneumonia is much greater at present than it has been hitherto. His conclusion is that science and pneumonia have ever been at loggerheads, and that the latter is vanquishing its more pretentious foe.

On the other hand, the *Medical News* takes the ground that, although a study of the history of the treatment of pneumonia makes one almost despair of the future of therapeutics—so impossible does it seem to arrive at reliable conclusions regarding the use of medicines—yet our feelings of despair vanish when we compare the figures of to-day, bad as they appear, with those of the *first* quarter of this century; for we then see that there has been in the treatment of pneumonia, as in that of fevers, a steady, progressive enlightenment. The comparison of the *News*, it will be noticed, is made with the first quarter of the century, and that of Dr. Hartshorne with the second and third quarters.

The sub-committee of the Collective Investigation Committee, commenting on the figures presented in regard to mortality in pneumonia, reminds us that it is evident from the statistics of consecutive years that the death-rate of pneumonia varies very widely from year to year. In 1875 the mortality from pneumonia at the London hospital was not quite 24 per cent. in the year following it was 39 per cent. Of forty cases admitted into Middlesex Hospital in 1871, fourteen died; while of the same number admitted in 1873, only five died. At the Westminster hospital the death-rate varies from 10.6 per cent. to nearly 23 per cent. The aggregate mortality, however, the sub-committee thinks fairly represents the present death-rate of acute pneumonia

in England, and suggests a comparison of these figures with the old statistics of Lewis, Chomel, and Andral, showing a mortality varying from 30 to 55 per cent., with Bouilliard's "jugulant" practice with an asserted death-rate of about 12 per cent., and with the late Dr. Hughes Bennett's more recent series of one hundred and twenty-nine cases, with only four deaths.

The latest contribution to this side of the question is from Dr. William Osler.⁶ Dr. Osler does not find that the statistics of the large hospitals show any decided increase in the rate of mortality from pneumonia. He has taken the figures of three representative institutions—the Montreal general hospital in the north; the Pennsylvania hospital in our Middle States; and the New Orleans Charité in the south. At Montreal the statistics are available since 1853, and give the following results: in the decade 1853-63 a mortality of 16.2 per cent.; 1863-73, 16.1 per cent.; decade ending 1883, 23.7 per cent.; and in the years 1883-87, 20.3 per cent.; a total of 1012 cases, with 206 deaths, equal to 20.4 per cent. The total number of cases admitted to this hospital, which has not been materially enlarged, has increased with each decade; in 1873-83 as many were admitted as in the previous twenty years. Taking the statistics of four periods, according to the method of Dr. Hartshorne, the figures do not indicate a regularly progressive increase in the mortality. In 1853-54-55 there was a death-rate of 24.3 per cent.; 1863-64-65, 12 per cent.; 1873-74-75, 29.1 per cent.; 1883-84-85, 16.1 per cent.

The statistics of the Charité hospital of New Orleans date from 1830. In the five decades from 1830 to 1880 the death-rates have been respectively as follows: 44.6 per cent., 35.3, 32.2, 43.9, 40.2. In a total of 3969 cases there were 1509 deaths,—a percentage of 38.01.

As illustrative of the beautiful elasticity of figures, and as showing that the mortality at the Pennsylvania hospital has been, if anything, reduced, Dr. Osler parallels the selected periods of three years in the fourth, sixth, and eighth decades of the hospital records, previously quoted from Dr. Hartshorne's paper, by four other periods of three years in *successive* decades, as follows: 1848-49-50, percentage of mortality 37.9; 1858-59-60, 21.2 per cent.; 1868-69-70, 22.8 per cent.; 1878-79-80, 32.7 per cent. In a total of 704 cases since 1845, the mortality has been 29.1 per cent. Precisely the same death-rate is given for the past thirteen years for the Boston City Hospital, where a very large number of pneumonias enter, and where out of a total of 1443 cases there were 421 deaths.

⁴ New York Medical Record, October 20th, 1888.
⁵ Editorial, December 11th, 1886.

⁶ University Medical Magazine, Nov., 1888.

Other statistics adduced coincide in a general way with those which we have quoted.

For ten years past Dr. Osler says he has practised free bleeding to the amount of from twenty to twenty-five ounces in adults in cases where he thought it might be indicated, and yet he has to confess to disappointment in his results; he has seen but one case recover after bleeding, out of twelve or fifteen, and his cases of bleeding in the late stages have been uniformly fatal.

We very much doubt whether the mortality rate from pneumonia can be fairly shown to have progressively increased during the last fifty, forty, or thirty years, and we are decidedly of the opinion that the treatment of to-day is more rational and better calculated to aid the natural tendency to recovery in uncomplicated cases—which after all said and done is the hopeful feature of the disease—than that of fifty years ago. In most cases of pneumonia antipyretics are calculated to do more harm than good; and common sense must govern in the use of cardiac and respiratory stimulants as well as in the application of antiphlogistics and depressants. Every one recognizes the extraordinary fatality of pneumonia among alcoholic subjects; and where the rate of mortality from pneumonia has apparently increased, it is doubtless due rather to the growth of the dissipated and squalid classes in the populations of our large cities than to any modifications of treatment.

MAKE WAY FOR LIBERTY!

The London *Pall Mall Gazette* is stirred with rejoicing on the verdict recently rendered by a coroner's jury at Poplar, England, over the dead body of an eleven-months'-old child, in which verdict the jury abandoned the position heretofore held, we believe, in England, that death of a child resulting from an absolute neglect of all medical care was due cause for action against parents permitting such neglect. The fine fairness of the *Gazette* is shown by its language in describing facts, which, as simple facts, are probably nearly correct.

"Young Goobey was a rickety child of eleven months, who had been ill from his birth, and who at last succumbed to an attack of convulsions. The doctor who conducted the post-mortem was of opinion that it had died of consumptive bowels, and of course swore that if he had been called in in time he could have saved its life. The mother of the child did not call in a doctor. She was a member of the small and curious sect appropriately known as the "Peculiar People," which, amid all the quackeries of rival schools of medicine, holds fast to the prayer of faith and the anointing oil, and are quite content to take their chance of dying, or of letting their children die, rather than violate their religious belief in the sinfulness of resorting to physicians."

After going on to deplore the persecution hitherto practised upon the Peculiar People by the average British juror in the shape of occasional verdicts for manslaughter, persecution which only stiffened their resolution, the *Gazette* expresses its satisfaction that on this occasion "the enemy hauled down his flag and capitulated at discretion—or, in other words, a British jury formally placed on record its conviction that it was useless to censure the Peculiar People any longer, 'as these people's religious belief was so strong nothing could change it.'"

This new apologist for liberty of conscience allows that the case against the mother of little Goobey was very strong. She admitted that she had not called in a doctor, and would not call in a doctor. She had lost no fewer than eight children, who died under the age of three—thanks, possibly, to the "peculiar" treatment of their maladies. When questioned by the coroner, she replied, "We believe in warm water and flannels, and nothing else," excepting, of course, in the prayer of faith. The coroner, Mr. Baxter, we are told, further, in order to elicit how far they were willing to carry their principle, asked, "If you were in a ship with a hole in the bottom, would you do the same?" "Yes," replied this uncompromising witness, "we should trust in the Lord."

The *Gazette* somewhat disingenuously glozes this question and reply as meaning that, in the case supposed, the tenets of the Peculiar People would not forbid them, while praying to God for safety, at the same time to try to stop the leak. But this is just the point which the coroner's question was framed to bring out, namely, that they would simply pray to God and do nothing for their own salvation; as, in fact, they did nothing but pray in the case of the child dying from rickets.

This tribune of the people closes its reflections on the triumph of a great principle with the following somewhat grandiloquent burst:—

"The scientific frontier between the authority of the State and the rights of the individual is perpetually in dispute; and it is only when the individual defies the State to do its worst, and proves that he is willing to take the consequences, and then do it again, and so keep on doing it until the State gets tired of sending him to prison, that the individual's claim to consideration gains any recognition. At this moment Parliament holds itself omnipotent enough to do anything except levy a Church rate. There it admits its authority fails. Until we can get men and women to defend civic liberties as tenaciously as these good Peculiar People have defended the liberty to do without the doctor, and the Quakers have protested against Church rates, no civic liberty is safe. But every such victory gained by men who put a conscience to their work is an encouragement to all who care for individual liberty as against ever-encroaching

authority to pluck up courage to push still further forward the boundary line of freedom."

Now, precisely this argument could be applied with equal effect to the case of Freeman, the child murderer of Poasset. He was certainly one of a Peculiar People. He believed, with a fervor which very probably was strong enough to stand the test of imprisonment, that a divine voice called on him as upon Abraham of old, to slay his child. Let jurors and judges beware how they restrain such a man. Let us get men and women to defend their civic liberties, and "every such victory gained by men who put a conscience to their work" will "push still further forward the boundary line of freedom."

THE TREATMENT OF CONSUMPTION BY RESIDENCE AT HIGH ALTITUDES.

UNDER this head, Dr. John Lowe publishes a short article in *The Lancet*, in which he gives his personal experience as a consumptive, and the benefit which he had derived from a sojourn in an Alpine climate.

There was a deposit of tubercle in the apex of the left lung. Bacilli had been found in abundance. The general symptoms were well marked, and there was a strong family inheritance. He had been to the English health resorts, and tried the usual remedies without benefit. He spent a winter at Davos and Wiesen, and returned home quite recovered.

Dr. Lowe affirms that the English practitioner is utterly unable to cope with phthisis in his own climate. "The English health resorts are the forlorn hope of phthisis, and the so-called respiratory therapeutics constitute one mode of advertising." But it is no use, he says, to send patients with excavations in their lungs to mountain stations; such cases are always hastened in their downward march. It is only in the earliest stages, when there is simply slight consolidation, that these climates of altitude do good; hence the necessity of an early diagnosis, and a resort to Davos, or some other elevated station, before the disease has become established. For patients presenting the earliest physical signs of tuberculosis of the apex, before there is any softening or any fever, even though there may have been hæmoptysis, a sojourn in mountain stations is almost invariably beneficial.

These views are in accordance with those of the best authorities. There is no mountain-cure for patients with large lateral or bilateral cavities.

ON THE DIURETIC ACTION OF STROPHANTHUS.

DR. LEMOINE, of Lille, has made a communication to the Société de Biologie, Paris, relative to the diuretic

action of strophanthus. Of all the effects of this medicament, he says, polyuria is the most constant. He has always obtained such effect on giving experimentally to healthy individuals the tincture of strophanthus. In doses of from five to ten drops, almost double the daily quantity of urine is voided. This increased diuresis he has also generally obtained in cardiac patients, unless there be complete asystole, in which case strophanthus rarely succeeds in restoring diuresis. He has also met with want of success when strophanthus has been given in extensive œdema of the lungs.

The diuretic effects of strophanthus last long after discontinuance of the medicine. In some cases, when before treatment the daily quantity of urine voided was only four hundred grammes, he has known it to increase to three thousand, under strophanthus; and a fortnight after suspension of the remedy the patients were still voiding two litres a day.

As for the diaphoretic effect of strophanthus, he has found it feeble, if not nil.

MEDICAL NOTES.

—The young doctor, with a reputation to make, always feels grateful when his patients get well. With the old and well-established physician the case is different. If his man dies he simply says, "Everybody must die," and the clergyman of his church comes to the funeral and stands in with him, and says, "The Lord giveth and the Lord taketh away," and there you are.—*New Orleans Picayune*.

—Dr. Seaver, the director of physical culture in Yale University, has reported his measurements of the two hundred and four members of the Yale Freshmen class. He finds that there are no men whose physical condition will deter them from successfully pursuing their studies at Yale. This is somewhat remarkable, considering the fact that for six years there have been in each incoming class men whom it has been found necessary to advise not to continue in the university on account of their poor physical condition. There are no phenomenal developments found in '92. The lightest man weighs eighty-seven and a half pounds, and the heaviest two hundred pounds. There are about half a dozen whose physical development is perfect, who will make acceptable crew men if they care to compete for positions on the university crew.

—The Boylston medical prize of four hundred and fifty dollars has been awarded by Harvard University to Dr. George H. F. Nuttall, of San Francisco, for a dissertation entitled, "A Contribution to the Study of Immunity."

—An Indian correspondent of the *Medical Press* says that the more fashionable parts of Bombay are suffering unheeded of torments from a plague of mosquitoes. An unusually large black variety of the insect has made its appearance about the Cumballa and Malabar Hills, and the inhabitants can neither eat, drink, walk, drive, nor sleep for them. They swarm in myriads over every one and everything, and their bite is of a most pernicious and painful character, and they do not give their victims a moment's peace. Even the native servants are almost driven mad by them, and for the time being have become walking medicine-shops. The strong-smelling native applications which they smear over their skins are of the most offensive kind. The application which physicians are prescribing is a strong solution of phenyl, but this soon fails to keep away the blood-sucking culex; the skin becomes irritable from its repeated application. A female doctor has been trying oil of lemons, that is, olive oil with a large admixture of essence of lemons. This seems for a time to prevent them settling on an exposed part, but nothing answers very long, for have their fill of blood they will. It is believed that they were imported into the place in a new water-tank just erected for the better water-supply of this part of Bombay. But the correspondent thinks this a mere coincidence, and attributes the actual cause to the very small rainfall, which has been very much below the average of years.

BOSTON AND NEW ENGLAND.

—The executive council of Massachusetts, after giving two or more hearings to petitioners for the reprieve of Mrs. Sarah J. Robinson, the Somerville poisoner, who was sentenced to be hanged November 16, has voted to commute her sentence to solitary imprisonment for life in the State Prison.

—The Massachusetts State board of lunacy and charity has appointed Dr. Albert R. Moulton, of the Worcester asylum for the insane, as inspector of charitable institutions, in the place of Mr. F. B. Sanborn, removed. Dr. Moulton was educated at Bowdoin College, where he received the degree of M. D. in June, 1876. Soon after graduation he was called to the asylum for the insane at Concord, N. H., as assistant physician, and thence to the McLean asylum at Somerville. During the past eleven years he has been connected with the Worcester asylum, occupying the position of first assistant since 1881. His appointment has been approved by the governor, and he will at once enter upon the discharge of the duties of the office.

NEW YORK.

—In consequence of the prevalence of diphtheria among the children of Tottenville, Staten Island,

the local board of health has ordered the public schools there to be closed.

—It is said that in consequence of the impurity of much of the Hudson river ice, and the prejudice against it that naturally exists in the public mind on this account, some of the New York companies are negotiating for the procuring of their supply of ice from Lake Champlain during the coming season.

—By the will of the late John Guy Vassar, of Poughkeepsie, \$130,000 is left to the various departments of Vassar College, of which \$10,000 is to be applied to the purchase of materials and apparatus of the Vassar Brothers laboratory. For the completion of the Vassar Brothers hospital at Poughkeepsie \$25,000 is bequeathed, and \$200,000 in securities is given to be part of the permanent maintenance fund; while \$17,000 more is left to this institution with the condition that certain annuities be paid from it. Among the other bequests are \$181,000 for the founding and support of an orphan asylum, and \$70,000 and some valuable real estate to the Vassar Brothers Home for Aged Men.

Miscellany.

A CASE OF PREGNANCY IN THE LEFT HALF OF A DOUBLE MONSTER.

We find a report in the *London Medical Recorder* (Oct. 20, 1888) on the above subject. The patient was a well-nourished girl, aged 19, married about one year. She had suffered from amenorrhœa and vomiting for two months. The writer discovered four inferior extremities, two navels, and duplicity of all the organs below them. She had menstruated from both uteri regularly till the present illness; one alimentary tract was occasionally constipated, whilst the other was relaxed. A portrait of the patient is appended; she is fully dressed, with her skirts raised to the knees, exposing only the four lower extremities. The outermost left leg is of the proper length and well developed, the outermost right is long, but thin; the two central legs are much shorter. At first sight, the latter seem as though they belonged to a thoracopagus parasite, but the toes and knees are directed forwards; they are covered by stockings and boots, so that the side to which they belong is not clearly indicated. Pregnancy in the left uterus was detected. When informed of the nature of her case, she said: "If it had been in my right side I would come nearer believing that you are correct." As she was in very bad health, and the left pelvic outlet measured but two inches antero-posteriorly by one and a half laterally, labour was induced by ergot and by two introductions of the sound. She was safely delivered of a perfectly formed foetus, "of ordinary size for three and a half months' term." From the evidence of the patient it would appear that the right genitals were, as a rule, used functionally. The case

was originally recorded by Dr. Whaley in the *Atlanta Medical and Surgical Journal*, and the reporter in the *Recorder* remarks that "it is unfortunate that Dr. Whaley's paper was 'simply an outline or synopsis of the case from memory, as the notes in the case have been misplaced.' No mention is made as to how far the contiguous parts of the two pelves were fused or separate. The monstrosity was probably posterior dichotomy, sub-variety schizorachis.

OLD FAMILIES.

SOME interesting facts in respect to population were noted in a "Demographic Study of the Diminution or Increase of Families," recently read by Dr. Gustave Lagneau before the Académie de Médecine, which are referred to at some length by the *British Medical Journal*. Dr. Lagneau quoted Littré, who had demonstrated that history proved a remarkable phenomenon. Free populations, the citizens of ancient commonwealths, could never maintain themselves by reproduction. All aristocracies and close bodies of men have gradually lost in number, and would have become extremely reduced without occasional mixture with new blood. Between 1583 and 1654 the Sovereign Council of the City of Berne admitted 487 families to citizenship. In 1783 only 108 of these families had escaped extinction, Out of 133 families composing the Council of Geneva in 1789, only 92 could be traced, at home or abroad, in 1873. Out of 458 baronets created by James I. and Charles I., between 1611 and 1648, only 107 of their titled representatives remained in 1731. In 1840 only 8 out of 80 noble families existing in 1400 had escaped extinction. M. Benoiston de Châteaufort, after scrutinizing the pedigree of 380 noble French families, found that their average duration was three hundred years. The great burgher families of the Hanseatic towns of Holland and Venice disappeared rapidly; not one of the original patrician families of Zealand is now in existence. Lainé, carefully examining thirty-one charters of cities in Languedoc, Burgundy, Lorraine, and Brittany, granted at the end of the twelfth century, authenticated 314 noble families, only represented in 1840 by 12 survivors. Turning to the poor, the extinction of small tenant families, easily traced by legal documents, appears almost as rapid. Out of 127 families existing in the commune of Marigny-en-Orysois, now in the department of the Aisne, in 1555, only 14 appeared to be in existence in 1886. Englishmen must not lay too much stress on the depopulating effects of great wars in Continental countries. War losses are rapidly repaired; Frederick the Great said, after one bloody engagement in the Seven Years' War: "Une nuit de Berlin répara-tous ces ravages." The struggle for existence in Anglo-Saxon communities must dislocate families in any given district very rapidly. Herodotus, in his Egyptian chronology, remarked that three generations of men represented a century. Calculating on the Father of History's principles, a generation lasts about as long in France, although careful calculation, from 1788 to 1888, brings the average duration of a generation, from male to male in a family, down to thirty-one years. M. Lagneau ends his important monograph with a gloomy sen-

tence. The population of the kingdom of Prussia is increasing at the rate of 4.14 children to each marriage. Twenty-five years ago the French nation increased at the rate of 3.08, but now at only at 2.97, per marriage. Strange it must ever seem that civilized countries are all complaining that their population is either too great or too stationary; but the subject is too complex for discussion here.

Correspondence.

NERVOUS AFFECTIONS FOLLOWING INJURY.

MR. EDITOR.—Since the publication of my paper with the above title, I have received further information concerning Dennis B. (Case XL.), which I should like to note. His symptoms gradually increased, he grew steadily weaker, the mental deterioration became more marked, and, about a year from the time when I saw him, he died. Unfortunately an autopsy could not be obtained. The fatal termination in so short a time shows beyond a doubt that the diagnosis of an organic affection of the central nervous system was correct, and it seems to me to bring further evidence to the support of the opinions held in my paper, that organic affections of the nervous system are not uncommon as the result of "concussion," and that, consequently, the prognosis is grave.—Yours truly,

PHILIP COOMBS KNAPP, M.D.

BUSTLES.

MR. EDITOR.—Sensitive musicians are said to suffer tortures from itinerant bands: their attention is attracted by failures which are unheeded by people of less cultivated ears. The physician in the street is said by his friends to notice all the deformities and physical defects that pass him. He has learned to look for physical peculiarities and it is a matter of interest to look for such things. Some things that he meets give him positive pain. It is something more than disagreeable to see a girl laced more tightly than usual. His mind sees the deep sulcus in her liver, and notes the prominent abdomen forced to hold the organs squeezed out of their proper position. The pretty foot is not contained for him by the shoes pointed at the toes and several sizes too small. In such a foot he sees the prominent great toe joint with its painful bunion and the toes riding each other. Such acquired and cultivated deformities are painful to him, and he sometimes produces little sermons about them. There are other deformities that are simply sham deformities, that amuse him not a little. Why people should so fashion their dress as to feign a deformity which they have not is incomprehensible—and of all these incomprehensible deformities the bustle is the worst.

When the doctor is once attracted by the excrescence he sees it everywhere. The advertisement stares him in the face from the top of the crowded horse car, while women unable to seat themselves squarely illustrate the advertisement on the seats below. Were the bustle so firmly attached as to seem a part of the person it might not be so bad, but most women turn inside their bustles as independently as a stick inside a hoop, or rather the woman and her bustle turn like the fragments of a broken bone—the woman, the distal fragment, makes a half turn before the bustle, the other fragment, takes up the motion.

Occasionally, when the bustle is very long, it swings like an elastic pole, and when you run against it in the street, or on the cars, it gives you an uneasy feeling, such as is supposed to be felt at the contact of a ghost.

But the fun is to see it caricatured in the women who cannot afford all the latest inventions. Walking not long ago in a part of the city where the serv-

ants are slipshod, a woman, presumably a servant, stood upon a doctor's door step conversing with a woman on the next step, and, with back to the street, her bustle, made of rags and newspapers, was plainly visible through that gap in the skirt which seems like a trap to betray a woman's untidiness. The same deficiency in the development of the skirt—incomplete union, like hare-lip—sometimes shows a mass of wire protruding—it may be tangled and awry, or just from the shop.

Even children, only little girls I am glad to say, are laden with this excrescence, and one little girl whose dresses have not the adjunct was not long ago heard to explain the lack by saying that her "natural bustle" was all she needed.

My attention was attracted on the street not long ago by a boy of tender years on crutches. I observed him somewhat narrowly—for I love to watch the little cripples. He was attended by a young woman that I am sure was not his mother. She was dressed in a dark blue dress made without superfluous material, and gathered at the waist by what looked like a very ordinary piece of cord. She helped the little fellow into a car that would pass that admirable charity, the Children's

Hospital, with an ease and gentleness that showed she was accustomed to care for him—but her every motion disclosed a hideous hump of I know not how many newspapers. She too had her vanity, but it rendered what should have been a graceful act hideous.

The object of this communication, however, is not only to draw attention to the bustle as a deformity, but particularly to mention its really deleterious effects upon its wearer. The woman with a bustle can never sit down in a natural position. It is absolutely impossible for her to rest her back against the back of any seat of ordinary construction. I have no doubt some of the severe backaches in women whose duties keep them seated all day are due to, or at least are aggravated by, this disability. In addition, when the woman stands, the weight of the back breadths of her dress are thrown so far behind as to make her lean forward to maintain the centre of gravity in its proper position. This is only worth mention when the dress is of heavy material. The bustle, like the car stove, must go, and I am glad to hear it has even begun to move off; but I am not unwilling to aid in accelerating its departure.

Yours very truly,

SENEX.

REPORTED MORTALITY FOR THE WEEK ENDING NOVEMBER 3, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhoeal Diseases.	Typhoid Fever.	Diph. & Croup.
New York.....	1,526,081	630	208	18.08	14.24	2.40	.96	7.84
Philadelphia.....	1,016,758	323	96	10.54	15.19	.93	4.03	4.03
Brooklyn.....	751,432	289	90	19.25	15.05	1.05	4.20	8.05
Chicago.....	760,000	231	99	24.08	16.04	1.29	5.16	13.76
St. Louis.....	449,160	—	—	—	—	—	—	—
Baltimore.....	437,155	152	52	16.50	19.14	4.62	2.64	5.94
Boston.....	407,024	182	56	13.75	13.20	3.85	4.40	3.30
Cincinnati.....	325,000	88	—	15.96	5.70	3.42	5.70	6.84
New Orleans.....	248,000	140	44	22.72	1.42	7.81	7.14	7.81
Buffalo.....	230,000	—	—	—	—	—	—	—
Washington.....	225,000	75	21	11.97	21.26	2.66	7.98	1.33
Pittsburgh.....	210,000	—	—	—	—	—	—	—
Milwaukee.....	200,000	—	—	—	—	—	—	—
Providence.....	123,000	—	—	—	—	—	—	—
New Haven.....	80,000	—	—	—	—	—	—	—
Nashville.....	65,153	19	5	15.78	15.78	5.26	—	—
Charleston.....	60,145	33	11	6.06	27.27	3.03	—	3.03
Portland.....	40,000	11	4	—	27.27	—	—	—
Worcester.....	76,328	29	12	13.80	13.80	3.45	—	6.90
Lowell.....	69,530	—	—	—	—	—	—	—
Cambridge.....	64,079	21	5	9.52	19.04	4.76	—	4.76
Fall River.....	61,203	27	16	22.20	7.40	11.10	—	3.70
Lynn.....	51,467	11	—	—	—	—	—	—
Lawrence.....	49,175	17	4	5.88	11.76	—	5.88	—
Springfield.....	39,952	12	5	16.66	8.33	8.33	—	8.33
New Bedford.....	36,298	9	4	33.33	11.11	11.11	—	22.22
Somerville.....	33,307	14	3	14.28	35.70	—	7.14	7.14
Holyoke.....	32,887	—	—	—	—	—	—	—
Salem.....	28,781	5	—	—	—	—	—	—
Chelsea.....	27,552	11	—	27.27	18.18	9.09	9.09	—
Haverhill.....	24,979	6	2	—	33.33	—	—	—
Taunton.....	24,796	—	—	—	—	—	—	—
Brockton.....	24,784	5	1	20.00	—	—	—	20.00
Gloucester.....	23,187	—	—	—	—	—	—	—
Newton.....	21,105	—	—	—	—	—	—	—
Malden.....	18,932	7	—	—	28.56	—	—	—
Fitchburg.....	17,534	—	—	—	—	—	—	—
Waltham.....	16,651	7	1	14.28	28.56	—	—	14.28
Newburyport.....	13,839	5	—	—	20.00	—	—	—
Northampton.....	13,419	—	—	—	—	—	—	—

Deaths reported 2,389: under five years of age 739; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 404, consumption 331, acute lung diseases 299, diphtheria and croup 163, typhoid fever 70, diarrhoeal diseases 64, scarlet fever 45, malarial fever 24, whooping-cough 16, measles 15, cerebro-spinal meningitis eight, erysipelas one. From scarlet fever, New York 24, Philadelphia 11, Brooklyn and Chicago six each, Fall River one. From

malarial fever, New Orleans 10, Brooklyn six, New York and Baltimore three each, Philadelphia and Nashville one each. From whooping-cough, New York eight, Brooklyn four, Philadelphia and Baltimore two each. From measles, New York seven, Chicago two, Philadelphia, Brooklyn, Worcester and Fall River one each. From cerebro-spinal meningitis, New York four, Boston two, Chicago and Chelsea one each. From erysipelas, New York one.

The meteorological record for the week ending November 3, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week end'g	Barom-eter.	Thermometer.		Relative Humidity.		Direction of Wind.		Velocity of Wind.		State of Weather.*		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	S. A. M.	S. P. M.	Daily Mean.	S. A. M.	S. P. M.	S. A. M.	S. P. M.	Duration Hours & Min.	Amount in Inches.
Saturday, Nov. 3, 1888													
Oct. 28	29.77	58.0	63.0	50.0	100	59	89.0	S. W.	N. W.				
" 29	29.77	45.0	52.0	42.0	64	57	60.0	S. W.	N. W.	R.	O.		.33
" 30	30.16	40.0	47.0	38.0	59	52	56.0	S. W.	N. W.	F.	C.		.04
" 31	30.25	46.0	58.0	34.0	55	35	45.0	S. W.	S. W.	T.	C.		
Nov. 1	30.26	57.0	74.0	41.0	62	65	66.0	S. W.	S. W.	F.	C.		
" 2	30.08	58.0	72.0	52.0	79	69	74.0	S. W.	S. W.	O.	C.		
" 3	29.83	56.0	68.0	48.0	76	67	72.0	S. W.	S. W.	O.	C.		
Means for the Week.	30.02		62				65					2.30	.65

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM NOVEMBER 3, 1888, to NOVEMBER 9, 1888.

NORRIS, BASIL, lieutenant-colonel, surgeon, will be relieved from duty in the Department of the Columbia by the commanding general of that department, and will report in person on or before November 14, 1888, to the commanding general Division of the Pacific for duty as medical director of that division and of the Department of California. Par. 14, S. O. 255, A. G. O., Washington, November 1, 1888.

By direction of the Secretary of War, Lieutenant-colonel Edward P. Vollum, surgeon, on being relieved from duty as medical director Department of Texas by Lieutenant-colonel Joseph C. Bailly, assistant medical purveyor, under War Department order dated October 31, 1888, S. O. No. 255, will report to New York City, assume the duties of acting assistant medical, and take charge of the medical purveying depot at that place. Par. 2, S. O. 255, A. G. O., Washington, November 1, 1888.

ALEXANDER, CHARLES T., lieutenant-colonel, surgeon, is relieved from further duty in the Department of Dakota, and will report in person to the commanding general Department of the Columbia for duty as medical director of that department. Par. 14, S. O. 255, A. G. O., Washington, November 1, 1888.

BAILLY, JOSEPH C., lieutenant-colonel, assistant medical purveyor, is, at his own request, relieved from the charge of the medical purveying depot in New York City, and is, by direction of the President, under the provisions of the Act of Congress, approved June 23, 1874, assigned to duty as surgeon in the Medical Department. He will report in person to the commanding general Department of Texas, for assignment to duty as medical director of that department, to relieve Lieutenant-colonel E. P. Vollum, surgeon. Par. 1, S. O. 255, A. G. O., Washington, November 1, 1888.

By direction of the Secretary of War, Lieutenant-colonel Joseph C. Bailly, assistant medical purveyor, will transfer at once the public funds for which he is now responsible to Captain Henry Johnson, medical storekeeper, who will assume temporary charge of the medical purveying depot in New York City, retaining charge thereof until relieved in person by Lieutenant-colonel E. P. Vollum, surgeon, under his assignment as acting assistant medical purveyor, to whom Captain Johnson will then transfer the public funds. Par. 1, S. O. 257, A. G. O., Washington, D. C., November 3, 1888.

By direction of the Secretary of War, leave of absence for two months, to take effect on the completion of his present duties, is granted Major Henry McHenry, surgeon, United States Army. Par. 3, S. O. 256, A. G. O., Washington, D. C., November 2, 1888.

EWEN, CLARENCE, captain, assistant surgeon, is relieved from duty at Fort Sidney, Neb., to take effect on the expiration of his present leave of absence, and will report in person to the commanding officer Madison Barracks, N. Y., for duty at that post. Par. 2, S. O. 258, A. G. O., Washington, November 3, 1888.

APPEL, DANIEL W., captain, assistant surgeon, is relieved from duty at Fort Davis, Texas, and will report in person to the commanding officer Fort Sill, Ind. Ter., for duty at that post, reporting by letter to the commanding general Department of the Missouri. Par. 2, S. O. 258, A. G. O., Washington, November 5, 1888.

Leave of absence for one month, with permission to apply for an extension of one month, is granted Captain J. Van R. Hoff, assistant surgeon, S. O. 134, Headquarters Department of the Missouri, Fort Leavenworth, Kans., November 1, 1888.

PRICE, CURTIS E., captain, assistant surgeon, for two months, with permission to apply for an extension of ten days. Par. 2, S. O. 257, A. G. O., Washington, November 3, 1888.

WOODS, MARSHALL W., captain, assistant surgeon, for one month, with permission to apply for an extension of ten days. Par. 2, S. O. 257, A. G. O., Washington, November 3, 1888.

By direction of the Secretary of War, Captain John J. Cochran, assistant surgeon, is relieved from temporary duty at Headquarters Division of the Pacific, and will report in person to the commanding officer Fort Adams, R. I., for duty at that post. Par. 2, S. O. 256, A. G. O., Washington, November 2, 1888.

By direction of the Secretary of War, Captain Norton Strong, assistant surgeon, is relieved from duty in the Department of Arizona, and will report in person to the commanding officer Fort Schuyler, New York, for duty at that post, and by letter to the commanding general Division of the Atlantic. Par. 4, S. O. 255, A. G. O., Washington, November 1, 1888.

KAUS, W. O., Jr., captain, assistant surgeon, Fort Leavenworth, Kans., will proceed at once to Fort Sill, Ind. Ter., and report to the commanding officer for temporary duty at that post. Headquarters Department of the Missouri, S. O. 133, par. 1. Fort Leavenworth, Kans., October 30, 1888.

By direction of the Secretary of War, 1st Lieutenant James D. Gheenan, assistant surgeon, recently appointed, will report from this city to Willet's Point, New York, and report in person to the commanding officer of that post for duty. Par. 3, S. O. 255, A. G. O., Washington, November 1, 1888.

By direction of the Secretary of War, 1st Lieutenant Alfred E. Bradley, assistant surgeon, recently appointed, will report in person to the commanding officer David's Island, New York, for duty at that depot, reporting by letter to the superintendent of the recruiting service, New York City. Par. 14, S. O. 256, A. G. O., November 7, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING NOVEMBER 19, 1888.

DICKINSON, D., surgeon. Ordered to Naval Hospital, Mare Island, Cal.

BRADLEY, G. P., surgeon. Detached from Naval Hospital, New York and to "Iroquois."

PERSONS, R. C., surgeon. Detached from Army and Navy Hospital, Hot Springs, Ark., and to Naval Hospital, New York.

NORFLEET, ERNEST, passed assistant surgeon. Detached from Naval Hospital, Mare Island, Cal., and to the "Trenton."

HARRIS, H. N. T., assistant surgeon. Detached from Naval Hospital, Mare Island, Cal., and to the "Kearsarge."

SAYRE, J. S., assistant surgeon. Ordered to examination for promotion.

BYER, H. G., passed assistant surgeon. Detached from "Trenton," and granted six months leave, with permission to leave the United States.

PATRICK H. BRYANT and **LUTHER L. VON WEDERIND**. Commissioned assistant surgeons, U. S. Navy.

APPOINTMENTS.

DR. JOSEPH P. DWYER, the originator of intubation of the larynx, has been appointed Professor of Diseases of Children in the New York Post-Graduate Medical School and Hospital.

DR. R. J. HALL has been appointed Professor of Anatomy in the College of Physicians and Surgeons at New York.

DR. CHARLES MCBURNEY has been appointed Adjunct Lecturer on Surgery in the same school.

BOOKS AND PAMPHLETS RECEIVED.

Diseases of the Skin: Their Descriptions, Pathology, Diagnosis, and Treatment. By H. Radcliffe Crocker, M. D., Lond., etc., etc. With seventy-six illustrations. Philadelphia: P. Blakiston, Son & Co. 1888.

Students' Guide Series. The Diseases of the Chest, including the Principal Affections of the Pleura, Lungs, Pericardium, Heart, and Aorta. By Vincent D. Harris, M.D., Lond., F.R.C.P., etc., etc. With fifty-five illustrations. Philadelphia: P. Blakiston, Son & Co. 1888.

The Dispensary of the United States of America. By Dr. Geo. B. Wood and Dr. Franklin Baker. 18th edition rearranged, thoroughly revised, and largely rewritten. With illustrations by H. C. Wood, M.D., LL.D., Joseph P. Remington, Ph.M., F.C.S.; and Samuel Sautter, Ph.D., F.C.S. Philadelphia: J. B. Lippincott Company, 1888.

Original Articles.

THE DIAGNOSIS AND MEDICAL TREATMENT OF ACUTE INTESTINAL OBSTRUCTION.¹

BY REGINALD H. FITZ, M. D.,

Professor of Pathological Anatomy in Harvard University, and Physician to the Massachusetts General Hospital.

OBSTRUCTION BY ABNORMAL CONTENTS.

ACUTE obstruction of the intestines by abnormal contents, as biliary and intestinal calculi, more or less inspissated fæces and foreign bodies, form a series, where plugging of the bowel is the immediate cause of the disturbance.

Foreign bodies introduced into the mouth and rectum, and there causing symptoms of acute obstruction, are so immediately recognized and their treatment so apparent, that they require no consideration in the present communication. If taken into the mouth they usually offer no difficulty of diagnosis, if intestinal obstruction is to follow. The etiology is usually clear; the symptoms, as shown in the three cases of this sort occurring during the past eight years, are so mild, that the chief, if not the sole, evidence of obstruction was the absence of a stool for three days in two instances, and for twelve days in a third. Pain and nausea or vomiting were absent, except in an infant of twelve months, who had swallowed wool-fibres. There was no tympany. A soft tumor near the cæcum, on the fourth day of absent stools, was found in one case, and was probably composed of lumbrici. There were no associated symptoms to suggest a more serious cause of tumor in the cæcal region.

There were two cases of intestinal calculi which offered grave symptoms of obstruction. The calculus in one case was composed of shellac. in the other of date seeds and gritty material.

The number of cases of obstruction from abnormal contents is thus reduced to twenty-three of biliary calculi, nineteen of fæces, and two of enteroliths, making forty-four in all.

This number may seem small, but in a critical consideration of reported cases, it is necessary to exclude many as doubtful. This is especially true with regard to gall-stones and fecal masses. If the patient dies, and a gall-stone obstructs the bowel, the evidence furnished is rarely sufficient to exclude the possibility of the obstructive symptoms resulting from a peritonitis. The latter, occasioned, not by the presence of the calculus in the bowel, but by the destructive processes associated with its entrance into the gut. Medical treatment in this class of cases may often prove efficient, since the symptoms of obstruction may be due to the peritonitis and not to the plugging.

Similar statements hold true with regard to reported cases of obstruction from fæces. If fecal tumors are found, and symptoms of intestinal obstruction are present, it by no means follows that the symptoms are immediately due to the fæces. An associated peritonitis from an inflamed appendix is of frequent occurrence, and alone suffices to suggest the diagnosis of obstruction. With the presence of a fecal tumor the diagnosis seems to

be substantiated. The analysis which is to follow will show, however, that enormous fecal accumulations may exist, and very few symptoms arise to suggest an attack of acute internal obstruction.

The sex of the cases of obstruction from abnormal contents, is as follows:—

	Gall-stones.	Fæces.	Enteroliths.	Total.
Males	5	8	2	15
Females.....	13	11	0	29
	23	19	2	44

Obstruction from gall-stones thus occurred among females in two-thirds of the cases; while in obstruction from fæces the question of sex is not important.

The age at which the obstruction occurred is seen in the following table:—

YEAR OF AGE.	Gall-stones	Fæces.	Enteroliths	Total
At 8.....		1		1
From 10—20.....		4		4
20—40.....		4		4
41—45.....	1	0		1
45—50.....	3	0		3
50—55.....	3	2	1	6
55—60.....	6	2		8
60—65.....	3	4		7
65—70.....	3	1		4
70—75.....	2			2
75—80.....	1	1		2
	22	19	1	42

It is thus apparent that obstruction from gall-stones occurred only in adults, and after the age of fifty years, in six-sevenths of the cases; that obstruction from fæces may occur at any time of life; while enteroliths were found in adult life.

In eleven cases, nearly one-half, of obstruction from gall-stones there was a previous attack attributed to biliary calculi. In the nineteen cases of fecal obstruction, habitual constipation, often no defection for several weeks, was almost invariably present.

The shellac-calculus was present in a cabinet-maker who was accustomed to drink an alcoholic solution of shellac. In the cases of fecal obstruction loose defections were occasionally noticed, although the bowels contained large quantities of fæces.

The accompanying table shows the date and relative frequency of the important symptoms of obstruction from gall-stones:—

DATE.	Pain.	Nausea or Vomit.	Fæcal vomit.	Tympany.
1st day.....	13	10		1
2nd day.....		2	1	1
3rd day.....		1	3	1
4th day.....		1	1	2
5th day.....			2	3
Later or not given....	6	3	7	5
	19	17	14	13

¹ Continued from page 472.

Abdominal pain was the initial symptom of the attacks of obstruction in two-thirds of the cases. It was usually sudden, severe, or intense, sometimes described as griping. It was exactly localized on the first day in but two cases. In one the seat was referred to the epigastrium, in the other to the hypogastrium. After the first day the pain was referred to the epigastrium in four cases, to the navel in two, to the hypogastrium in two and to the right iliac fossa in one.

Nausea or vomiting was present on the first day in about three-fifths of the cases. The vomit was inky in one case on the third day, and bloody in another on the fourth day. It was slight in two cases. Faecal vomit was present in nearly two-thirds of the cases of obstructing gall-stones, and, as far as could be ascertained, most frequently on the third day.

Tympany was present nearly as often as faecal vomiting. It was usually slight or not excessive, and was repeatedly stated to have been absent.

A tumor was rarely noticed. Once in the right iliac fossa, and proved to be the calculus. Twice at the navel on the third day. It is stated to have been as large as a child's head in one of these cases. The tumor was present in the left inguinal region in one case, and once was found on rectal examination.

The temperature was as high as 101° F. in one case and between 99° F. and 100° F. in three cases on the fourth and fifth days. In the majority of cases it was either normal or subnormal.

Jaundice and hiccough were symptoms in but two cases of gall-stones, and these occurred early. The urine was diminished in quantity in five instances, being noted as scanty on the second, fourth, and fifth days, and as absent on the sixth day. Once it contained cholesterine discharged from the rectum.

Of the twenty-three cases of obstruction from gall-stones there were thirteen deaths and ten recoveries. Twelve cases were treated medically and eleven surgically; of the former eight recovered and four died; of these latter one on the fifth, seventh, and tenth days respectively, and one on a date not given.

In the cases of recovery the calculi were passed on the fourth, fifth (in two cases), tenth, fourteenth, fifteenth, seventeenth, and twentieth days.

Surgical interference took place as follows:—

Date.	Number of Cases.	Recovery	Death and Date.
3rd day	1	0	1 8th day.
4th "	1	0	1 4th "
5th "	1	0	1 5th "
7th "	2	1	1 7th "
8th "	2	0	2 8th "
9th "	1	0	1 14th "
15th "	1	0	1 18th "
Not given	2	1	1 Not given.
	11	2	9

The seat of the calculus in the fatal cases was the ileo-caecal region in four, the jejunum in three, the ileum in three, the small intestine in two, and the duodenum in one case.

Since all the operative measures after the seventh day terminated fatally, and five cases recovered after this date under medical treatment alone, the condition of the patient must determine the treatment to be followed.

In faecal obstruction pain at the outset was rare. It was present in six cases only, one-third of the whole number, and was absent on the fifth day in one instance, on the fifteenth in two, and on the twentieth in one. It was seated in the right iliac fossa, in the region of the stomach and liver, and in the left iliac fossa each in one case.

Nausea or vomiting was present in nine cases and absent in ten. It was of late occurrence, the date being stated in only three cases, in these on the fifth, fourteenth, and nineteenth days. It was faecal in but three cases and in these the only date assigned was the twentieth day.

Tympany was present in rather more than a third of the cases, and usually at a late date, after the first week. The abdomen of a child measured thirty-one inches, of an adult forty-three inches in circumference.

An abdominal tumor was noted in about one-half of the cases of obstruction from faeces. It occupied the entire abdomen in three instances, was situated in the left lumbar region in two, in the left hypochondrium, the left iliac fossa, the right side and right iliac fossa each in one case. The tumor was described as elongated, rounded, nodular, slightly movable, hard, dull. Scybala were occasionally to be felt in the rectum.

The temperature was rarely above the normal. The urine was scanty on the fifteenth and twentieth days in two cases of faecal obstruction.

The seat of the obstruction was the large intestine, and its lower part was more often involved than the upper. This evidence is in favor of the view that the faecal tumor in so-called stercoral typhilitis is rather the result of an inflamed appendix than the cause of an inflamed caecum.

There were fifteen recoveries and four deaths among these cases. In one the death was due to perforation of the bowels, in another it was attributed to pulmonary congestion, and in two there was no obvious anatomical cause.

In the cases which recovered the obstruction lasted from two to three weeks in three cases, from three to four, four to five, five to six weeks, one in each period, and in one case it lasted for four months.

The medical treatment consisted of large enemata, irrigations, electricity, and various purgatives. Laparotomy, colotomy, and division of the anus were each performed in one instance.

It is obvious from the above consideration that obstruction from faeces may be excluded from the series of acute, internal, mechanical obstructions, because abdominal pain, tympany, and faecal vomit were rare and late, while nausea or vomiting was also of late occurrence. A tumor was present in half the cases, and was characteristically faecal. Fever was absent. Furthermore, rectal injections are likely, at once, to give positive evidence of faecal obstruction.

The rarity of obstructing intestinal calculi was such that they may practically be disregarded. If present, their significance is that of gall-stones.

STRICTURES AND TUMORS.

Malignant disease and strictures of the intestine, and abdominal tumors outside the intestine, are sometimes the cause of symptoms of acute obstruc-

tion, and the former may require consideration in differential diagnosis.

There have been fifteen cases of such strictures and tumors of the intestine since 1880, of which ten occurred among females and five among males.

The age of these patients was as follows:—

Years of age.	Number of cases.
From 21-30	2
" 30-40	1
" 40-50	3
" 50-60	4
" 60-70	5
—	—
	15

Four-fifths of the cases thus occurred after the age of forty, and three-fifths after the age of fifty years.

In two-thirds of the patients antecedent symptoms of abdominal disturbance were present as follows:—

Chronic abdominal pain	in 3 cases
Constipation	" 3 "
Irregular and bloody discharges	" 1 "
Rectal uneasiness	" 1 "
Previous attacks	" 1 "
Hernia.....	" 1 "
	10

The date and relative frequency of the important symptoms of intestinal obstruction from the strictures and tumors is shown in the following statement:—

DATE.	Pain.	Nausea or Vomit.	Tympany.	Tumor.
1st day.....	8	4		
2d "	1	1		
3d "		2	1	
4th "		1	1	
5th "		1	1	
6th "			3	
Later or not given....		3	4	4
	9	12	10	4

Although pain was the first symptom in one-half of the cases, in two the attacks began with constipation. The pain was seated in the lower abdomen in three instances.

The vomit became faecal in five cases; the earliest late was the third day. The tympany might be enormous on the third day, or moderate on the sixth day.

A tumor was perceptible by rectal examination in two cases, and by palpation in the iliac fossæ each in one case. In three instances there were visible intestinal coils.

The temperature was not elevated before the sixth day, was never higher than 102.2° F., and then not till the tenth day.

The lesion and its seat were as follows:—

Cancer of the sigmoid flexure	in 5 cases.
" " rectum	" 3 "
" " colon	" 2 "
" " caecum	" 1 "
Stricture of the ileum	" 1 "
" " caecum	" 1 "
" " colon	" 1 "
" " rectum	" 1 "
	15

The obstruction was thus of the large intestine in fourteen cases, and of the small intestine in but

one instance. It was situated in the left iliac fossa or pelvis in nine cases, nearly two-thirds of the whole number, and in the right iliac fossa in two cases. The seat was thus in the lower abdomen in nearly four-fifths of all the cases of acute obstruction from strictures and tumors.

Of the fifteen cases eleven died and four recovered from the immediate symptoms of obstruction. The nature of the lesions is such that surgical treatment alone offers hope. In eight cases where death occurred without surgical treatment, it took place on the fourth, fifth, eighth, twelfth, eighteenth, and fifty-fourth days each in one case, and on the seventeenth in two cases.

Surgical treatment was employed in seven cases, with the following immediate result:—

Date of operation	Number of cases.	Recovery.	Date of death.
5th day.....	1	1	0
7th ".....	1	1	0
8th ".....	1	0	1, after 9 weeks.
9th ".....	2	2	0
14th ".....	1	0	1, 17th day.
Not given.....	1	0	1, same day.
	7	4	3

(To be continued.)

SOME POST-HEMIPLEGIC DISTURBANCES OF MOTION IN CHILDREN.¹

BY PHILIP COOMBS KNAPP, A. M., M. D.

Physician to Out-Patients with Diseases of the Nervous System, Boston City Hospital; Clinical Instructor in Diseases of the Nervous System, Harvard Medical School.

Is a paper¹ which I had the honor of presenting to this Association a year ago, I spoke of the frequent occurrence of post-hemiplegic disturbances of motion in cerebral infantile paralysis. Certain forms of these disturbances have been carefully studied and are well known, among them being athetosis and post-hemiplegic chorea; other forms, such as ataxia, post-hemiplegic paralysis agitans, and post-hemiplegic pseudo-sclerosis, are less common. It is not my purpose, however, to speak in detail in this paper of these various forms of post-hemiplegic disturbance of motion. The exhaustive treatise of Greidenberg² renders such a task unnecessary, but it may be well to cite for reference the elaborate classification which he makes of these phenomena—the most thorough schedule that has yet appeared.

	<table border="0"> <tr> <td rowspan="3">Contractures</td> <td rowspan="3">{</td> <td>Apoplectic</td> <td rowspan="3">{</td> <td>Spasms</td> <td rowspan="3">{</td> <td>Clonic.</td> </tr> <tr> <td rowspan="2">Early.</td> <td rowspan="2">Muscular rigidity.</td> <td>Tonic.</td> </tr> <tr> <td>Intermitting.</td> </tr> <tr> <td></td> <td></td> <td>Late</td> <td></td> <td>Constant, continuous, fixed, changeable (latent).</td> <td></td> <td></td> </tr> </table>	Contractures	{	Apoplectic	{	Spasms	{	Clonic.	Early.	Muscular rigidity.	Tonic.	Intermitting.			Late		Constant, continuous, fixed, changeable (latent).			
Contractures	{			Apoplectic		{		Spasms			{	Clonic.								
				Early.				Muscular rigidity.	Tonic.											
		Intermitting.																		
		Late		Constant, continuous, fixed, changeable (latent).																
Increased tendon reflexes.																				
Associated movements.																				
		{ Reflex—clonus.																		
Tremors		{ Essential		Tremor proper.																
				In the form of paralysis agitans.		Mixed forms in different combinations.														
				In the form of disseminated sclerosis.																
Hemichorea		{ Constant.																		
		{ On intended movement—disturbance of co-ordination (hemiatasia).																		
Athetosis																				

The following cases present a form of post-hemiplegic disturbance of motion which, on analysis, can be made out to be a combination of some of the

¹ Read before the American Neurological Association at the First Triennial Congress of American Neurologists and Surgeons, 20th September, 1888.

² Hemiplegia in Childhood. *Journal of Nervous and Mental Disease*, August 1897.

³ B. Greidenberg. Ueber die posthemiplegischen Bewegungsstörungen. Archiv f. Psychiatric, xvii. 131, 1886.

forms in Greidenberg's table, but which have not yet been thoroughly described.

Observation I. George E., three and a half years. First seen June 15, 1887. History of epilepsy in mother's family, and his mother herself is epileptic, having had two convulsions during pregnancy. He is the first child; was born after an easy labor of twelve hours' duration, without the use of instruments, the head presenting. No history of injury. He was a backward child, and did not sit up until the age of two. At present he can stand and walk a step or two with support, but usually does not attempt it, getting about by creeping. He has had one attack in the night, probably convulsive, of which no details could be obtained. Ever since he began to use his limbs his mother has noticed that he could not use his left arm well, and that his right leg was not as good as the left. He is said to be bright, to be able to sing with fair correctness, to repeat little verses, and to have a good memory. The speech, however, to a stranger is quite indistinct. He breathes through the mouth, drools constantly, and has some slight difficulty in swallowing. He is subject to colds, as the clothing over his chest is constantly wet from his drooling. The appetite is dainty, and he has a delicate stomach. He still soils himself occasionally. The child is well developed, with no deformities, the two sides being symmetrical. The head is nineteen and three quarter inches in circumference. The left leg and arm are held rather rigidly, and there is inco-ordination when he tries to use the left hand, the movements being awkward and jerky, but there are no involuntary movements when the arm is at rest, with one exception. When he makes a movement elsewhere, there is often an associated movement of the left arm. The arm is rotated inwards, extended at the elbow, flexed and pronated at the wrist, and flexed at all the phalangeal joints; Individual movements of the arms, hands, and legs seem fairly well done, except (dorsal) extension of the right foot. The passive (dorsal) extension of the left foot reveals a slight constant rigidity. On attempting to walk, he walks with both feet inverted, and the right leg at times gives out. The left forefinger is usually kept clenched in the palm. Sensation, reflexes, and electrical reactions showed nothing unusual. There was nothing abnormal discovered in the movements of the face and eyes. He was referred to Dr. F. H. Hooper, who found a narrow, high-arched palate, and a mass of adenoid vegetations in the naso-pharynx, which were removed, relieving the drooling considerably. In September he had a convulsion, which his mother attributed to indigestion. In October his general health was better, and he got about better. In October there was considerable inco-ordination of the left hand and a little of the right. The left hand was fairly strong. The gait was unsteady, the right foot being twitched after him. The associated movement above described persisted, and he still drooled somewhat. He crept rapidly, jerking his legs under him, and throwing his feet up in the air. January 4th, 1888, the condition was practically unchanged. He was beginning to walk a little, and his movements were less irregular and stronger. The inco-ordination and associated movements persisted. Some months later I received a

letter from the family physician, telling me that the child had had more convulsions, still attributed to indigestion.

Observation II. Grace S., seven years. First seen May 11, 1887. Family history negative; first child. The labor was protracted and difficult, lasting from Tuesday until Friday. Forceps were used; the head after delivery was out of shape, and for some time there was a great question about resuscitating her. Her physician told me that she was nearer dead than any child he ever saw that recovered. She was always a large, fat child. At six months she had diarrhoea, and after that she could not sit up like other children. She sat alone at two, crept at three and a half, talked at four, and began to walk alone at five. About two years ago she began to have attacks at night, in which she became rigid, moaned, and frothed at the mouth, the arms twitched, and the right arm shook. After this she could not keep still. She never had more than twelve of these attacks. Her left side has always been the most affected, and she can use the left arm but little. When she does not feel well, the left hand will sometimes open and shut involuntarily. She is reported to be unusually bright in many ways, to have an excellent memory and a large "bump of order." She notices quickly, and likes to help about the house. Lately, for no reason that she can give, she cries when left alone. She now sleeps well, but until she was three or four years old she slept very little, waking and screaming, apparently from pain. She talks a great deal, although her speech is nasal and very indistinct, but she understands what is said, and never uses the wrong word. She drools constantly, and takes cold easily. She breathes through the mouth, which is constantly kept open. She can swallow only liquids and soft food. When about five years old she had massage, after which she began to walk. The child is well-nourished and well-developed, the left arm being a little larger than the right. The left parietal region is more prominent. There is right external strabismus. The open mouth and the constant drooling give the child the appearance of an idiot. The right disk is smaller, and there is a lack of pigment, but no vascular changes. She can move the left arm but little, and the hand hardly at all, and the movements of the right hand are uncertain and not co-ordinated. The left arm is rigid, and kept rotated inwards and carried a little backwards, hyper-extended at the elbow, flexed and pronated at the wrist, and the fingers flexed over the thumb, which is between the fore and middle fingers. This rigidity relaxes somewhat at rest, but is heightened by any attempt at motion of either arm, or by excitement. Motion of the left hip and knee is fairly good; at the ankle there is slight motion, but the foot is held with some rigidity in equino-varus. The gait is peculiar; she walks on the left toe, the foot being inverted, and the left leg is weaker, giving out occasionally; the right foot goes first, and the left leg is dragged after it, crossing the right, while the body is thrown forward at the hips, and progress is toward the right. On exertion or excitement there is also some rigidity of the right leg. She uses the right hand very slowly and awkwardly to pick up things, and the effort brings on associated movements in the left

side,—either the spasm of the arm above described, or a similar spasm, except that the hyper-extension of the elbow is replaced by semi-flexion, or the hand is opened. The toes of the left foot are also extended (dorsally) and the inner edge of the foot is turned upwards—a form of associated movement to which Strümpell⁴ has called attention. There is also great inco-ordination of the left hand, which she cannot open herself; but at times it opens on associated movements. When opened passively, the hand shuts slowly. There is less loss of power than inco-ordination. The tongue is protruded with difficulty. The knee jerks are little, if at all, exaggerated; there is no ankle clonus; the other reflexes and the electrical reactions show nothing unusual. As in the former case, Dr. Hooper found adenoid growths, which he removed, causing a marked improvement in the drooling, speech, swallowing, and general expression; the child ceased to look like an idiot. Massage and light gymnastics have aided the other conditions somewhat.

Observation III. M. L., female, six. Seen with Dr. Boland, of South Boston, October 7, 1886, and January 22, 1887. No nervous heredity could be discovered, and the family history, so far as known, is good. The child has been in the charge of a very intelligent woman, who has observed her with great care. During pregnancy an unsuccessful effort was made by the mother to induce an abortion, which she now thinks the cause of the child's condition. Labor came on at term, without any accident. For the first nine months the child is said to have cried most of the time. At no time has there been a history of any illness more than the ordinary complaints of childhood. Since nine months of age, she has been in her present condition of constant muscular rigidity. She is unable to stand without support, but when held up by the arms she can bear most of her weight on the feet, although she says her left leg is "n. g." (no good). Examination showed a dislocation of the left hip, probably congenital. She presents no deformity or muscular atrophy; the muscles are well developed, and even slightly hypertrophied. Her nurse states that at times the muscular rigidity ceases for a minute, and she becomes more limber. The rigidity is greater in the morning and in bad weather. She can neither stand nor sit, but either lies on the floor or is slung by the arms to a spiral spring in the doorway, which she enjoys very much. Any movement, touch, or excitement exaggerates the spasm. At times she has crying and screaming spells. She can move her head very well, and can roll over. She will not stay on her back, and can be put there only with difficulty. If put on her back, she rolls over to the left side with some difficulty, and gets on her belly, which is almost the only voluntary movement, except of the head, which she makes. She does this when told to, as well as at other times, but the reverse process, from the belly to the back, cannot be performed. She sleeps on her belly, turning her head to the left, so as to lie on the right side of her face. During sleep she is very apt to raise the left arm from the bed, letting it fall with such force upon

her face as to hurt herself, so that her nurse ties that arm to the side of her crib. At times she gets a little blue about the lips. Except for occasional attacks of diarrhoea she seems well, and makes no complaint. She eats and sleeps well; she has perfect control over her sphincters. Mentally she is said to be unusually bright. Her speech, however, is very indistinct, so that it can be understood only with difficulty. The trouble, however, is purely one of motor inco-ordination, for she talks readily, and always uses the proper words. Her disposition is remarkably sweet, and she is, except when she has a crying spell, of a very sunny and even temper. She has not been taught to read, but her memory is very good. She learns the words of little poems in her picture books on two or three repetitions; she enjoys music, catches the words and airs of the popular songs of the day, and can sing them herself in good tune and time. She knows and can name and distinguish the ordinary colors, takes a lively interest in what is going on about her, remembers me and calls me by name after three months. She enjoys watching the people on the street and the distant landscape, and seems to appreciate the beauty of a sunset. She is docile and obedient. The child is well developed, well nourished, the muscles a trifle hypertrophied. There is dislocation of the left hip. The vision is good, the pupils react to light, and the field of vision and ocular movements are normal. She keeps the mouth open, but can close it, and she does not drool. The tongue can be moved naturally in every direction. She has a habit of raising and lowering the under jaw rather stiffly, and of nodding the head slowly, especially when talking or excited. She can twist her head and shake it from side to side, but, as a rule, keeps it pretty well back. The body is kept rigid, the arms extended in the crucifixion attitude, her legs rigidly extended, the feet extended, inverted, and in (plantar) flexion,—the spastic position. On lifting her up and requesting her to touch an object, she seems to have a little power to move the arm backward from the plane of the body, but this, and the rolling over on to her belly, are the only voluntary movements, except of the head, which she can make. She never keeps her arms by her side. If anything is put into her hand the fingers close round it tightly, but without any voluntary action on her part—much as a little baby will grasp your finger. The entire body is kept in a ramrod-like rigidity, so that if you want to make her sit up, you must double her up by force, like a spring-bladed jack-knife, and hold her in position, so that she will not straighten out again. This same resistance to passive motion is noticed in all the muscles. At times she is limber enough to be made to bend the hips comfortably to sit in her nurse's lap, but any excitement or touch brings on this ramrod-like rigidity. Any attempt at passive motion is resisted with great strength. At times, however, the limbs seem to move, independently of the will, in a very awkward fashion, although with considerable power. The foot, for instance, is everted, the arms move, the legs are drawn up, but none of these movements can be performed by the will, and they all show marked inco-ordination. The sensation is normal. The muscular spasm was

⁴ A. Strümpell. Ueber einige bei Nervenkranken häufig vorkommende abnorme Mithbewegungen im Fusse und in dem Zehen. Neurolog. Centralblatt, 1 Jan. 1887.

such as to render any attempt to test the reflexes negative. The same may be said also of the electrical tests, although it was possible to get a response from the deltoid to the faradic current. The application of the poles elsewhere produced such an exaggeration of the spasm as to prevent the reaction.

In these three cases we have a cerebral infantile paralysis—a double hemiplegia in the last,—with a rather definite group of motor disturbances. The cases differ markedly, of course, from the forms of hemiplegia with late contracture and atrophy which I reported in my former paper.

This form of motor disturbance is unlike athetosis or post-hemiplegic chorea in that the spontaneous movements are rare; the phenomena are excited wholly or chiefly by intended movements, and the characteristic athetoid or choreic movements are absent. It differs moreover from the post-hemiplegic ataxia of Grasset⁵ in that other elements beside ataxia go to make up the picture. In Observation I., for instance, we see first a tonic spasm of the paralyzed side, increased by excitement, by efforts to use the affected side or even the other side, thus coming under the heading of a true associated movement. In Observation II. the character of an associated movement is so pronounced that we even find special forms of it described by Strümpell. This tonic spasm is certainly akin to the contracture of ordinary hemiplegia, yet it is, if I may be allowed the expression, more "active" than contracture, and less fixed in its type. In late contracture, there is a passive, fixed shortening of the muscles, which does not vary; this, on the contrary, resembles more the active contraction of voluntary movement. In addition to the tonic spasm and the associated movements, there is also, in Observation I. and II., a distinct loss of the power of co-ordination. In Observation III. the spasm predominates; associated movements are thrown so far in the background as almost to escape notice, and the spasm has so far overcome any volitional power over the muscles that inco-ordination is also a subordinate factor.

This symptom-complex—tonic spasm, associated movement, and inco-ordination—although, of course, merely one of Greidenberg's "mixed forms," seems to be a fairly distinct type of post-hemiplegic disturbance of motion. It is not very uncommon, and in my search through the literature of the subject I have found various cases reported under the headings of chorea or athetosis, notably by Fletcher Beach,⁶ and also by Clay Shaw⁷—"imbecility with ataxia." Gowers, moreover, has described a form of slow, mobile spasm following hemiplegia which is closely akin to this. As he first described it,⁸ the spasm was involuntary, but it was exaggerated on motion. Since then he has given a fuller description.⁹ "The most common form is that in which there is tonic spasm, slowly varying in relative degree in different muscles, and thus causing

slow, irregular movements, chiefly conspicuous in the hand, and slow, irregular inco-ordination. From this character it may conveniently be termed 'mobile spasm.' It is commonly conjoined with more or less permanent rigidity, which tends to fix the limb in a certain posture." This spasm may cease during rest, but it is renewed by any attempt at voluntary movement, which is disordered by the spasm, being rendered ataxic or inco-ordinate. With this slow, mobile spasm are often associated other involuntary movements, which may persist when the limbs are at rest, and may assume the character of athetosis or chorea. This type differs somewhat from the type I have described in being apparently more variable, and in having less associated movement combined with it.

Of the pathology little can be said. Gowers thinks that his "slow, mobile spasm" is especially common in those cases of meningeal hæmorrhage which he calls¹⁰ "cerebral birth palsy," but certainly it cannot be regarded as pathognomonic of a hæmorrhage, as the evidence of difficult parturition is lacking in some cases. I am not disposed to regard this condition as having any localizing character, not even as pointing to a lesion near the thalamus. In Observations I. and II. I am disposed to think the lesion was cortical, but I have seen this tonic spasm with inco-ordination as a transitory symptom at times in cases of ordinary chorea, where the symptoms were unilateral. I think that the most that can be said at present is that this "mixed form" of tonic spasm, inco-ordination, and associated movement, like most if not all of the other forms of post-hemiplegic disturbances of motion, points simply to a lesion of the pyramidal tract which either deranges the initiation of movement in the motor centres, or impairs the conduction of the motor impulse in the nerve fibres.

INTRA-UTERINE FETAL DEFORMITIES.¹

BY JOHN G. BLAKE, M.D.

The child whose photograph is shown is the eighth in the family. He is eleven months old, has always been healthy and robust, and is well developed, with the exception of the arms. His brothers and sisters present nothing abnormal in development. The birth of the child was perfectly natural, of moderate duration, and presented no features of interest. The case occurred in the practice of Dr. C. C. Street, of Boston.

No bands of lymph were found attached to the deformed extremities, and no portions of the missing members were found in the membranes. Dr. R. H. Fitz very kindly examined the child, and has sent me the following note in regard to it:—

18 Arlington Street.

DEAR DR. BLAKE:—I have seen your patient, and examined the infant as thoroughly as possible. The child appeared intelligent, and well formed, excepting in the upper extremities. The right was represented by a stump, movable at the shoulder, apparently consisting of a single bone, flattened at the free end. The skin covering the latter bore a ruff-like projection.

The left upper extremity apparently consisted of

⁵ J. Grasset. D'une variété non décrite de phénomène pathologique (Forme hémistatique). Le Progrès Médical, 13th Nov., 1880.

⁶ Fletcher Beach. On Cases of Athetosis. British Med. Journal, 12th June, 1886.

⁷ T. Clay Shaw. On Athetosis, or Imbecility with Ataxia. St. Bartholomew's Hospital Reports, ix, 130, 1873.

⁸ W. R. Gowers. On "Athetoid" and Post-hemiplegic Disorders of Movement. Medico-Chirurgical Transactions, lx, 219, 1876.

⁹ W. R. Gowers. A Manual of Diseases of the Nervous System, ii, 79, 1888.

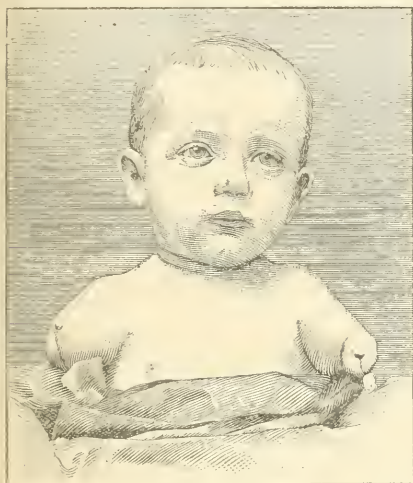
¹⁰ W. R. Gowers. Clinical Lecture on Birth Palsies. Lancet, 14, April, 1885.

¹ Read before the Obstetrical Society of Boston, October 13, 1888.

an arm, fore-arm, and two fingers; all stunted. It was movable at the shoulder and a second joint below suggested an elbow. The fingers grasped firmly. It was impossible to determine the nature of the bone or bones of the lower part of this deformed extremity. Forster calls it a *perobranchius*. The mother stated that the attached end on both sides had grown since birth, and that on the left the upper segment grew more rapidly than the lower.

The concurrence of the arrest or modification of development at the two sides is interesting as suggesting a common cause. If this be admitted, the case would oppose the view that the deformity on the right was the result of an intra-uterine amputation from the cord or a band, since the deformity on the left cannot be thus explained. Yours sincerely,

R. H. Fitz.



The first explanation of the congenital absence of some portion of an extremity is furnished by Haller,² the deformity being attributed to an arrest of development. He fortified this theory with the assertion that the parts lacking were not found escaping from the foetal membranes.

In 1812 Chaussier reported cases, and in one instance the separated portion of an arm and hand was found. He considered this to be an amputation in utero, and originated the theory of gangrene to explain the phenomenon.

Montgomery,³ with an interest in the subject, fortunately observed a case, where, in a five months' foetus, cords or threads of tissue ligatured the hands and ankles. This established in Montgomery's mind the agency of threads, or cords, of tissue in spontaneous amputation, and later he published an elaborate essay containing many cases supporting his theory.⁴

Sir J. Y. Simpson upheld Montgomery's theory,

² *Elementa Physiologica Corporis Humani*, 1778.

³ *Dublin Journal of Medical Science*, vol. 1, p. 140.

⁴ *Essay on Spontaneous Amputation of the Foetal Limbs in Utero*.

and collected several cases; he suggested that fracture might cause an amputation, and at times the umbilical cord might be an efficient agent.

Later (1850), Martin asserts his belief that violence from some "external cause" must operate to render an amputation complete; but Montgomery combats this view, averring that the bones in their semi-cartilaginous state could be easily and completely divided by constricting bands. Still several cases reported seem to show that injuries to the mother during pregnancy are active in causing congenital deformities.

Gurlt⁵ asserts that the bands or threads have their origin in the foetal development; they are prolongations of the egg-membrane, whether from the navel-bladder or amnion.

In 1862 Virchow advanced the view that an inflammation of the undeveloped limb gave rise to a cicatrix, which by contracting prevented the development of the part. Simonact modifies Montgomery's view by assuming that pressure of the constricting band is followed by ulceration; a cicatrix resulting from this contracting amputates the member. But Mundé⁶ says the evidence that intra-uterine amputation by bands or threads occurs cannot be gained.

In the same article a good summary of the theories is given as follows by Mundé:—

- a. Arrest of development.
- b. Gangrene.
- c. Detachment by means of ligaments; detachment by means of amniotic bands.
- d. Constriction in consequence of cicatrices produced by dermatitis.
- e. Fracture.
- f. Arrest of development through cicatrices of inflammatory origin.
- g. Constriction through the umbilical cord.
- h. Abnormal shortness of the cord.

The pathology of spontaneous intra-uterine amputations has not yet been demonstrated satisfactorily.

The umbilical cord is not infrequently a constricting agent; but no case is reported where a complete amputation is proved from this cause. Even if complete amputation did occur, little evidence could be found pointing to the funis as the cause. The rule is, in these cases that interference with the circulation of the umbilical cord causes the early death of the foetus, as most amputations occur in the early months.

The origin of the threads of tissue is explained by Montgomery by supposing that, as a result of inflammation at any joint, lymph is thrown out and becomes organized, taking the form of threads, as it is known to do in other situations.

Gurlt's view of the amniotic origin of the bands was made more complete by G. Braun in 1854, who believes that the small amount of liquor amnii allows the amnion to come in contact with the foetus. Adhesions then form, and, with the growth of the embryo, a fold of amnion is drawn out, becoming later the amputating agent. According to Hager,⁷ Rokitsansky, Schaller, Hecker, and Fürst hold this view.

Noeggerath⁸ speaks of amniotic bands as un-

⁵ *Med. Zeitung*, Jan., 1852.

⁶ *Boston Med. and Surg. Jour.*, July, 1873.

⁷ *Drei Neue Fälle von Spontan-Amputation*, 1879.

⁸ *Am. Jour. Obst.*, N. Y., 1872, iv. 727.

doubtedly the cause of a partial amputation described. The bands were the result of more or less circumscribed inflammation of the amnion, from which there had been an exudation. The fetal member, being in contact at the time, became agglutinated, and the exudation organized and contracted.

Mundé⁹ gives the result of a microscopic examination of the remnant of a band of tissue; this consisted of "young fibrous tissue (fusiform cells) intermingled at intervals with epithelium." This, Mundé says, speaks for its amniotic origin.

In the process of amputation the growth of the fetus drawing the bands tight, and possibly contraction of the band, gradually constrict the part ligatured. The parts pressed upon, muscles and bone, atrophy, and the extremity below the ligature ceases to develop or is stunted. The skin is carried inwards all the while, and finally the limb separates; and in some cases at birth a granulating surface exists at the end of the stump, while the other cases show a scar at the bottom of a dimple in the same situation.

The cases recorded embrace a great variety both in the situation of the amputating bands, and in the part or parts amputated. In order of frequency the parts ligatured are, first, fingers and toes, then the forearm and leg, and lastly the upper arm and thigh. The bands may run from any part of the fetus to the amnion, or between any two points of the fetus. The latter arrangement Montgomery considered an argument against the amniotic origin as claimed by Gurlt. The extreme to which amputation may go is shown in the cases reported, where all extremities are truncated, the arms near the shoulders, and the thighs at the pelvis. In one instance¹⁰ of this kind the child lived, and was expected to reach an age when artificial extremities could be applied. None of the missing extremities were found in the secundines in this case, a failure not at all rare. The explanation given is, that the amputation occurs in early fetal life, and the soft tissues may then be dissolved in the liquor amnii.

Simpson claimed that nature at times attempted repair, and cites cases that show rudiments of fingers on the stump, five little nodules with minute nails in a row existing in one case.¹¹

Other rare cases show well-formed fingers on the stumps. One case¹² is described where both arms were amputated; but there was one finger with four phalanges on right shoulder, and two fingers on the left stump. Sometimes other deformities, as club-foot or hair-lip, exist in a case of intra-uterine amputation, but not as a rule. Neither does any law of heredity operate.

As between arrest of development and amputation, where a part of an extremity is lacking at birth, the former idea has hardly been recognized since Haller's time, as finding illustrations in the class of cases considered. When the part is completely absent, no rudiment existing, and the bones and tissues are apparently normally developed to the line of loss, the inference is that the parts beyond once existed, but were lost by amputation. Add to this the presence of a scar, usually dimpled,

and the evidence accumulates: and when the missing part is found at birth, no question can be raised as to the process.

My thanks are due to Dr. W. E. Paul for his kindly assistance in the preparation of this paper.

RECENT PROGRESS IN DERMATOLOGY.

BY G. H. TILDEN, M. D.

ALOPECEIA AREATA; CONTAGIOUSNESS OF ALOPECEIA AREATA; ERYTHEMA NODOSUM COMBINED WITH PURPURA AND CUTANEOUS GANGRENE; CUTANEOUS ERUPTIONS OBSERVED IN MALARIA.

IN an interesting communication¹ upon the pathology and treatment of alopecia areata presented before the last International Medical Congress, Robinson, after mentioning the various theories with regard to its pathogenesis, sums up the results as follows: "While, therefore, the upholders of the parasitic theory have not definitely proved anything, although the course of the disease and the results of treatment favor this view, the defenders of the neurotic theory have shown that hairs can fall out from injury to cutaneous nerves, and that the manner of falling out and the shape of the bald patches may resemble very much that of alopecia areata as ordinarily encountered."

He then gives the results of his own investigations with regard to the etiology and histology of the disease. These consist in the microscopical examination of portions of affected skin removed from the scalps of seven individuals. The duration of the disease in these different cases varied from one week to several years, and the clinical characters from a rapidly disappearing to a permanent alopecia.

The first specimen was taken from a recent case of one week's standing, which subsequently recovered within four months,—an acute case. The epidermal layers of the skin were normal. The papillary layer of the corium was but slightly altered, some of the papillae only, showing evidence of slight inflammatory changes. In the corium proper, beneath the papillary layer, there were evident signs of inflammatory processes, shown by a marked embryonic cell infiltration situated around dilated blood-vessels. This cell infiltration was not general throughout the corium, but was limited to certain areas. There were no signs of special serous exudation, the changes resembling those observed in a small-celled infiltration such as occurs in chronic interstitial nephritis. As a rule the inflammatory changes were not more marked around the cutaneous follicles than elsewhere. The connective-tissue corpuscles were more distinct than usual, and there seemed to be an active proliferation of them in many places, a so-called formative inflammation. The subcutaneous tissues were normal. Where the embryonic cell infiltration existed to any extent, the blood-vessels were dilated and some of the smaller arteries contained a fibrinous coagulum. Some of the lymph vessels were also dilated and contained similar fibrinous coagula. The hair follicles were either empty or contained normal or lanugo hairs. In some cases no hair papilla was found, the contents of the lower parts of the folli-

⁹ Loc. cit.

¹⁰ Med. Times and Gaz., Lond., Dec., 1853.

¹¹ South. J. M. Sc. Edinb., 1815, viii, 369.

¹² Gatty. Lond. Med. Gaz., 1851, N.S. xii, 627.

¹ Transactions of the International Medical Congress. Ninth Session, 1887. Vol. iv, p. 241.

cles consisting of epithelial cells devoid of pigment, the cells turning a small hair-shaft, a lanugo hair, further up in the follicle. In other hairs and hair follicles nothing abnormal was found. Some of the hairs showed signs of interference with nutrition, such as splitting up and fibrillation of the shaft. The anatomical changes consisted therefore in "a mild inflammatory condition of the corium, especially of the upper part and occasionally of the papillary portion; a small-celled, perivascular infiltration and connective-tissue corpuscle proliferation; a falling out of the hairs and their replacement by lanugo hairs; and, finally, coagulation within some of the blood-vessels and lymph channels."

In another acute case similar changes were found. In a third instance of six months' duration, where fully one-half of the hair of the head had been lost, the histological changes were of a similar kind but more marked in degree, the inflammatory processes being more extensive and severe. None of these patients had used any local applications to the scalp, yet in each the inflammatory changes were distinctly visible in the corium, while the epidermis was normal. Where lanugo hairs existed, the hair papilla was absent, or only an indication of its existence could be detected, the lower part of the follicle being filled with epithelial cells, corresponding to those of the external root-sheaths and the slight hair-shaft commenced to be formed high up in the follicle. All the lanugo hairs seen in this disease had their origin in this manner, and probably continue to be produced so long as the external root-sheath is composed of well-formed epithelial cells. In the author's opinion, if this observation is correct, an absence for any length of time of hair of any description would indicate atrophy or destruction of the hair follicle, and in consequence permanent alopecia.

In two instances where the disease had existed for years, the same inflammatory changes already described were observed, but to a greater degree, and in addition there was thickening of the walls of many of the blood-vessels and atrophy of others. In some vessels the lumen seemed almost closed, while the walls were several times thicker than normal. In both cases there was thinning of the epidermis and diminution in the size of the epidermic cells. In one of these cases, which eventually recovered, the sebaceous glands were as a rule particularly well developed; in the other case, which remained bald, more or less degeneration was frequently noted in some of these glands, while others were unaffected. In another case, where permanent alopecia had affected almost the entire scalp for years, sections of the skin showed more or less atrophy of all the structures except the walls of the blood-vessels, degeneration of many of the sebaceous glands, and in the hair follicles, where the pathological processes had advanced to an extreme degree, there was shrinking and atrophy of the follicle sheaths, thickening of the basement membrane, and entire disappearance of the hair papilla, no structures remaining from which a hair could be formed. In follicles showing an earlier stage of this process of degeneration, the follicle had lost its usual form, the papilla was still normal as regards shape, and pigment was deposited in it, in irregular masses, while between the papilla and the

epithelium lining the follicle there was an empty space, the two being separated—the condition showing interference with the growth of the hairs from disturbance in the circulatory apparatus from which they derived their nutrition.

In all the specimens examined, therefore, there were found inflammatory changes, a round-celled infiltration of limited extent confined in great part to the perivascular region, with increase in the connective-tissue corpuscles of the parts. This inflammation was not especially perifollicular, only, as the glandular structures have a richer supply of blood-vessels than the tissue proper of the corium, the inflammation was often more marked around these structures. In the more recent cases there was coagulation of lymph in a number of lymph vessels, and coagulation of fibrin in the large and small arteries, and in the more advanced cases a thickening of their walls. As regards the glandular structures, only the hair follicles were affected in recent cases; in more advanced ones the sebaceous glands were also affected, and later on, slight but marked atrophy of all the cutaneous tissues was evident. The seat of the inflammatory changes pointed to a causative agent not acting especially upon the hair follicles, but in a more general manner throughout the corium, and the coagulation within the lymph and blood vessels denoted that this causative agent had not a central but a local seat. The pathological process is therefore an inflammatory affection of the corium, and not a disease primarily of the hair structures.

Joseph, in his experiments,² produced, by excision of spinal ganglia and portions of the posterior and anterior nerve roots, a falling out of the hair in animals, which was the result of simple atrophy of the hair structures; and he distinctly states that there were no signs whatever of an inflammatory character in the sections of skin taken from these areas of baldness. In Robinson's opinion, therefore, the process in the cases which were the object of his own histological examination was not the same as in the instances described by Joseph, namely, not a tropho-neurotic process. Not being due to tropho-neurosis, nor to a vaso-motor disturbance of central origin, of which there is no evidence, the cause must be a local one; and with reference to deciding this point the author studied sections of skin taken from regions affected with alopecia areata, with regard to the presence therein of micro-organisms.

The results of this examination were as follows. On the surface of the skin, around hairs and sometimes around the shaft, organisms were found which occasionally resembled the fungus of *tinea trichophytina* and *tinea versicolor*. In one instance micro-organisms were found apparently like those described by Von Schler.

Upon staining sections from the most recent case, by Gram's method, and with the different aniline dyes, and decolorizing with alcohol, examination with the microscope showed in the lymph spaces of the corium, and in the walls of some of the small blood-vessels, small, round bodies arranged in groups and deeply colored. They were all about the same size, were arranged in groups and zooglia masses, and were unaffected by acetic acid or alkalis. The

² Vide Dermatological Report in this Journal of May 12, 1887.

majority were found in the lymph spaces of the middle part of the corium; a few were present in some of the papillae, and occasionally they were found deep down in the corium. When these micro-organisms were studied by high powers, it could be seen that an arrangement in pairs was quite frequent. In a case of several months' duration similar organisms were found in similar situations, but were more numerous, being present both in inflamed and normal tissue, and they were especially to be observed in the corium, occupying the lymph spaces and extending by travelling through these channels. In two cases of several years' duration they were also found, but in much fewer numbers.

These micro-organisms are assumed by the author to be the local cause of the disease, the presence of which was indicated by the evidence of inflammatory processes in the corium. Their deep seat accounts, in his opinion, for the rarity of contagion in this malady and for its obstinate resistance to the action of antiparasitic remedies.

Behrend,* by the microscopic examination of hairs from cases of alopecia areata, found that they presented a peculiar and abnormal condition, namely, the presence of air in their roots. That normal hairs contain atmospheric air has been known for some time, but in the case of normal hairs the presence of air is confined to the hair-shaft, above the follicle from which it grows. This phenomenon is explained by the fact that the young cells composing the hair-bulb are prickly cells, which, joined together by their spine-like projections, thus form intercellular channels, through which circulate the fluids which serve the nutrition of the hair. As soon as the growing hair, however, emerges from its follicle and comes into contact with the atmosphere, this intercellular fluid evaporates and the intercellular spaces become filled with air, while the epidermal cells composing the hair-shaft become cornified and dry up. Under normal conditions, the portions of the hair contained within the follicle, being cut off from contact with the atmosphere, are never found to contain air.

That air or gas can be generated in a hair-bulb, or can reach it from the blood-vessels of the skin, is an assumption most improbable in itself; and microscopic examination of these hairs showed that the air existing in the bulb had penetrated it from without, from the surface of the skin, and that its presence was due to evaporation of the intercellular fluids contained in the bulb.

This being the case, the question is, what changes in the relation of the hair-shaft and its follicle render it possible for the hair-bulb to come into contact with the atmosphere, and thus lead to evaporation of its contained fluids? An exact answer to this question is only to be given by further microscopic examinations of sections of affected skin, but Behrend is of the opinion that the changes found in the loosened hairs themselves, furnish grounds for some conclusions with regard to the nature of the pathological process in alopecia areata.

Assuming that under normal conditions an evaporation of the intercellular fluids contained in the hair-bulb is prevented by its closely fitting hair-sheath, a loosening or detachment of the latter from

the hair would enable such evaporation to take place. This condition of things was found to exist in the hairs examined, and in some instances the root-sheaths were found to be separated from the hairs to a point as far down as the bulb. The root-sheath was in these cases dried up, withered, and shrunken, being itself as well as the hair a victim of the disease.

The assumption of the author is, that the hairs and root-sheaths are alike subjected to a drying-up process, that primarily there takes place a separation of the root-sheath from the inner wall of the hair follicle, and that this separation is due to an interference with its supply of nutrition, namely, to some pathological condition affecting the blood-vessels of the skin, which is the essential cause of alopecia areata. The quickly appearing, circumscribed and temporary reddening of the skin which is often coincident with the falling out of the hairs in the initial stage of the disease, also points to some such connection, and is not to be explained by the assumption of a purely tropho-neurotic origin of the malady.

ETIOLOGY OF ALOPECIA AREATA.

At a meeting of the Academy of Medicine, in June, 1888, Leloir presented an address upon this subject concerning which there is at present much diversity and confusion of opinion. Leloir has seen during the past few years one hundred and forty-two examples of alopecia areata. Of these cases ninety-two were under close observation for a length of time sufficient to render them useful as material from which definite conclusions could be drawn. The author divides them into three distinct classes.

I. So called alopecia trophoneurotica. In this class he places all those cases in which there is to be detected no evidence of infection or contagion either in the patient himself or in his surroundings, but which, on the contrary, manifest characteristic neurotic phenomena sufficient to account for the occurrence of baldness.

In the thirty-six instances of this variety of the disease observed by Leloir, the baldness was developed in so-called neurotic individuals. Headache or neuralgia, more or less severe, often occurred before the appearance of alopecia, and were generally confined to the side of the head which was affected by the latter.

Disturbances of cutaneous sensation, such as neuralgia, hyperaesthesia, or a feeling of numbness, sometimes preceded or accompanied the development of alopecia.

In four cases of this class there could be detected a slight but distinctly marked cutaneous anaesthesia, situated in the regions affected by loss of hair. In several instances alopecia followed a violent shock to the emotions, and this connection was so striking as to induce the author to include these cases among those dermatoses which succeed, and are apparently caused by, severe mental shock.

In three instances alopecia followed injury to the head, and in one case universal alopecia occurred in a patient who was suffering from locomotor ataxia.

A certain number of this class of patients had had syphilis, but the proportion was not so large as to suggest anything more than an accidental connection between the two diseases. In one instance

* Virchows Archiv, vol. 109, part 3, 1887, p. 493.

observed by the author, and in another mentioned by Fourrier, alopecia of the occipital region preceded an outbreak of cerebral syphilis.

Leloir has had an opportunity to make microscopical examination of the peripheral and cutaneous nerves situated in regions of skin affected with this variety of alopecia areata. In one instance there was found parenchymatous neuritis of the cutaneous nerves; in another case, however, these nerves were entirely normal in appearance, so that, thus far, histological examination throws no definite light upon the subject.

II. In the second class, which includes thirty-five cases, the author places those examples of the disease which present no symptoms pointing to its neurotic origin, and in which no evidence of its infectious nature is forthcoming.

III. The third division made by the author, and consisting of twenty-one cases, includes those which after sufficient observation he feels obliged to regard as of infectious origin and contagious. The following instance is an example of this class of cases. A young man, twenty-six years of age, and in robust health, suffered for three months from alopecia of the beard. He consulted Leloir, since the baldness had affected the head also. A few months afterward he brought to Leloir his fellow lodger, who had developed during the past few weeks alopecia of the beard. Several months later on, the fellow lodger's mistress was attacked by characteristic alopecia areata of the scalp. The first mentioned patient had in the meanwhile gone to his home to pass the holidays, and the whole family used brushes and combs indiscriminately and in common. Some months after the end of the holidays the young man brought to Leloir his mother, brother, and sister, all suffering from alopecia areata.

With regard to the last variety of the disease, the author has made microscopic examination of the hairs and epidermal scales in ninety-two cases, and states that in no instance did he find a constant or definite form of pathogenetic micro-organism. He also inoculated ten guinea pigs, six rabbits, two dogs and five cats with the hairs and epidermal masses from regions of skin affected with alopecia areata, but always without result.

But of ninety-two cases of alopecia areata therefore observed with care, and for a length of time sufficiently long to warrant deductions therefrom, there were thirty-six instances of alopecia areata trophoneurotica, thirty-five cases in which neither a neurotic nor infectious origin could be determined, and twenty-one examples in which the evidence seemed to justify the assumption of an infectious origin. The clinical distinctions, however, between these different varieties of the disease are not yet evident.

CONTAGIOUSNESS OF ALOPECIA AREATA.

In a lecture delivered before the dermatological section at the meeting of naturalists at Cologne, September 18, 1888, Eichhoff, after referring to Robinson's article upon alopecia areata, and to the addresses of Leloir and Besnier before the Academy of Medicine, upon the same subject, in all of which the probability of an infectious origin of the

disease is advocated, gives an experience of his own which goes to demonstrate the contagious nature of the malady.

During the two years from April, 1884, to March, 1886, there was a sudden and notable increase in the number of cases of alopecia areata seen by him in practice. As a rule he had from four to six cases a year come under his observation; but during these two years the number seen was thirty-six cases, without any corresponding increase in his practice as a whole. These cases were all ones of undoubted and typical alopecia areata, great care being taken to exclude the possibility of confusion with tinea capitis.

Investigation with regard to the etiology of these cases showed that out of the thirty-six patients, ten were customers of the same barber, and had all noticed the appearance of the disease shortly after a visit to his shop. Two groups of seven and four patients came from the same neighborhood respectively. Three patients were affected with the disease after violent emotional disturbance; and in the remaining twelve instances of the disease no definite cause could be made out. After the barber in question had disinfected his brushes, combs, and various utensils, no more cases of alopecia areata occurred in that place. Since this epidemic the number of cases of the disease had dropped to the usual number of five or six a year in the speaker's practice.

From the above experience Eichhoff concludes that alopecia areata is not a pathological unit, a disease *sui generis*, but that it comprises at least two varieties, alopecia areata trophoneurotica, and alopecia areata parasitaria.

Unna, in a letter from Paris to the Monatsheft für prakt. Derm. (No. 13, 1888), relates the following instance of the transference of alopecia areata by contagion, as one of the most striking mentioned by Besnier. In one regiment there were observed eighty cases of this disease. Investigation showed that the officer whose duty it was to attend to the distribution of the uniforms and accoutrements among the men was affected with the malady. These men were all sent away and their helmets burned. One helmet, however, accidentally escaped destruction, and the soldier to whom this helmet was given was subsequently attacked by the disease.

ERYTHEMA NODOSUM COMBINED WITH PURPURA AND FOLLOWED BY ACUTE MULTIPLE GANGRENE OF THE SKIN.⁵

Demme has observed a severe form of erythema nodosum with unusual complications occurring in three boys and two girls, varying in age from three to eleven years. Three of these children were from the same family, which suggests a transmission of the disease from one to the other by contagion.

The illness began suddenly, as a rule, being ushered in by violent vomiting, delirium, and stupor. A rapid elevation of temperature to above 40° C. immediately preceded the appearance of a widely spread nodular erythema, which was situated mostly upon the legs and forearms. There was also developed severe pain in the extremities, in the elbows and ankles, but unaccompanied by effusion into the joints. Between the fourth and

⁴ Monatsheft für prakt. Derm., No. 20, 1888

⁵ Fortschritte der Med., 1888, No. 7.

sixth day of the disease there appeared numerous purpuric spots, attended in one instance with vomiting of blood and bloody evacuations from the bowels. In the two most severe cases there appeared also gangrenous spots in the skin, situated upon the numerous erythematous lesions, especially upon those situated in the neighborhood of the ankle and elbow joints. These first showed themselves as bullæ and pustules, which upon breaking down became surrounded by a grayish-yellow, irregularly jagged border, which itself was surrounded by a zone of hyperæmia. There soon developed a line of demarcation about the gangrenous process, and healing took place, the necrosed portions of skin becoming of a greenish-brown color, and being cast off.

In spite of the rapid exhaustion attending these cases, they all recovered. The whole course of the malady gave one the impression of a severe disease of an infectious nature, in which the development of nodular erythema was an essential feature and not merely an accidental accompaniment of some other pathological process. The fever, which was at first high and continuous, fell to a marked degree after the appearance of the erythematous eruption, while during the development of the cutaneous gangrene the temperature was subnormal as a rule.

Examination with reference to the presence of bacteria, discovered none in the blood, either in the circulation or in that effused into the skin; but in the tissue fluids of the intact erythematous lesions, as well as in the contents of the bullæ and pustules and in the patches of cutaneous gangrene, there were found micrococci and also bacilli arranged in groups. Pure cultures of these bacilli, when inoculated upon the abdominal skin of guinea pigs, produced a well-marked eruption of erythematous lumps, followed by gangrene and resembling the gangrenous process as seen in the cases described. Inoculation with pure cultures of the micrococci was productive of no result.

ERUPTIONS OF THE SKIN OCCURRING DURING THE COURSE OF MALARIA.

Retiwezw⁶ makes an analysis of the cutaneous eruptions observed by him as occurring during the course of intermittent fever, in two thousand cases of the latter disease.

1. Roseola, which differed from typhous roseola in the fact that it very seldom became petechial, was seen in 2.5 per cent. of all cases.

2. A large macular form of erythema, which was localized principally upon the extremities, occurred in 3 per cent. Sometimes this erythema involved the whole surface of the body, and it was attended with itching and burning sensations. Occasionally a hæmorrhagic form of erythema was seen.

3. Urticaria occurred in 45 (4.5%) per cent. of all cases and soon disappeared. It was sometimes combined with erythema, but a hæmorrhagic form was not observed.

4. Herpes facialis was quite frequent, being noted in 22 per cent. of the cases. In one instance the author met with an herpetic eruption upon the palms of the hands and forearms, combined with purpura of the lower extremities.

5. Herpes zoster was seen in only one case.

6. Malaria was encountered, but evidently was merely an accidental complication due to profuse perspiration.

7. The most common eruptions met with during the course of malaria were primary purpuric spots, purpura simplex; and hæmorrhages, which were usually complications of the severer forms of intermittent fever. These patches were usually situated upon the chest, abdomen, and inner sides of the thighs, occasionally spreading over the whole body.

Reports of Societies.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES M. GREEN, M. D., SECRETARY.

OCTOBER 13, 1888, the PRESIDENT, DR. WILLIAM L. RICHARDSON, in the chair.

DR. J. G. BLAKE read a paper on

INTRA-UTERINE FETAL DEFORMITIES.¹

DR. LYMAN alluded to three cases of intra-uterine fetal deformity which he had already reported. In two cases there was amputation below the elbow; in the third case, reported and figured in the Transactions of the Boston Society for Medical Improvement, January 13, 1862, two fingers were absent, and there was a cicatricial constriction just above one ankle. There was no arrest of development below the contraction; but there was no muscular development between the contraction and the knee. None of the amputated members were found; but the amputation probably took place early in pregnancy, and the parts were dissolved.

DR. ABBOT queried whether the rudimentary members in Dr. Blake's case might not be the analogues of the anterior limbs of some of the lower animals, like the seal, for example.

DR. SINCLAIR believed such cases as that reported were due to arrest of development rather than to amputation, and cited a case in one of the dime museums which had no arms, but did have rudimentary fingers at each shoulder. Dr. Jeffries Wyman had in his museum a human embryo which had gill-like openings on the sides of the neck; this went to prove Agassiz's idea of development, that is, that man may go back to earlier forms of animal life, as alluded to by Dr. Abbot. Perhaps, however, the rudimentary fingers were an expression of nature's effort to repair the loss.

DR. BROWN suggested that the rudiments of the missing bones might be present, but too small to appreciate.

DR. BLAKE said, in reply to a question by the president, that there was no known hereditary influence in his case. In Dr. Lyman's third case the deformity was obviously caused by a constricting band, which gave way in time not to stop all development or to cause amputation. His own case seemed to him inexplicable on the ground of constrictions by the funis or by amniotic bands, but rather to be an instance of arrested development from some unknown cause.

⁶ Ref. in Vierteljahrsschrift für Derm. und Syph., Heft 2, 1888, p. 60.

¹ See page 408 of the Journal.

NEUROSIS OF THE BLADDER.

DR. BLAKE spoke of the case of a virgin twenty-eight years of age, of nervous temperament, and who had suffered great mental distress from various causes, who was afflicted with an almost constant desire to pass water. At night she was obliged to empty her bladder from five to fifteen times, and in the day time every fifteen or twenty minutes. There was more or less pain after the bladder was emptied, and there was some loss of power, so the urine would dribble away. No cause, other than the general nervous condition, could be found to explain the affection: no local lesions could be found in either uterus, urethra, or bladder. Galvanism, strychnia, and all sorts of local treatment had been tried without avail.

DR. LYMAN had seen a similar case last summer. The patient, a young woman, had been sick for nine months, was pale and nervous to the last degree, and was unable to go about on account of an almost constant desire to pass water. There was cutting pain in the bladder after micturition: the urine was clear, contained no mucus, but was very acid. He prescribed twenty-five grains of acetate of potash every four hours, with suppositories of opium and belladonna: in ten days she was well. It was a case of irritable bladder from acid urine.

DR. ABBOT spoke of a similar case, in which the urine was intensely acid and contained mucus. He had prescribed bicarbonate of soda, and salol in five grain doses t.i.d., and the patient was well in a week. He had also found salol effective in cystitis associated with alkaline urine and rheumatism.

DR. BLAKE remarked that in his case such a condition of urine did not exist, and he could find nothing to treat.

DR. DAVENPORT thought that in Dr. Blake's case it would be warrantable to make a vesico-vaginal fistula, and thus by relieving the bladder to give time to build up the general health, when perhaps the fistula could be closed. The fistula must be kept open by passing the finger through it every day for perhaps a month, after which time the edges cicatrize and the fistula remains open. It is of course necessary for the patient to wear a towel, and she is to some extent debarred from society. Chafing will be caused by the constant dribble of urine, unless the parts are protected by the use of ointments. He had watched the course of a number of these cases, and believed that cures effected had been permanent. A year is allowed to elapse before closing the fistula, and then only when a cure is apparently effected.

THE PRESIDENT said that six or seven years ago he had a case similar to Dr. Blake's, in which he tried constant irrigation of the bladder with a stream of carbolized water, at a temperature of 100° F. during thirty-six hours: there was complete cure.

A CASE OF SPINA BIFIDA, WITH WEB-LIKE ATTACHMENTS ON ARMS AND LEGS.

DR. J. STEDMAN reported the case of a young woman, one year married, who, when six months pregnant, suffered accidental rupture of the fetal membranes. The patient was kept in bed, and the liquor amnii gradually drained away. Two weeks after rupture of the membranes labor came on: the

fœtus had spina bifida, and the arms were attached to the sides, and the legs to each other, by a web-like membrane. The fœtus did not breathe, motion having ceased a short time before its birth.

AMERICAN ACADEMY OF MEDICINE.

TWELFTH annual meeting, Tuesday morning, November 13th.

FIRST SESSION.

The Academy met in the governors' rooms of the New York hospital, the PRESIDENT, DR. FREDERICK HENRY GERRISH, A. M., M. D., of Portland, Maine, in the chair.

The deaths of the following members were reported: C. R. Agnew, New York; M. H. Borland, Pittsburgh; Howard Pinkney, New York; Theodore T. Wing, Susquehanna, Pa.; E. S. Dunster, Ann Arbor; Stephen B. Kieffer, Carlisle.

LEARTUS CONNOR, A. M., M. D., Detroit, Mich., made the

REPORT OF STANDING COMMITTEE ON THE REQUIREMENTS FOR PRELIMINARY EDUCATION IN THE VARIOUS MEDICAL COLLEGES OF THE UNITED STATES AND CANADA.

In speaking of the preliminary requirements, stress was laid upon the importance of a sound body. In no learned profession is the mortality so great as in the medical. Reference was made to the methods of determining whether or not the colleges fulfilled the statements made in their announcements. One of these was by means of decoy letters. This plan last year indicated that the majority of colleges fulfilled these statements. Another method of judging is by examinations of the graduates by disinterested parties as the army, navy, etc. Positive data are not at present available, but in regard to these examinations the principal deficiency seems to be in the preliminary education. The general verdict of editors is that the average doctor is lamentably deficient even in what is known as common-school education.

There are in the United States one hundred and sixteen medical schools. According to their announcements, eighty-nine exact certain educational requirements, but nineteen of these require no more than they can help. It is futile to endeavor to directly influence medical colleges to make these requirements. It can only be obtained by awakening in the mind of the profession and people a sentiment that a definite preliminary education is necessary to the medical student.

THE CAUSES AND PREVENTION OF THE OPIUM HABIT AND KINDRED AFFECTIONS,

by J. C. WILSON, M. D., of Philadelphia.

These affections are prevalent to a large extent, although we possess no reliable statistics concerning their frequency. The causes may be grouped under three heads. First, example, as shown in the case of those who become opium eaters through the example of friends. Second, suggestion, as is shown in those who fall into the habit through the reading of literature concerning it, or from familiarity with the drugs, as in the case of doctors, druggists, nurses, and students of medicine. A large proportion of individuals who are led by these causes to contract such habits do so in the absence

of sickness and physical pain. Third, medical prescriptions. It is an unfortunate fact that the greater number of the victims of habitual vicious narcotism become so through the prolonged abuse of narcotics originally prescribed for the relief of pain.

Among the measures suggested for the prevention of the formation of such habits were, first, the dissemination of a wholesome knowledge of the methods by which the opium habit and kindred affections are induced; of the serious character of these affections; and of the dangers attendant upon an ignorant and careless employment of narcotics. Second, a reasonable and temperate presentation of the facts in the popular works upon hygiene. Third, the exercise of every possible precaution on the part of physicians in prescribing narcotics. It is good practice to keep the patient in ignorance of the character of the anodyne used and of the dose. Physicians should personally control as far as possible the use of such drugs, and see that they are taken infrequently, and in the minimum amounts capable of producing the desired effect; the occasional alternation of anodyne medicaments is desirable. Prescriptions for drugs of this kind should not be renewed by druggists without the written order of the physician. Finally, a merely palliative treatment should not be allowed to assume too great importance in the management of curable painful affections.

Under no circumstances, except in the final stages of hopelessly incurable painful affections, should the hypodermic syringe be placed in the hands of the patient.

Uniform and efficient laws to regulate the sale of narcotic drugs are desirable. Existing laws relating to this subject are a dead letter; they are neither adequate to control the evil nor is their enforcement practicable.

DR. R. L. SIBBET, Carlisle, thought that the physician should not tell what he is giving when he prescribes opium. He also thought that we should never write a prescription in which the word opium appears.

DR. LEARTUS CONNOR, Detroit, considered it unsafe for the physician to administer a narcotic in his own family. He could give a large number of instances where the wives and other members of physicians' families had become addicted to the use of opium in this way. It is unsafe for the physician to administer opium to himself.

THE IMPORTANCE OF PRACTICAL OBSTETRICS IN THE COURSE OF INSTRUCTION GIVEN BY MEDICAL SCHOOLS,

by THEOPHILUS PARVIN, A. M., M. D., Philadelphia.

The science of obstetrics is admirably taught in our medical schools, by pictures, models, illustrations of various sorts, with preparations of pelves, etc., but the vast majority of American medical students graduate without having witnessed a case of labor. In many medical schools the diagnosis of pregnancy by auscultation and by palpation is not taught so that the graduate sees with his own eyes and feels with his own hands. There is also reason to believe that the mortality of private practice is greater than that of hospital practice. Then, too, the unqualified obstetricism contributes largely to the

work of the gynecologist. Whilst attendance on poor women at their homes is better than no practice at all, yet the student will derive more benefit from the study of cases collected in a maternity hospital, where many cases can be studied under the instruction of a competent teacher. The practical teaching of obstetrics is to be directly associated with its scientific instruction. There should, therefore, be a maternity belonging to every medical school in which obstetrics is taught. In large cities there would be no trouble in obtaining sufficient material for this method of teaching. Through the efforts of the author, the trustees of the Jefferson Medical College authorized the establishment of a maternity department in connection with the hospital. Thirty-four women have been confined without a death. The room being insufficient, an out-door department was established. Here there have been one hundred and fifty-one applicants; one hundred and six have been confined, with but one death. This occurred two weeks after labor. The cause of death was not positively ascertained.

The author then described the method employed at the Bavarian University, basing his remarks on a report furnished by Dr. J. Clifton Edgar. Obstetrics is there taught by (1) didactic lectures, (2) obstetric clinics, (3) touch courses, (4) operation courses on the phantom, (5) management of labor cases, (6) bedside instruction in the puerperal wards. The student is required to attend obstetrical clinics for nine months. In this time he would at a low average thoroughly examine eighteen gravid or parturient women, and deliver four women.

In concluding, Dr. Parvin said: "Why would it not be wise for this Academy, which should be a light and a guide to the American profession, leading it to higher and giving it larger views on those duties and responsibilities, with hearty unanimity declare that practical obstetrics should be made a part of the regular course in every medical college? With the seal of your approval, those who are laboring to this end will be given strength and hope. May the time soon come when every medical school upon the continent, which does not take these steps to make this necessary reform, shall perish under the common and condign popular and professional damnation."

Adjournment of morning session.

AFTERNOON SESSION.

DR. F. H. GERRISH, M. D., of Portland, Me., delivered the

PRESIDENTIAL ADDRESS.

Reference was first made to the necessity for something more than a mere grammar-school education as a preparation for the study of medicine. The course of a student without proper preliminary education was traced at length. Until recently any male of the human species, who would pay the necessary fees, found no difficulty in entering. A few years ago several medical schools established a preliminary examination. This was attributed by the speaker largely to the action of the Illinois State Board of Health, to the effect that if the schools wished their diplomas to be recognized in that State they must have a preliminary examination. He thought that the labors of the Academy

should be rather to elevate the standard of medical education, than the investigation of scientific problems.

The next portion of the paper was devoted to a consideration of the methods by which the membership of the Academy could be increased.

THE PRESIDENT then referred to certain amendments which had been proposed at previous meetings. One of the amendments considered related to Article VIII. Section 1, which now reads: "The fellows of the Academy, in their relations with each other, and with their fellowmen, agree to be governed by the principles embodied in the present code of ethics of the American Medical Association, and by the constitution and by-laws of the Academy." The amendment suggested: "The fellows of the Academy will be governed by those principles which actuate educated, cultured, and honorable men in every profession, and by the constitution and by-laws of the Academy." The speaker favored the adoption of the amendment.

Never before had it been appropriate to address the Academy as "Ladies and Gentlemen," but to-day it was his privilege to use this significant expression. It is not creditable to our country, or in keeping with the liberality which theoretically characterizes our institutions, that a discrimination should so long have been made against women in scientific associations. It is noteworthy that some of the standard upholders of a strict preliminary examination, as ascertained by the detective work of our committee on the subject last year, were the schools managed by women.

Since the last meeting, the grave had closed over several members of the Academy, and the speaker spoke briefly of the various deceased members.

In order to facilitate the procuring of essays for the annual meetings, it was suggested that a special committee charged with this work be appointed. In reference to the Congress of American Physicians and Surgeons, he thought it advisable for the Academy to consider the expediency of associating itself with the other societies comprising the Congress, thus bringing it into more prominent notice than it has hitherto enjoyed.

The next paper was entitled

A FEW WORDS CONCERNING OUR ACADEMY,

by DR. R. LOURY SIBBET, Carlisle.

The Academy was organized in 1876, at a time when the standard of medical education was at its lowest point. Medical institutions were numerous, and their doors thrown open to all, irrespective of qualifications. At this time there were also at least a dozen of so-called diploma mills. It was at this period that the Academy began to explore these novel methods of manufacturing medical practitioners. The addresses by the President and the papers by the fellows have generally been on some branch of this semi-medical subject, and widely distributed among professional and educated classes. These addresses have also pointed out the true and only method by which men may become safe and honorable practitioners. The Academy has strongly insisted upon the necessity of preliminary education. At the time of the organization of the Academy there were in no State laws relating to the practice of medicine that could

be enforced. Most of the States now have laws which can be carried out, and many have State boards of examiners. Graded courses have been adopted in the best medical schools, with preliminary examination and frequent written examinations. The "diploma mills" no longer exist.

The Academy is the only society in which an academic qualification is required. The Academy had set a high standard for admission, but he believed that the doors should not be closed against those eminent practitioners who, although they did not possess the degree of A.B., had pursued protracted courses of preliminary study in literary schools.

(To be continued).

NEW YORK COUNTY MEDICAL ASSOCIATION.

STATED meeting, October 15, 1888.

DR. I. ADLER read a paper entitled

SOME REMARKS ON AKROMEGLIA.

He said that in 1886 Marie first described a new affection to which he gave the name of akromeglia. This designation, which simply meant enlarged extremities, was not very satisfactory, but it had now been generally accepted, and in our present total lack of knowledge regarding the pathology of the disease, it would perhaps answer as well as any other. Since Marie's paper had appeared, several cases had been reported in Europe, but that now reported was the first ever known in this country.

The patient, who was present, was a native of Germany, female, thirty-four years of age and married, and first came under observation in February last, at the German hospital. Her mother had died from the effects of a fall, and her father was still living. She also had three brothers living, all in the enjoyment of robust health. She was strong and healthy, she stated, up to her eighteenth or twentieth year, the time of the onset of her present trouble not being very clearly remembered. She began to menstruate in her fifteenth year, but the periods were always very irregular, and at the end of three years disappeared finally. She thought she was about twenty when she first noticed that her feet would swell from time to time, although a bandage or tight-fitting shoe, she said, would always readily reduce the swelling. About this time she also noticed some enlargement of the submaxillary and other glands.

The patient was unable to give any exact history of the present abnormal growth. She was married in her twentieth year, and when she was twenty-three her wedding ring became so deeply imbedded in the tissues of the finger that it had to be removed with a saw. She suffered principally all along from pain in the back and weakness, and was also subject to frequent attacks of migraine. The pain in the back she attributed to a long ride, from the effects of which she never recuperated. She was unable to walk, and spent most of her time in a semi-recumbent position.

On looking at the woman, one was at once struck with the immense size of the head and the marked projection of the lower jaw. At the first glance it looked like a case of myxedema, or one in which

there had been complete extirpation of the thyroid gland. The entire cranium was greatly enlarged, and the protuberance of the occiput was especially marked. The lower jaw was immense, and the tongue was greatly hypertrophied and flabby. There was no alteration in the teeth, except that those in the lower jaw were separated to some extent from each other; and the hair was abundant. All the lymphatics of the neck were greatly enlarged. On a superficial inspection there was an apparent lack of the thyroid gland, but a more careful examination, especially during the act of deglutition, showed that the left lobe and the isthmus could still be distinctly felt, although the right lobe seemed to be wanting. No trace of the thymus gland could be detected. The clavicles were markedly enlarged, especially at their sternal extremities. The ribs were also greatly enlarged, and beginning kyphosis and peculiar bulging shape of the chest, due to the costal hyperplasia, could be observed. There was comparatively little adipose tissue at any point. The bones of the arm and fore-arm all showed enlargement of the extremities, and there was some reason to believe that slight lengthening of the shaft had also taken place. The hands were immensely enlarged, although there was no deformity of the nails, as has been noted in some of the other cases of akromegalia. The muscles everywhere were flabby and atrophied. The skin was markedly hypertrophied, but remained for the most part soft and pliant.

The same general condition of affairs was found in the pelvis and lower extremities. The feet were enlarged even more than the hands, being simply colossal in size, and there was also enormous hyperplasia of the epiphysal regions and the patellæ in the legs. It was noticed that there was marked hyperæsthesia in all the hypertrophied parts, even slight pressure causing the patient to wince.

As regards the internal organs, a careful examination of the eyes with the ophthalmoscope failed to reveal any organic disease. Repeated chemical and microscopical examinations of the urine showed no evidence of any kidney trouble, and the red and white corpuscles of the blood were both found to be normal in number and appearance, although to the eye the patient looked anæmic. The heart and lungs and all the other organs, as far as could be ascertained, were entirely normal. The appetite was fairly good, but the bowels showed a tendency to obstinate constipation.

The electrical examination showed some departures from the normal. The resistance of the skin to the faradic current was enormous. Otherwise the cutaneous sensibility was not diminished. As regards the galvanic current, there was considerable diminution of electrical excitability, which was most marked in the peronei of both lower extremities. Still, there was no evidence of any degeneration going on in the nerves, and the want of electric excitability could well be explained on other grounds. There was evidence of well-marked psychical degeneration in the patient. She was described as having been a bright and lively girl, but she was now very dull and apathetic.

Dr. Adler then went on to make more general remarks on akromegalia, founded on the observation

of European authorities. In most particulars, he said, this case corresponded very closely with those met with abroad, though there was one feature which was peculiar to it (being noted in none of the others), viz., the widespread hyperplasia of the lymphatics. As regards the post-mortem appearances in this affection, Klebs was the only author who had made anything like a satisfactory report. He had found a general hyperplasia of the connective tissue and marked proliferation of the blood-vessels. There was also enlargement of the various nerves, especially the ganglia of the sympathetic. In the brain he found well-marked hyperplasia of the hypophysis cerebri, and the question naturally arose whether there was any connection between the enlarged hypophysis and the enlargement of the nerves. Klebs was inclined to attribute the disease to the proliferation of blood-vessels, but this was purely fanciful and speculative, and at present the true pathology remained shrouded in profound mystery. As regards the matter of prognosis, this was not particularly bad so far as life was concerned. In Europe two of the cases, which had been first observed as long ago as 1867, were still alive. In some of the cases there were abnormal conditions of the heart. In most of them the thyroid gland was diminished in size or apparently wanting altogether; but in two it was markedly hypertrophied, and was no doubt diseased. Amenorrhœa was a constant characteristic of the disease.

Dr. W. R. BIRDSELL expressed the great pleasure it afforded him to see this case, the first of its kind ever recorded in America. He did not think he could throw any light on the pathology, though there seemed to him to be some mysterious connection between akromegalia, myxœdema, and extirpation of the thyroid. He said that he had at present under observation a young girl suffering from amenorrhœa, who had developed some enlargement of the extremities of the phalanges of the hands, and to a less extent of those of the feet. It might possibly be an incipient case of akromegalia, but it was as yet too early to form a definite opinion in regard to it. As regards the electrical reactions in Dr. Adler's case, he thought we ought to be very guarded in drawing conclusions.

Dr. ADLER said that it seemed to him that the hyperplasia in and about the nerves might of itself offer a sufficient explanation of the diminished electric excitability.

Dr. A. L. CARROLL said that profound gratitude was due Dr. Adler for the most admirable clinical demonstration which he had given of his unique case. Ever since he had first seen an account of this new disease in the journals, he had been waiting in the hope that some one would find a specimen of it in this country, and it now afforded him extreme pleasure to have the opportunity of seeing the first case reported.

The question of treatment having been suggested, Dr. ADLER stated that, in the total absence of knowledge of the cause of the disease, all treatment, so far as interference with its progress was concerned, was without avail. The patient was simply kept in bed, and her functions regulated as well as possible. The attacks of migraine to which he had referred could always be efficiently combated with antipyrine.

DR. J. LEWIS SMITH presented a

CASE OF INFANTILE HEMIPLEGIA WITH MARKED
SPASTIC CONTRACTURE, AND SLIGHT ATHETOID
MOVEMENTS IN THE FINGERS.

The patient was a young girl of eighteen, in his service at Charity Hospital. She gave a history of scarlatina complicated with diphtheria and followed by general dropsy, at the age of seven. It was at this time, according to her statement, that she first noticed the paralysis of the left side of the body, from which she still suffered. About a year later the arm began to be drawn backward behind the body, and it could now be seen in that position, like a rudder, with tonic contraction of the extensor muscles, and the fingers thrown far back. Soon after the appearance of the paralysis, the patient began to suffer from epilepsy. The attacks were for a time of the nature of *petit mal*, but had gradually grown more severe, and now constituted *grand mal*.

Dr. Smith then read a communication concerning the case, prepared, at his request, by DR. M. ALLEN STARRS, in which the latter gave a résumé of some of the latest researches by Seeligmeyer and other authorities in regard to the condition here met with. In it he stated that all recent writers mention athetosis as a frequent complication of spastic infantile hemiplegia connected with epilepsy. In this condition club foot was apt to be present, as was the case here, and the patient walked on the toes. Such cases presented indubitable evidence of an irritation carried down to the spinal cord from the cortex.

DR. BIRDSALL said that these cases were mostly instances of infantile hemiplegia, and all that he had observed had begun before the age of ten years. There could be no question that Dr. Starr's explanation of the pathological condition was the correct one. There was a destruction of tissue in the cortical areas, by reason of which the impulses from the brain were transmitted irregularly, and not in a co-ordinate manner. The condition varied from the ordinary contractures met with in hemiplegics in there being more mobility, and it also differed from ordinary athetosis, in which there were more movements with but little contracture. Athetosis, as was now well known, was a symptom of hemiplegia, and particularly infantile hemiplegia. In infants, an athetoid condition of the fingers was normal, these members being constantly in motion, and the earlier the paralysis occurred the more marked would be the athetosis.

DR. DANIEL BROWN read a paper on

THE ARREST OF SECRETIONS IN THE ERUPTIVE
FEVERS.

He took scarlatina as the type, and said that it was not so much the disease itself that proved fatal as the accidents and sequelæ liable to attend it. Unless the secretions could be kept in efficient operation, serious inflammations were likely to result from the congestion incident to the irritation produced by the poison in the system. He was in the habit of commencing his treatment with small doses of the bromides to allay nervous irritability, and of tincture of aconite to diminish the frequency

of the pulse. In a short time he began the administration of carbonate of ammonia, which for the last twelve years he said he had regarded as his sheet anchor in the treatment, on account of its stimulating effect upon the secretions. The dose was a very small one, only one-half or three-quarters of a grain, and it was usually repeated every hour or so, in a solution containing elixir of cinchona. The skin was kept anointed with iodine, and at night he often gave small doses of calomel and jalap, as advocated by Prof. Wm. H. Thomson. Under this plan of treatment he found that the eyes or ears were seldom affected, and kidney trouble rarely occurred as a sequela. The treatment must be varied, of course, according to circumstances, but the chief thing he always had in view was the maintenance of the secretions.

DR. C. A. LEAH said that he would be very glad if he could find a remedy which would act as a preventive of complications and sequelæ. Carbonate of ammonia, however, he should think would only add another foreign element, and he believed that pure water would answer a better purpose in keeping the secretory organs free. The two great objects in the treatment were to eliminate and to sustain.

The President, DR. J. R. MACGREGOR, said that there were a certain number of cases of scarlet fever in which death resulted, not from any accident or sequela, but from the direct violence of the attack; the poison introduced into the system being so malignant as to promptly overwhelm the nervous centres and the powers of life like an avalanche. As regards the glandular system, there was always danger of trouble. For instance, in the kidneys, as the result of over-stimulation and over-action in eliminating a poison to which the organs were not accustomed, the epithelium of the glomeruli was apt to be thrown off, and in consequence of this, this tubular nephritis would result. In the zymotic diseases in general he thought other methods of treatment, besides those aimed at securing elimination, were often called for.

DR. BROWN said that he did not by any means claim that he could cure all his cases. He quite agreed that the malignant cases referred to did sometimes occur; but in these he believed that if only a few doses of such remedies as the bromides could be given to allay the nervous irritability produced by the poison, there would result a certain amount of improvement, even if the effect was not sufficient to prevent a fatal termination; while in others which would unquestionably prove fatal if left to themselves, death might be averted by the prompt measures adopted.

—DR. J. B. Hamilton, supervising surgeon-general of the marine hospital service, it is said, has been appointed editor of the *Journal of the American Medical Association*, and is reported to be about to resign his present official position. He is a strong Republican, and will not present his resignation, probably, until after Mr. Harrison becomes president.

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THE TREATMENT OF DELIRIUM
TREMENS BY STRYCHNINE.

To Luton, of Rheims, is due the systematic treatment of delirium tremens and alcoholism by large doses of strychnine.¹ Luton recommended doses of five milligrammes, one-twelfth of a grain, by hypodermic injection, or by mouth, these doses to be repeated twice or three times a day.

Amagat, by some curious experiments on hares, which were given toxic and even fatal doses of alcohol, found that all dangerous effects might be averted by giving to each animal, simultaneously with the poisonous dose of alcohol, one milligramme of strychnia.²

Dujardin Beaumetz has repeated the hospital experiments of Luton, with uniformly good success.³ He says: "Since the communication of Luton, I have many times had recourse to this strychnine treatment in my wards at St. Antoine, and always with successful results. I administer the sulphate of strychnia in subcutaneous injections, and I begin, as does Luton, with a dose of five milligrammes, which I repeat in five hours; sometimes a third injection during the day is needed." Beaumetz, by experiments on animals, has found "that there exists, within certain limits, a real antagonism between the action of alcohol and strychnine, and vice versa."

In the *Bulletin de Thérapeutique*, 1885, vol. cviii. p. 177, there is a communication from Drs. Journef and Bounaud, in which they give favorable results from a series of trials in private practice of this remedy in delirium tremens. One patient took in the course of three days upwards of two grains of strychnine subcutaneously, not only with no toxic result, but with the most marked benefit, the insomnia, agitation, and delirium disappearing under

the use of the remedy. Sleep was in some instances induced where opium, chloral, and other hypnotics had failed.

Lastly, in the current number of the *Bulletin*, October 15th, appears an article by a Brazilian physician, Dr. Manoel Ramos, "On the employment of strychnine in delirium tremens," in which he extols the effects of this remedy. He also has witnessed the superiority of strychnia over other remedies, notably opium, morphine, chloral, and paraldehyde in controlling the disordered manifestations of alcoholism. Hypodermic injections of strychnine, one twelfth of a grain, followed by hypodermics of morphine, one-sixth of a grain, in delirium tremens, have in some cases in his practice been followed by deep and prolonged sleep.

Dr. Ramos thus concludes his communication:—

"I believe, with M. Luton, that in chronic alcoholism there is inertia of the excito-motor properties of the spinal cord, which enables the patient to tolerate large doses of strychnine; in some cases as much as four cgs., nearly one grain, may be required. I believe that strychnine has in these cases a substitutive action on the nerve centres, thus antagonizing the excitant action of the alcohol. These centres are habitually over-excited by alcohol; when the stimulant fails, the troubles of the cerebrum cause delirium, and those of the cord, trembling; for we may say, with Torres-Hommen, that "delirium is the trembling of the brain, while trembling is the delirium of the spinal cord." It is necessary, then, to find another excitant. Morphine and other preparations of opium tolerably fulfil this indication, but better than all, and especially when opiates fail, are the large doses of strychnine.

MEDICAL INSPECTION OF THE MASSACHUSETTS INSANE.

THE appointment of a medical man as inspector of the charitable institutions of Massachusetts—a position which involves so many possibilities for the improvement of our insane collectively, and therefore individually, calls for something more than the brief notice in our last issue.

Feeling confident of the advantages to follow this new departure, we do not need to await results before congratulating the medical profession, the general public, and especially the insane who are among the objects of this important advisory and supervisory department, on a distinct advance in lunacy administration in this State. This the appointment in itself implies by its recognition of the vital importance of medical inspection for the insane.

The ideal method of central administration, viz.,

¹ Bull. gen. de Thé., 1880, t. xli. p. 241.

² Jour. de Thé., 1876, p. 378.

³ Bull. gen. de Thé., t. cvl. p. 1.

through a paid Board of Commissioners in Lunacy, composed of prominent men in several callings, the medical predominating, seems unattainable with us; but we have much to be thankful for in having secured a physician, trained by practical experience in the hospital care and treatment of all classes of the insane, as the agent and probably to a large extent the advisor of the Board of Lunacy and Charity.

Our dependent insane are blessed with asylums admirably administered and medically equipped. No men in the Commonwealth are better qualified to give advice on the larger questions of the disposal of patients of this class than are the superintendents of these institutions. In order to obtain for the State at large something of the judgment and administrative knowledge which is at present chiefly expended upon individual asylums by these medical directors, their hearty co-operation is essential, and this can best be had through the medium of an official who is a fellow-physician.

The problems to be solved, viz., the proper revision of our lunacy laws; the best disposal of our surplus insane in hospitals through suitable provision for the chronic class; the care of the criminal lunatics, the inebriate, the almshouse and boarded-out insane—questions understood in many respects but settled in none,—might daunt the most determined; but, as half the battle is in proper equipment for work, a medical man has necessarily great advantages, and we believe we can assure the new incumbent of a large share of professional encouragement and support.

ON SPECIAL SERVICE.

VERY nearly twenty years ago a brilliantly aggressive member of the Massachusetts Medical Society asserted that specialists were the officers, and general practitioners the rank and file, of the profession. This sentiment was by no means heartily re-echoed at the time, the medical specialist being then a comparative rarity, and the "rank and file" largely in the majority. Nor has this assertion, it is safe to say, found more favor in the later years, although the specialists have greatly increased in number,—for, with the subdivision of labor, and the exploration of hitherto comparatively unknown regions of research, there has come a sense of interdependence and community of interest, which is a most valuable and wholesome thing in either an army or a brotherhood, and from which springs naturally an appreciation of the necessity for community of knowledge.

To carry out the military simile in another form, while the general practitioners constitute the main body and strength of an army, the officers of which

are all promoted from the ranks, the specialists form a skirmish line of volunteers going out in different directions to explore, to gather information, and, most important sequence, to report back to the main body the line upon which it may, after corroborative investigation, with safety advance.

One of the duties, therefore, of the specialist, and particularly of the specialist with material for investigation at his hand, is *to investigate*, and another of his duties is *to teach*, in so far as the gift of teaching has been given him, to report as simply and as plainly as he can that which he has learned, since the knowledge which he has acquired is not his, but is held in trust as the property of that main body of which he is one of the rank and file on special service.

IMPROVED PROVISION FOR THE INSANE AT PROVIDENCE, R. I.

NOR the least important work of the late Dr. William B. Goldsmith for the advancement of the standard of hospital treatment for the insane is to be seen in the new ward for men at the Butler hospital in Providence. This building, called, in honor of Dr. Goldsmith's predecessor, the John W. Sawyer Memorial Ward, probably as well represents to-day all that is desirable in hospital construction as any structure in this country.

The building is especially intended to accommodate patients of the class to whom association with large numbers of others is objectionable, if not injurious, and for those whose means enable them to pay for comforts and luxuries not commonly to be found in hospital wards. By its architectural arrangements such a classification of its occupants is provided for as will remove from it as far as possible the unpleasant features of asylum organization.

Through especially arranged apartments excellent provision is made for the treatment of acute or excited cases, while those suffering from the milder forms of mental disease, whose sensibilities are still keen, and whose appreciation of the comforts and freedom of home life is still active, are admirably provided for. Altogether this new feature of the Butler hospital is a gratifying evidence of the increasingly liberal tendency in the hospital treatment of the insane, and is well worthy the careful investigation of those interested, professionally or otherwise, in institutions of the class to which it belongs. The building was formally opened in June, 1888, and will doubtless serve, to a greater or less extent, as a model for the improved accommodations for those suffering from mental diseases which are demanded by the advances in medical science and a more enlightened public feeling.

THE SPREAD OF TUBERCULOSIS.

At a meeting of the Society of Medical Jurisprudence and State Medicine held November 8th, Dr. G. J. Johnson read a paper on tuberculosis in animals, in which he expressed the conviction that nearly all human tuberculosis was caused by eating the flesh of animals or poultry, or drinking the milk of cows affected with the disease. While it was almost impossible to estimate the prevalence of animal tuberculosis, he believed that in a considerable percentage of all cattle the bacilli of the disease existed, and that the danger of putting upon the market the meat or milk from affected animals could not be over-estimated.

To substantiate his position Dr. Johnson stated that in the few countries where no cattle exist a case of tuberculosis has never been known among the inhabitants; and hence he claimed that if tuberculous cattle could be exterminated consumption would die out among men. In furtherance of this end he thought that the government should pay farmers liberally for killing all their affected cattle. The germs of the disease are no doubt spread to a large extent by the habit which is so common among the animals of licking each others' noses; the excessive discharge at the nostrils incident to the disease being filled with the bacilli.

In Europe this matter has already received considerable attention on the part of the authorities, and in Belgium the government had gone so far as to order that any calf from which vaccine virus is taken shall be killed and a post-mortem search made for tuberculosis in order that by no possibility may the disease be conveyed to those vaccinated.

In the discussion which followed the reading of the paper, Dr. E. F. Brush, who has made a special study of bovine tuberculosis, agreed substantially with the views of Dr. Johnson, but thought the danger from eating meat or drinking milk infected with its germs was not quite as great as represented by the latter.

MEDICAL NOTES.

IN MEMORIAM DR. JOSEPH SARGENT.

THE following minute was adopted at a meeting of the Worcester District Medical Society, November 14th:—

The death of Dr. Joseph Sargent is an event of marked interest and importance in the history of the Worcester District Medical Society. His conscientious devotion of great natural and acquired abilities to the service of this society during an unprecedentedly long term of membership, has given him a claim to our highest consideration and affectionate regard. And no less has the honor

he has conferred upon our profession in this community, by a noble and exceptionally useful and honorable life, entitled him to a permanent and enduring remembrance. Every member of our society, and every member of the profession within the wide circle of his acquaintances and service will hold in kindly remembrance the genial friend, wise counsellor, and beloved associate; and those who may come after us will find no page in all our history more interesting and instructive than that which records his virtues and the story of his life.

Upon the privacy of that domestic circle, where the blow has fallen with a force that even those of us most intimate can scarcely comprehend, we have no right to intrude with any expressions of our sorrow; and yet, whether it shall come to the ear of the afflicted family or not, we can enter here upon our records an expression of that affectionate sympathy which springs spontaneously from a keen sense of the great bereavement they have been called to suffer.

—J. M. French, M. D., will contribute to the December *Popular Science Monthly* an article on "Infant Mortality and the Environment." Dr. French points out the chief causes of infant mortality, both those which are due partly to heredity and to the surroundings.

—"Dr." Hostetter, the millionaire patent-medicine maker of Pittsburg, Pennsylvania, died without leaving a will. The reason has just become known. A few weeks ago he made a will which contained a bequest giving Pittsburg a fine art gallery and mechanics' hall, to cost \$1,000,000. Mr. Hostetter was bondsman for a city contractor, and a judgment had been rendered against him. An execution was issued on some of the doctor's possessions. He said he would willingly have paid the claim if the process had not been taken, but he was angered by this action on the part of the city officials, at once tore up the will and refused to make another. His bitters seem to have struck in.

—Cable dispatches to the daily papers announce that the wonders of the telegraph have just been illustrated by a consultation by land lines and cable between physicians in Victoria, B. C., and London, England. Lord Ennismore, heir to the English earldom of Listowell, is lying at the point of death in the hospital at Victoria with typhoid fever, accompanied by other complications. A telegraph circuit was formed from London to Victoria by the Mackay-Bennett cable and the Canadian Pacific Railway telegraph, and Sir Andrew Clarke, the distinguished London physician, was placed in direct consultation with Dr. Haunington in Victoria.

A conversation lasting three hours concerning

Lord Ennismore's condition was carried on. An unbroken circuit was worked from Victoria to the cable office in New York, where the telegrams were repeated to London. Replies were received in three and four minutes.

—Medical men, we think, are likely to feel a peculiar interest in one form of education of the brain which enables men to overcome a deeply seated instinct, namely, the instinct of giddiness in high places. We clip from a letter in the *New York Sun* a description of the work upon the Eiffel Tower in Paris:—

"The Eiffel Tower, after a three or four days' strike in September, is ascending rapidly. The height is now about five hundred feet, or one-half the total elevation. As it narrows gradually in its upward progress, the quantity of material to be hauled up to the dizzy working platforms becomes less and less. Besides, they have begun to employ a new system of machinery. Certainly, it is to me a wonderful spectacle to watch the squads of men suspended aloft on their narrow plank footing—some turning gigantic cranes, some blowing into a fierce blaze the furnaces in which they heat their bolts and other fastenings, while on all the four sides of the tower these hardy workers in iron are seen swinging their hammers, driving home the bolts that fasten uprights and cross-beams, with nothing beneath them, frequently, but a platform the width of two planks.

It is a fearful but a marvellous sight, this monumental tower, growing up, up, up till it surpasses anything ever attempted by human daring. How, high up in mid-air, far above the summits of the loftiest hills around Paris, these poor workmen will be able to continue their labors through the cold and snows of autumn and winter is a problem of human endurance, skill, and perseverance which I cannot solve."

—The *Quarterly Therapeutic Review* quotes Dr. A. Sharkhovski, writing in the *Russkaya Meditsina*, who strongly recommends hourly doses of salicylic acid or salicylate of soda in malignant scarlet fever, saying that since he adopted this treatment his mortality has been very greatly reduced, only three cases having proved fatal out of one hundred and twenty-five, all of them malignant, these three being cases were some other disease or bodily defect was present. The prescriptions which he gives are: Forty grains of salicylate of soda in six ounces of distilled water: a teaspoonful or a tablespoonful to be taken every hour according to the age of the patient. Or, better still, fifteen grains of salicylic acid in six ounces of hot distilled water and one ounce of syrup of orange. This does not deposit

on cooling, and is not disagreeable, so that children take it readily.

—The *Lancet* believes that much of the coughing to be heard in public assemblies, especially in church, could be avoided by a little care and attention on the part of the coughers. It advises that clergymen may cautiously and courteously call the attention of their congregations to the matter; and suggests that notices posted on the church doors might be received in better part than verbal admonitions from the desk. Meantime it recognizes that faulty heating and ventilation are responsible for some of the necessary coughing which would be left even if the numerous careless and imitative coughs could be suppressed.

NEW ENGLAND.

—City Treasurer Turner, who acted as treasurer of the fund raised in Boston for the relief of the yellow-fever sufferers at Jacksonville, Florida, has closed the account. The amount contributed was \$16,302.97.

—The twenty-fifth annual meeting of the corporation of Rhode Island Hospital was held at the hospital, Nov. 14, with the president, Governor Taft, in the chair. Mr. Arnold Green read the report of the board of trustees, showing the condition of affairs at the hospital during the past year. The average number of patients each day during the year had been 34 13-100; the largest number at any time was 106, and smallest number 67.

The receipts for the year were \$42,187.60, and the expenditures \$50,263.29.

—At the seventeenth annual meeting of the New Haven Dispensary, held November 13, Dr. Fleischner, secretary, presented his report, which showed that the work had been conducted as in preceding years, and that the donations had been liberal, but inadequate to meet the requirements of the institution, and confined to a limited number of people. He stated that the usual deficit on account of rent due Yale University would be eliminated from future reports, the university having offered the dispensary quarters in the medical school free of charge. It is thought that the institution will now be solvent.

NEW YORK.

—The twelfth annual meeting of the American Academy of Medicine was held in the governor's room of the New York hospital, November 13th and 14th, with the President, Dr. Frederick H. Gerrish, in the chair. Among these present from a distance were Drs. Wm. B. Canfield, of Baltimore; R. J. Levis, J. Preston Morris, W. B. Atkinson, Theophilus Parvin, Richard J. Duglison, and James G. Wilson, of Philadelphia; Henry O. Marcy and

Samuel Nelson, of Boston; W. S. Todd, of Bridgeport, Connecticut; E. N. Stoddard, of Rochester; George J. Fisher, of Sing Sing; Trail Green, of Easton, Pennsylvania; Leartus Connor, of Detroit; E. H. M. Sell, of Allentown, Pennsylvania; C. E. Webster, of Portland, Maine; and R. L. Sibbet, of Carlisle, Pennsylvania.

The annual dinner was held at Martinelli's on the evening of the 13th. During the meeting about one hundred new fellows were elected.

— The forty-first anniversary of the New York Academy of Medicine was celebrated November 15th, when Dr. D. B. St. John Roosa delivered the address, taking for his subject, "The means of perfecting the unity of the medical profession."

— The annual meeting of the Society for the Relief of the Ruptured and Crippled was held November 14th, at the hospital building at the corner of Forty-second street and Lexington avenue. During the past year three thousand three hundred and eighty cases of rupture were treated, making forty-two and one-fourth per cent. of the whole number of patients. Dr. Virgil P. Gibney was appointed surgeon-in-chief, and Dr. W. T. Bull surgeon in the hernia department.

Miscellaneous.

THE ARMY MEDICAL CORPS.

SURGEON-GENERAL MOORE has reported to the Secretary of War that the Army Medical Board, convened at New York, which adjourned on October 31st, examined twenty-seven candidates for admission to the Medical Corps and fourteen assistant surgeons for promotion. Of the former, six were rejected as physically disqualified, seven as professionally disqualified, while twelve withdrew and only two were approved. Of the assistant surgeons, ten were found qualified and four disqualified. The working methods of this board, says the Surgeon-General, differed radically from those of any of its predecessors. The candidates for admission to the corps were grouped for examination in classes of fifteen and twenty-two, the members being examined simultaneously during a week. Since the adjournment of the board a vacancy in the Medical Corps has occurred by the death of Assistant-Surgeon Weisel; another will take place on November 14th, by the retirement of Surgeon Bailly, and a third in April, by the retirement of Surgeon Magruder. It is accordingly recommended that the board be reconvened in May, 1889.

THE BACILLUS OF DIPHTHERIA.

D'ESPIRE of Geneva has made a series of researches confirmatory of Löffler's claim that a certain bacillus discovered by him in diphtheritic false membranes is the causal agent of diphtheria. The results are published in the *Lyon Medical*. D'Espine has never failed to find Löffler's bacillus in cases of true diphtheria or diphtheritic croup; and he has in

many instances succeeded in reproducing the disease in hares and guinea pigs by inoculating the products of a series of pure cultures; bacilli from a twenty-fifth culture were proved to have the same pathogenic properties, and speedily induced the disease.

GIRDING UP THE LOINS.

THE drift of public discussion in England, not only among scientists, but also among athletes and others interested in physical training, seems, according to an editorial in *Science*, to be against the acceptance of Professor Roy's defence of stays and corsets at the recent meeting of the British Association. Some of the leading journals of London were instant in their approval of Professor Roy's theories; but where they have done so, immediate protests have come from their readers. *The Spectator*, for instance, in a recent number, after quoting Professor Roy's assertion that the desire for waist-belts is instructive, and has been displayed by all athletes, and persons of whom exertion is required, since the beginning of history, adds, "It will be observed that this argument, which is certainly true of all runners, Asiatic or European, applies to men equally with women, though men gird themselves only to meet special calls upon their strength." To this a recent graduate from Cambridge, where he was distinguished as a runner and long-distance bicycle-rider, protests that neither runners nor experts upon the wheel, at that university, ever used, or showed a desire to use, tight waist-belts. On the contrary, it was their custom to gird themselves as loosely as possible in order to allow free movement of the diaphragm. If rowers even wear waist-belts, they are so loose as to cause no interference with the freest movements of all the muscles of the body. It is probable that the habit of "girding up the loins" preparatory to physical exertion originated in Oriental countries, where in ancient times, and now as well, the peculiar form of the prevailing costume made it necessary in order to secure free movement of the limbs. A custom once established needs no further explanation. It may survive long after there is any reason for it. The Hittites wore peaked-toed, turned-up shoes thousands of years after their ancestors had come from the mountains of the north, where the form of their snow-shoes suggested the peculiar fashion; and the daily life of every people is full of instances that might be cited. Nobody to-day places restraint upon any of his organs if he desires to excel in feats of strength or speed. He may wear a waist-belt, but it is never so tight, as has already been remarked as to rowers, as to interfere with the free play of the muscles.

Correspondence.

THE BUSTLE.

MR. EDITOR.—The political organization that demanded on its transparency "More bustle in the White House," shows how firmly man is welded to his idols, though the "great bargains" advertised by the far-sighted dealers indicate that the bustle is already passing away.

Yours truly,

JUVENUS.

REPORTED MORTALITY FOR THE WEEK ENDING NOVEMBER 10, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhæal Diseases.	Typhoid Fever.	Diph. & Croup.
New York.....	1,526,081	627	226	17.76	14.08	2.40	1.59	5.28
Philadelphia.....	1,016,758	334	96	13.05	15.08	1.16	3.77	4.35
Brooklyn.....	751,432	255	90	19.11	11.31	1.56	1.56	10.92
Chicago.....	760,000	—	—	—	—	—	—	—
St. Louis.....	449,160	—	—	—	—	—	—	—
Baltimore.....	437,155	118	43	17.00	8.47	85	3.40	7.65
Boston.....	407,024	180	56	11.11	16.66	65	1.11	7.22
Cincinnati.....	325,000	77	—	14.19	11.61	—	9.03	3.87
New Orleans.....	248,000	115	44	17.00	11.15	9.35	—	2.55
Buffalo.....	230,000	—	—	—	—	—	—	—
Washington.....	225,000	69	23	21.75	15.95	2.90	10.15	5.80
Pittsburgh.....	210,000	—	—	—	—	—	—	—
Milwaukee.....	200,000	—	—	—	—	—	—	—
Providence.....	120,000	—	—	—	—	—	—	—
New Haven.....	80,000	—	—	—	—	—	—	—
Nashville.....	65,153	31	17	19.38	3.23	—	3.23	6.46
Charleston.....	60,145	28	13	21.42	7.14	14.28	7.14	—
Portland.....	40,000	12	1	8.33	8.33	8.33	—	—
Worcester.....	76,328	22	10	22.75	9.10	4.55	9.10	4.55
Lowell.....	69,530	—	—	—	—	—	—	—
Cambridge.....	64,079	17	7	17.64	23.52	5.88	—	11.76
Fall River.....	61,203	26	9	19.25	15.40	—	3.85	3.55
Lynn.....	51,467	15	—	20.00	26.66	6.66	—	12.33
Lawrence.....	40,175	8	3	12.50	12.50	—	12.50	—
Springfield.....	39,952	15	4	39.96	6.66	13.33	—	26.66
New Bedford.....	36,298	11	0	—	18.18	—	—	—
Somerville.....	33,307	4	3	50.00	25.00	—	—	25.00
Holyoke.....	32,887	—	—	—	—	—	—	—
Salem.....	28,781	8	2	—	25.00	—	—	—
Chelsea.....	27,552	8	2	12.50	25.00	—	—	12.50
Haverhill.....	24,979	6	4	16.66	—	16.66	—	—
Taunton.....	24,796	8	0	25.00	25.00	—	12.50	12.50
Brockton.....	24,784	7	3	—	28.56	—	—	—
Gloucester.....	23,187	—	—	—	—	—	—	—
Newton.....	21,105	2	0	—	—	—	—	—
Malden.....	18,932	9	1	—	22.22	—	—	—
Fitchburg.....	17,534	4	0	—	25.00	—	—	—
Waltham.....	16,651	4	0	25.00	25.00	—	—	25.00
Newburyport.....	13,539	3	0	—	33.33	—	—	—
Northampton.....	13,479	—	—	—	—	—	—	—

Deaths reported 2024: under five years of age 657; principal infectious diseases (small-pox, measles, diphtheria and croup, whooping-cough, erysipelas and typhus) 389; consumption 278; lung diseases 273; diphtheria and croup 25; typhoid fever 56; diarrhæal diseases 52; scarlet fever 47; malarial fever 27; whooping-cough 23; measles 16; cerebro-spinal meningitis 4; small-pox, New York 1. From scarlet fever, New York 26, Philadelphia 12, Brooklyn 5, Fall River 3, Baltimore 1. From malarial fever, New Orleans 9, New York 7, Brooklyn 4, Nashville 2, Baltimore 1. From whooping-cough, New York 16, Baltimore 4, Brooklyn 2, Worcester 1, Boston 1. From measles, New York 8, Fall River 3, Brooklyn and Cincinnati each. From cerebro-spinal meningitis, New York, Boston, Worcester, and Fall River each.

In the 25 greater towns of England and Wales with an estimated population of 9,388,278 for the week ending October 27th, the death-rate was 21.8. Deaths reported 3930; under one year of age, 1022; measles 100, diarrhæa 93, fever 63, scarlet fever 53, diphtheria 47, whooping-cough 45, small-pox (London and Preston) one each—two.

The death-rates ranged from 15.7 in Derby to 32.8 in Manchester; Birmingham 19.3; Bradford 20.7; Hull 22.4; Leeds 24.4; Leicester 16.0; Liverpool 22.8; London 21.2; Nottingham 21.0; Portsmouth 22.1; Sheffield 20.3; Sunderland 22.2.

In Edinburgh 16.1; Glasgow 21.2; Dublin 27.9.

OBITUARY. HENRY B. SANDS, M.D.

Dr. Henry B. Sands, widely known as a surgeon and lecturer on anatomy, died suddenly Sunday afternoon, November 18, in his own carriage on Fifth Avenue, probably of apoplexy. He had recently been in the best of spirits and apparent good health. He attended church in the morning, and then ate a hearty meal before starting out to make a professional visit. Returning he was conversing animatedly with a friend, Dr. A. Smith, when he suddenly turned to raise the carriage window. This seemed to his companion to be a little singular, as the doctor had remarked a few moments before that the after-

noon was rather cold. Dr. Smith immediately noticed that Dr. Sands' head was bent forward, and that he acted as though he was stifled. Dr. Sands then fell on the shoulder of his associate and in a few minutes was dead. The sadness of the death was accentuated by the fact that a number of gentlemen were assembled at Dr. Sands' house for a musical afternoon, and to his waiting friends only his dead body was brought home. Dr. Sands was born September 27, 1830, in New York, and had made that city and Brooklyn his only home. On entering the College of Physicians and Surgeons in this city he became known as a faithful and energetic student. He graduated from the college in 1854 and after a service as interne in Bellevue Hospital and a year or more of study abroad, on his return, in 1857, he was made Demonstrator of Anatomy in the College of Physicians and Surgeons. From that date he became well known all through the city. He has lectured on anatomy and surgery in the Medical College of Physicians and Surgeons to the present time. He has also during the past twenty-five years been connected with every hospital in the city. His last position was sitting surgeon at Roosevelt Hospital, from which he resigned only last spring. He was married in 1859 to Miss Curtiss of Brooklyn. Two of his children by this marriage—Dr. Robert A. Sands and Miss Josephine Sands—survive him. His second marriage, in 1878, was to a daughter of Peter Hayden. One son by this marriage is living.

Dr. Sands was a Director of the Vanderbilt Clinic, a member of the New York Academy of Medicine, the County Medical Society, the Pathological Society, the Physicians' Mutual Aid Association, the Society for the Relief of Widows and Orphans of Medical Men, and of the Medical and Surgical Society. He was also connected with the New York Philharmonic Society.

Dr. Sands has often been before the public from his connection with the cases of celebrated men, having been called as a consultant in the cases of President Garfield, General Grant, Roscoe Conkling, and other public men. His private and hospital surgical practice was large and varied, and he had achieved exceptional success in laparotomy. In him, certainly, America has lost one of her foremost surgeons.

The meteorological record for the week ending November 10, in Boston, was as follows, according to observations furnished by sergeant J. W. Smith, of the United States Signal Corps:—

Week end'g Saturday, Nov. 10, 1888.	Barom- eter.	Thermometer.				Relative Humidity.		Direction of Wind.		Velocity of Wind.		State of Weather.*		Rainfall.	
	Daily Mean.	Daily Mean	Maximum.	Minimum.	S. A. M.	S. P. M.	Daily Mean	S. A. M.	S. P. M.	S. A. M.	S. P. M.	S. A. M.	S. P. M.	Duration, Hours & Min.	Amount in inches.
Nov. 4	30.22	48.0	56.0	40.0	63	47	55.0	W.	W	12	4	C.	C.		.0
" 5	30.27	54.0	61.0	45.0	63	71	67.0	S. W.	S. W.	18	13	F.	O.		
" 6	2.196	63.0	70.0	50.0	89	80	84.0	S. W.	S. W.	8	21	O.	O.	0.05	T.
" 7	30.16	52.0	60.0	44.0	69	51	69.0	W.	S. W.	13	13	F.	C.		
" 8	30.44	45.0	47.0	39.0	63	79	74.0	E.	S. E.	11	13	O.	R.	2.10	.01
" 9	29.94	57.0	66.0	45.0	93	85	89.0	W.	S. W.	7	12	O.	R.	7.00	.10
" 10	29.66	46.0	50.0	43.0	100	96	98.0	N. E.	N. E.	18	2	R.	R.	21.00	1.14
Means for the Week															

* O, cloudy; C, clear; F, fair; G, fog; H, hazy; S, smoky; R, rain; T, threatening; N, snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM NOVEMBER 10, 1888, to NOVEMBER 16, 1888.

By direction of the Secretary of War, the retirement from active service, this date, by operation of law, of Colonel Elisha J. Bail, surgeon, under the provisions of the Act of Congress, approved June 30th, 1882, is announced. Colonel Bail will report to his home. Paragraph 1, S. O. 266, A. G. O., Washington, November 14, 1888.

By direction of the President, Lieutenant-Colonel Basil Norris and Major Henry R. Tilton, surgeons U. S. Army, are detailed as members of the Army Retiring Board appointed to meet at San Francisco, Cal., by War Department order, dated October 27, 1888. Published in Special Orders, No. 233, October 30, 1888. From Headquarters of the Army, Vice Colonel Elisha J. Bail, surgeon, and Captain John J. Cochran, assistant surgeon, hereby relieved. Paragraph 13, S. O. 261, A. G. O., Washington, November 8, 1888.

McLELLAN, ELY, Major, surgeon, is relieved from duty at Jefferson Barrack, Mo., and will report for duty at Chicago, Ill., as attending surgeon and examiner of recruits. Paragraph 15, S. O. 261, A. G. O., Washington, November 8, 1888.

BARTHOLOMEW, JOHN H., Major, surgeon, is relieved from further duty in the Department of Texas, and will report to the commanding officer at Philadelphia, Pa., as attending surgeon. Paragraph 15, A. G. O., Washington, November 8, 1888.

ARTHER, W. H., assistant surgeon, upon being relieved by acting assistant surgeon J. L. Ord, will proceed to comply with paragraph 21, S. O. No. 256, e. c. Headquarters of the Army. Paragraph 5, S. O. 123, Hdqrs. Department of Arizona, Los Angeles, Cal., November 5, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING NOVEMBER 17, 1888.

SWAN ROBERT, passed assistant surgeon, ordered before Retiring Board, 19th inst.

SOCIETY NOTICES

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A Regular Meeting of the Society will be held at the Medical Library on Monday, November 26, at 7.45 P. M. Reader, Dr. H. L. Morse: Subject, "Treatment in cases whose symptoms point to inflammation in the Mastoid Antrum and Mastoid Cells, but which do not call for an Artificial Opening into the Mastoid Process."

F. B. HARRINGTON, M. D., Secretary.

NORFOLK DISTRICT MEDICAL SOCIETY.—A Meeting for Scientific Improvement will be held at the Hall of the Roxbury City Guard, 67 Warren St., Roxbury, November 27, 1888, at 7.45 P. M. Communications: "A Case of difficult Diagnosis.—Typhoid Fever or Consequences of a reduced Intestinal Hemorrhage," by F. B. Stephenson, M. D.; "The Treatment of Chronic Ulcer of the Leg," by J. Gillespie, M. D.

S. ALLEN POTTER, M. D., Secretary.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION will hold its annual meeting at Birmingham, Ala., December 4th, 5th and 6th, 1888. An exceedingly full programme is offered, as well as interesting excursions and entertainments.

ASSOCIATION OF ACTING ASSISTANT SURGEONS OF THE U. S. ARMY.—1888.

THOSE amillar with the Army Medical History of the frontier for the past twenty or thirty years will readily bear witness to the faithful and intelligent discharge of their duties by the Acting Assistant Surgeons of the U. S. A. In fort and in camp, on the long overland expedition, or in the Indian wars, these men have done their duty as faithfully and with the same professional efficiency as if they had been regularly commissioned officers. Indeed, if they have not borne the burden and heat of the day,

certainly their honorable records deserve recognition and preservation.

An association of past and present Acting Assistant Surgeons of the United States Army has been formed for the purpose of securing, so far as possible, a correct history of those who have served in this capacity, and also for mutual protection and benefit.

The Association desires to obtain a complete list of all medical men who have served as Acting Assistant Surgeons in the United States Army, and, so far as possible, their complete medical history, date and place of birth, date and place of graduation, date of appointment, medical service and stations, list of contributions to medical literature, inventions, etc., date of termination of service, professional positions held in civil life, present residence and address.

All information from friends concerning deceased Acting Assistant Surgeons will be gratefully received.

All past and present Acting Assistant Surgeons are cordially invited to become members of the Association.

The badge of the Association is the Geneva Red Cross.

The enrollment fee is \$1.00.

The necessary blanks will be forwarded upon application.

W. THORNTON PARKER, M. D.,

Recorder A. A. A. S.

NEWPORT, R. I.

BOOKS AND PAMPHLETS RECEIVED.

The Preferable Climate for Phthisis; or, the Comparative Importance of different Climatic Attributes in the arrest of Chronic Pulmonary Diseases. By Charles Denison, A.M., M.D.

Medical Diagnosis. A manual of Clinical Methods. By J. Graham Brown, M. D., etc., etc. Second edition illustrated. New York: E. B. Treat, 1888.

Miss Parlow's New Cook Book. By Maria Parlow, Principal of the School of Cooking in Boston, etc. Limited Edition. Boston: Published by Estes and Lamart.

Clinical Lectures on certain diseases of the Nervous System. By Prof. J. M. Charcot, etc., etc. Translated by E. F. Hurd, M.D. Detroit: George S. Davis, 1888.

The Life Insurance Examiner. A practical treatise upon Medical Examinations for Life Insurance. By Charles F. Stillmann, M.S. M.D., etc., etc. New York and Chicago Spectator Co. 1888.

Treatise on the Diseases of Woman. For the use of Students and Practitioners. By Alexander J. C. Skene, M.D. With 251 engravings and 9 chromo-lithographs. New York: D. Appleton & Co. 1888.

Cataract Extractions, with only the Eye operated upon closed by Adhesive Strips. The other Eye left open for the Guidance of the Patient. By Julius J. Chisolm, M.D., Professor of Eye and Ear Surgery in the University of Maryland, and Surgeon-in-Chief of the Presbyterian Eye and Ear Charity Hospital of Baltimore. Read in the Section on Ophthalmology, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888. Reprinted from the "Journal of the American Medical Association," November 3, 1888, Chicago, 1888.

The Great Value of a 0.25 D. Cylinder in the Relief of Headache and Eye Pains. By Julius J. Chisolm, M. D., Professor of Eye and Ear Diseases in the University of Maryland, and Surgeon-in-Chief of the Presbyterian Eye and Ear Charity Hospital of Baltimore. Read in the Section on Ophthalmology and Otolaryngology, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888. Reprinted from the "Journal of the American Medical Association," October 27, 1888, Chicago, 1888.

Our Present Knowledge regarding Muscular Atrophies and Hypertrophies. By Laudon Carter Gray, M.D. Reprint.

Three Successful Cases of Cerebral Surgery. Including (1) the removal of a large intracranial fibroma; (2) excision of damaged brain tissue; and (3) excision of the cerebellar centre for the left hand, with remarks on the general technique of such operations. By W. W. Keen, M.D., Professor of Surgery in the Woman's Medical College of Pennsylvania; Surgeon to St. Mary's St. Agnes's, and the Woman's Hospitals, etc. From the American Journal of the Medical Sciences, October and November, 1888.

Original Articles.

EXCISION OF THE BREAST FOR CANCER.¹

R. M. HODGES, M. D.

THE technical simplicity of excision of the female breast leads—or has led—to its being performed with but little hesitation even by those not accustomed to surgical operations of similar importance. Tumors of the breast are frequent, and excite so much anxiety in the minds of women, that a degree of familiarity with their character is acquired by every practitioner. The traditional importance ascribed to excision, over-persuasion of her advisor by the patient, or of the patient by her officious *entourage*, and commiseration for distress, encourage on all sides a disposition to “do something.” The question of interference being decided affirmatively, family physicians often become surgeons for the occasion. The financial value of this operation is such, that were it stricken from the list of permissible surgical procedures, the fact would be perceptibly recognized by many a professional income. In other words, excision of the breast is one of the most common of the major operations of surgery; the inducements to perform it are numerous; and the judgment with which it is undertaken not always so discriminating as might be desirable.

Within the last decade, however, a new departure in the operative surgery of cancer of the breast—suggested more than twenty years ago by the late Mr. Charles H. Moore, of Middlesex Hospital, London, in a paper entitled, “The Influence of Inadequate Operations in Cancer” (*Med. Chir. Trans.*, vol. l. p. 225)—has offered itself for consideration. Its requisitions eliminate excision of the breast for cancer from the category of commonplace operations, and are certainly calculated to diminish the frequency of its performance.

According to Mr. Banks, of Liverpool (*British Med. Journal*, December 9, 1882), one of its oldest and most earnest advocates, the attitude of this innovation in regard to the removal of a cancerous mamma is, that the integuments are to be sacrificed without heed to the question of covering the wound; [*i. e.*, extent of disease should not be an obstacle in operating;] that the fascia is always to be dissected from the pectoral muscle, with as much fibre of the latter as may be deemed advisable; and, whether involved or not, that the axilla is to be cleared, not merely of glands, but of all its tissues,—nerves and vessels excepted,—with a completeness only equalled in a dissection for anatomical demonstration. Furthermore, if recurrence of the disease takes place, operation after operation should be performed, with the most callous and exacting effort at thorough extirpation.

The partisans of this “completed method,” as it is called, inculcate the necessity of its adoption in the earliest stages of a growth’s development, on account of the alleged “local origin” of cancer.

The claim of this radical measure is, a prolongation of life, not otherwise attainable, and an actual “cure” of cancer in a percentage of cases far from inconsiderable, sufficiently great to justify its

admitted danger and mortality. One of its upholders says, “There are so many examples of final cure after repeated operations, that faith in the knife should not be too easily shaken. It is sometimes a question which should wear out the sooner, the blade or the disease. There are instances of cure after five, six, seven operations. If need be, we should say, seventy times seven, rather than grow weary in well doing”² (*New York Med. Record*, January 22, 1887).

In the following paper I propose to consider the treatment of mammary cancer by excision, especially the method of excision just described; and in so doing I shall help myself, without scruple, to the writings and observations of others.

Before entering upon the details of this subject I venture to make the remark that our knowledge of cancer is very defective, in fact, almost wholly ethical. The question, “What is cancer?” includes the more important one, “What is the cause of its malignancy, or of that potentiality, the essence of which is the production of secondary formations?” Neither of these natural inquiries has yet received an answer. The laws governing the conditions or the time required for a metastatic development of cancer are absolutely unknown, and whether or no the theory of its “local origin” is a justifiable one has not been definitively settled. A blow on the breast may be followed by—perhaps even occasion—a cancer of that part. Such an event, extremely rare in comparison with the frequency of blows in the region, implies a pre-existing state, sensitive in an exceptional way to the influences of an injury, and lying in wait, as it were, for some local disturbance to set its peculiar forces in motion. But it does not follow that the tumor which happens to develop in that particular spot is therefore a distinctly local affair.

The statements of Dr. M. H. Richardson are of importance in this connection. In his elaborate analytical “Observations on the Surgical Treatment of Malignant Growths” (*Boston Med. and Surg. Journal*, August 30 and September 6, 1888) he says, “I have never made this dissection (*i. e.*, of the axilla in connection with excision of the breast) in any case where I have not found some of the glands affected, even when nothing could be felt on the outside. The investigations of Dr. Whitney have also shown that this mass of fat (*i. e.*, the axillary) contains or may contain clusters of cancer cells, wholly independent of the glands, and when

“Surgeons are beginning to know that cancer can be cured by thorough operations, if it be attacked before it has disseminated itself extensively locally, or has tainted the general system. In favor of this modern doctrine the life history of the affection shows, first, that it is primarily a local degeneration of the mamma, and that its tendency is to advance locally, to the surface before it invades the deeper structures, the lymphatic glands, and the viscera; and, secondly, that local infection does not ensue, on an average, before the expiration of thirteen months, the skin being involved in fourteen months, the lymphatic glands in fifty months, the walls of the chest in twenty-two months, and the viscera in twenty-one months. Hence if the local trouble can be gotten rid of before it has contaminated the adjacent and distant structures, there is no reason why the remedy should not prove to the surface before it is for the non-carcinomatous neoplasms.” (*A Practical Treatise on Tumors of the Mammary Gland*. S. W. Geo & Co., New York, 1880, p. 223.)

At the seventeenth congress of the German Surgical Society, held in Berlin, April 4, 5, 6, 7, 1888, Herr Bergmann, the waiter of the congress, exhibited a patient upon whom he had performed resection of the mamma four times for carcinoma. The neoplasms had all been removed. The patient was perfectly well, and had gained forty pounds of flesh since the last operation. The most careful examination of the abdomen failed to reveal the slightest swelling in any portion. Herr Bergmann “felt justified, from the result in this case, in making the assertion that cancer is curable” (*New York Med. Record*, May 12, 1888, p. 734).

¹ Read before the Boston Society for Medical Improvement, November 12, 1888.

Other observers have found the lymphatics affected with malignant disease when not perceptibly enlarged." This being true of the axillary, it is also presumably true of the contiguous cervical, internal mammary, and mediastinal glands, or possibly of more remote lymphatic connections; but these facts certainly do not indicate, — they rather disprove, in a surgical sense, at all events, — a local initiative of cancerous developments, even when the paternity of any given case is seemingly recognizable. The testimony of dissections, as well as the principle of thoroughness upon which the doctrine of completed operations is based, would seem therefore to be at variance with, if not a surrender of, the theory of local origin. The more extensive the operation performed, the greater must be the assumed dispersion of the disease. Excision of the axilla in every instance of cancer of the breast would lose its meaning unless the locality were believed to be always pervaded by the disease, in its elementary forms at least, though it may be invisible to the naked eye.

The assertion that the "cure of the disease by the removal of the local growth is an unanswerable argument in favor of local origin" would certainly be true if "cures" occur often enough to make the averment a convincingly correct one, — often enough, for example, to satisfy observers that diagnosis has not been at fault, or that too much has not been arrogated when patients are claimed to have been "cured." "It is believed by some," says Mr. Paget, "that cancer of the breast is in the first instance a local disease. If this opinion were true we ought to find the average interval between removal of the disease and its recurrence bearing an inverse proportion to the time of duration of the cancer before removal. No such proportion, however, exists; nor does it even appear that recurrence is, on the whole, later after early than after delayed operations" (*in Lectures on Surgical Pathology*," by James Paget, 3rd ed., London, 1870, p. 653).

Beyond the fact that cancer is not a "blood-disease," — an abandonment of the idea that there is any special cachexia belonging to the cancerous, — and an acceptance of the general correctness of the theory of its epithelial origin, — we know but little about the affection (*vide Lancet*, July 7, 1888, p. 29). At all events, whether we hold cancer to be at first "local," or at first "constitutional," the result of surgical operations with a view to its cure must be the same in either case, unless we acquire, in some way, an ability to detect the disease before it has time to develop its tangible or obvious manifestations (Paget, *loc. cit.*, p. 655).

Up to the present, or rather, a recent time, of all chronic affections, cancer has been regarded as the most surely and absolutely incurable, progressing inexorably to a fatal result. "There is a striking contrast between the certain issue and the uncertain progress of cancers of the breast. Cases are on record in which life has been ended in four months, and others in which it has been prolonged twenty-five years; but I am not aware," says Mr. Paget, whose words I am quoting, "of a single clear instance of recovery; of such recovery, that is, as that the patient should live for more than ten years free from the disease, or with the disease stationary" (*loc. cit.*, p. 649).

As "cancer curing" has always been considered an opprobrious expression, it may properly be asked what do educated surgeons mean at the present time by a cure of cancer of the breast?

Dr. S. W. Gross ("A Practical Treatise on Tumors of the Mammary Gland," New York, 1880, p. 223), whose definition appears to find a certain degree of acceptance, says, as already stated, that the curability of cancer is confirmed by the practical test of the results of operations. Having shown by the numerical method that, in an average of cases, metastatic tumors develop in thirty-one months, and that death, preceded or not by operation, takes place in thirty-three months, he then alleges, if three years (thirty-six months) elapse after the last removal, one or more operations having been performed, that "local reproduction" takes place in less than one per cent. of all cases operated on. Therefore, if the patient survives three years after the last operation without appreciable recurrence of the cancer, or dies of some intercurrent malady under the same circumstances, she has recovered. Applying the "severe test of recovery," viz., that the patient should live "more than ten years free from the disease," Dr. Gross claims (*loc. cit.*, p. 142) that his tables "will show that rather more than one in six fulfils this condition."

Statistics of results, which are supposed to represent the experience of surgeons whose practice has been influenced by Mr. Moore's article on "Inadequate Operations in Cancer," indicate, for example, that, in ninety-seven cases of cancer of the breast, pursuing its natural course, not including thirteen still alive in bad condition, and fourteen whose fate was unknown, the average duration of life was 27.1 months; while in two hundred and twenty-four cases which died after operation with recurrence of the disease, the average duration of life was thirty-nine months. A collation of the two averages would seem to suggest that operation adds twelve months to the life of the patient (Gross, *loc. cit.*, p. 163 *et seq.*).

From a comparison in results between the two distinct procedures, amputation of the breast alone, and amputation of the breast together with excision of the axilla, it appears "On The Operative Treatment of Malignant Disease," by Henry T. Butlin: Philadelphia, 1887, p. 384 *et seq.* that, in one hundred and forty-one cases where the breast alone was removed, twelve died of the operation; forty-three were lost sight of after their recovery;³ twenty-seven were alive and well at various periods after the operation, but only eighteen of them had passed "the three years' limit." If to these eighteen is added the case of a patient who died of another disease long after the operation, there are nineteen cases of what are termed "complete cures" due to operation, to be compared, not with the total number of one hundred and forty-one, but with a total of ninety-eight, procured by deducting the forty-three cases of patients lost sight of after the operation.

The results of one hundred and seventy operations,

³ Forty-eight were dead or dying, or had been quite recently treated for recurrence *in situ*; three were dead, or dying of affection of the glands without local recurrence; three died of other causes than cancer, one of the three more than four years after the operation; three appear to have died of dissemination of the disease, without local recurrence.

which embraced amputation of the breast and removal of glands in the axilla, were: thirty-nine died of the operation: twenty-six were lost sight of soon after recovery;⁴ twenty-five were known to be alive and well at various periods after the operation; but the time which had elapsed was under a year in ten of these cases, and over three years also in ten of them. Add to these ten the case of a patient who died of apoplexy more than three years after operation without any sign of cancer, and deduct from the grand total of one hundred and seventy the twenty-six who were lost sight of, there will remain eleven instances of cure in one hundred and forty-four cases.

In view of these thirty cases (nineteen and eleven) cured out of three hundred and eleven operations, reduced to two hundred and forty-two by the patients lost sight of, Mr. Butlin says: "I am confident that we may regard operations for the removal of mammary cancer as successful in effecting a complete cure in rather more than 10 per cent. of all cases treated. I believe," he adds, "that a percentage of 12 to 15 per cent. is nearer the truth."

The total mortality in these three hundred and eleven cases was fifty-one, that of the larger operation being much more than twice as great as that of the lesser. Of three hundred and ninety-four "adequate" operations performed at the Bethany Hospital, Berlin, between 1873-76, 18.02 per cent. were fatal, and the mortality was two-thirds less where the axillary glands did not require removal. Thus, of two hundred and sixty-four cases in which the breast was amputated bodily and the axilla was cleaned out, 61, or 23.10 per cent., died; while, of one hundred and thirty cases in which the breast alone was removed, 10, or 7.69 per cent., only were fatal (Gross, *loc. cit.*, p. 227).

There are, on the other hand, a good many tables whose balance sheets are not at all in accordance with the exhibits which have just been given. It is shown, for instance, by the somewhat abused statistics of Leroy d'Etiolles, quoted by Lebert ("Traité Pratique des Maladies Cancéreuses," Paris, 1851, p. 183 *et seq.*), that of 2781 cases of cancer in general, in 1192 not operated on, still living, or who have died cancerous, eighteen survived more than thirty years after the development of the disease; while of eight hundred and one operated on, four only lived that length of time. Thirty-four non-operated cases and fifteen operated lived from twenty to thirty years; two hundred and twenty-eight non-operated and eighty-eight operated lived from six to twenty years. The compiler of these figures says: "It appears, therefore, that the advantage, so far as long duration of life is concerned, is not with those who are operated on;" and Lebert, from his personal tables of cancer of the breast alone, declares "that the duration of life is, on the average, no longer for women who have undergone one or several operations than for those who have not been operated on at all" (*loc. cit.*, p. 359).

Mr. Paget makes the average duration of life, from the patient's first observation of the disease, in sixty-one cases of mammary cancer, tabulated

⁴ Sixty-two died of recurrence of the disease, or of general carcinomatous disease; seventeen were alive with recurrence; one died of apoplexy, more than three years after the operation, without any sign of cancer, and may therefore be claimed to have been cured.

without selection, in which the growth ran its course uninterrupted by operative treatment, to be a little more than forty-nine months; and, in forty-seven cases in which the cancer was once or more removed by operation, the average duration of life was again something more than forty-nine months.⁵ He believes, therefore, that removal of the local disease makes no material difference in the average duration of life (*loc. cit.*, p. 649).

The sources from which these latter dissentient figures are derived antedate the period of modern surgical methods, so far as antiseptics, drainage, etc., are concerned. The locality of the operation presents well-recognized difficulties in their application; but with the best efforts, even of experts, the mortality of cases in which antiseptic dressings have been adopted appears by more than one estimate to be numerically higher than when no such expedients have been made use of. The experience in Esmarch's clinic sustains this statement. In one hundred and eighty-four operations there were sixteen deaths, or 8.7 per cent. under ordinary dressings; while in seventy-seven conducted upon the antiseptic principle, 7, or 9.1 per cent. were fatal (Gross, *loc. cit.*, p. 235). If the fact, that antisepticism permits and encourages greater thoroughness and severity in excising cancerous breasts, is used as a plea to extenuate and explain this mortality, we are asked to accept a surgical paradox which would offset the security of asepsis by the more critical operations which it inspires.

The "completed operation" is no longer *sub judice*. Dr. Gross' volume published in 1880, Mr. Banks' first article in 1882, and Mr. Butlin's detailed discussion of the method in 1887, have each dealt with the question on the basis of a large personal experience and of numerous cases. Indeed, it may be said to have been on trial ever since Mr. Moore's paper in 1867. All of these writers admit its great mortality, and there is no unanimity in its acceptance by surgeons at the present day. Even those who adopt the method lend it but a hesitating allegiance. Mr. Butlin, whose firm belief in thorough excision persuades him, as already quoted, that it is successful in effecting a complete cure in from 12-15 per cent. of all cases treated, is also equally ready to declare that he entirely disapproves of the "completed," "thorough," "wholesale," method of operating,—"I use his own words,—and considers it an unscientific, unsurgical proceeding, needlessly cruel to many women" (*loc. cit.*, p. 375).

In a discussion at the Harveian Society, March 3, 1887 (*Lancet*, March 12, 1887, pp. 538, 627; *British Medical Journal*, March 12, 1887, p. 572), following a second paper by Mr. Banks, on "The Advisability of Extirpating the Axillary Glands in all cases of Amputation of Scirrhus Mammæ" (his first paper having appeared five years before), Mr. Thomas Bryant remarked, while, theoretically, the completed operation was all which could be desired, that, turning from theory to practice, he felt it was worse than the incomplete. According to his own experience the average duration of life after the severe operation was not much greater than that following the milder procedure. Statis-

⁵ Mr. Paget says, "something more," because in the first list he includes five, and in the second six cases, still living more than forty-nine months from the first observation of the disease.

ties showed that with the incomplete operation one-third of the cases lived for six years, and one-quarter for ten years or more. It might fairly be questioned whether the completed gave better results.

Mr. Pick was not prepared to agree with Mr. Banks that clearing out the axillary space was either necessary or judicious.

Mr. T. Smith thought the greater mortality of the completed operation was lawful if the return of the cancer could be shown to be less frequent, but the fact was "the patients lived longest who had never been operated on."

It has been an established practice of surgeons to open the axilla if its glands are tangibly enlarged; but, as has already been shown, it is not possible to tell by the sense of touch to what extent the glands are affected, and they are always found to be more numerously and deeply implicated than supposed. That it may be impracticable to dissect out all which are even visibly involved is confessed by Mr. Banks (*loc. cit.*, p. 1138), who states that "in three cases there were still glands so adherent to the vein that they could not be removed, while the condition of the patient was such that it was clear the sooner she was off the table the better, lest an immediate sinking should occur."

In the forty-six cases of Mr. Banks' earlier paper there are five in which the breast alone was removed. The results in these were very decidedly better than those of the completed operation;⁶ while, from an analysis of his own collection of three hundred and eleven cases, one hundred and forty-one in which the breast only was removed, and one hundred and seventy of amputation of the breast and of removal of the glands in the axilla, Mr. Butlin says (*loc. cit.*, p. 384, 385), "setting aside the question of mortality, two points stand clearly out: first, the cases in which the breast alone was amputated afforded by far the largest proportion of cures; second, the proportion of cases in which the disease appeared in the axilla, without recurring in or near the scar, was singularly small, scarcely more than 3 per cent."

A Belgian surgeon, Dr. Boizard ("Etudes sur le Cancer," Bruxelles, 1882), claims to have cured no fewer than sixty-two out of one hundred and sixty-two patients whose cancer of the breast were treated by the application of caustic, a period of three years having been safely passed since the destruction of the disease. Mr. Butlin declares that, prejudiced as he was by such a statement, a close study of the book in which it is made has led him

to the opinion that the author's results are truthfully set forth, and that his success has been largely due to a much more rigid selection of cases for treatment than most operating surgeons are in the habit of practising (*loc. cit.*, p. 387).

If "cures" by caustic are to be accepted as reliable facts (which I cannot readily concede), they must also stand as an argument against the completed operation. The numerous observations of Dr. Richardson ("about sixty") and others (*see ante*, p. 57), indicating that there is no period, however early, where invasion of the axilla has not probably taken place, no exception to its being dissected out in cases where the cancer is apparently confined to the mammary gland can be made by those who promote this severe measure. Its uniform adoption means, therefore, in practice, a formidable immediate mortality; and, in accepting the responsibilities of so fatal a course of proceeding in every case of excision, it should not be forgotten that cancer, not unfrequently, is diagnosed from other tumors of the breast with something more than difficulty, unless it has already perceptibly involved the axillary glands.

The liberal quotations of figures and their analysis with which I have indulged myself, tempt me to ask if statistics, however useful in the study of other maladies, are really of value in the scrutiny of a disease like cancer. Those which have been collected as to the comparative duration of life, with and without operation, are simple, and doubtless in a measure reliable. Testimony in regard to recurrence, the rate of progress, the complications of the disease, the sufferings, or the relative condition of women whose breasts have been excised, and those who have been left to take their chances without the intervention of surgery, is necessarily indefinite; while that derived from the inmates of charitable institutions during the short period required by the exigencies of an operation, or from inquiries addressed to them or to their representatives, long after the operations were performed, or representing the opinions of physicians who have not followed the cases from the outset, can hardly claim the precision which is essential to practical conclusions. Data thus gathered are usually added to include with cancer a certain number of sarcomata, a leucemata, epitheliomata, and of tumors imperfectly diagnosed. Mr. Paget's admirable and elaborate discussion of cancer will impress any one, as that gentleman confesses himself to be, with the difficulty of drawing inferences or indications from an artificial dissection of the disease. A multiplicity of cases only complicates their apprehension, and in nothing more than by bringing to one dead level the important influences of the age at which the malady has developed itself, the varying kinds, or, rather, phases of cancer, and the widely different amounts of cachexia which follow its progressive evolution.

Cases of cancer of the breast present the greatest range of clinical dissimilance. In practice they must be taken as they come—circumscribed, nodular, *encreasse*, infiltrating, diffused, sloughing, atrophic, in the young and in the old, in the lean and in the fat. The ideal conditions of early diagnosis, and the opportunity of prompt removal, for which so much is claimed, cannot be commanded. Treat-

⁶ The cases on which Mr. Banks' first paper (British Med. Journal, Dec. 9, 1882, p. 1138) is based, are as follows:—Of thirty-five cases, of which one was an amputation, he reports as follows:—Of forty-seven cases, five the breast alone was removed, and in forty-one the breast and the axilla were both excised. One was operated on for not a third only, 88 were fatal, from the invasion of the axilla from the septum. In eleven the disease recurred, and ten of these had proved fatal at the time of the report. Three died within two years from other causes than cancer. Two were free from return after a period of ten to ten years. Five were free from return at the end of two years. One was free at the end of one year.

⁷ One of the cases of cancer well three years, and four months after the operation. One died at the end of a year, of some unknown disease, but without recurrence. One died of pneumonia at the end of eighteen months, also without recurrence. One, suffering from a rapidly growing sarcoma, died shortly of remission *en masse*. One died of adhesion of the axillary glands, apparently without recurrence in the breast. A diagnosis in this case was made at the Harvard Society. Mr. Banks would now feel compelled to excise the axilla in every one of these five patients, or in other words, to submit them to a much more "large" operation, than their disease really required, for the questionable benefit which might follow.

ment by operation, under all circumstances, being an uncertain recourse,—for we cannot assure ourselves or our patients that the tumor or the glands we extirpate are the only parts which have undergone a morbid change, answers—to the questions of expediency and propriety of its adoption, in any single instance, must hinge, not upon the conceptions drawn from statistics, but upon a judgment enlightened above all by the extent of an acquaintance with cancerous breasts from the beginning to the end of their existence. There should be no difficulty in estimating the success of an operation which has been adopted for so long a period and so generally; and there would not be if surgeons could appeal to an accumulation of individual experience recording a personal knowledge of cancer. The computed duration of life in those operated on in hospitals and in private practice presents a remarkable contrast, being, on an average, fifty-seven months in the former and forty-three months in the latter (*Med. Chir. Trans.*, vol. 43, 1862, p. 406). The lives, shorter by fourteen months, of those operated on in private can only be explained by the supposition that a greater accuracy of data for averging applies to the cases of patients watched in their own homes, and gives them a worse record than the computations made up from the less trustworthy facts obtainable in regard to those who have died after leaving a hospital.

Accepting as admitted, that patients not operated on, sometimes live twenty-five years with cancer of the breast, and in considerable numbers for more than three years; that cases of long duration raise the statistical average of life for those of short; that atrophic and colloid cancer (with their slow progress of four and of twelve years, respectively, as against the average two to three years), together with cases of mild malignancy or of temporary healing, may have been grouped in one common numerical estimate, and, on the strength of it, that patients are liable to be subjected to what Mr. Butlin calls the "surgical blunder" of a large and dangerous operation, as if all were suffering from an equally malignant disease; that the condition of patients, as tabulated at the end of three years, is not usually set forth, except so far as their cicatrices and axillæ are concerned,—it does not seem unreasonable to conclude that "cures" by the knife, —equally supposed to have been accomplished by compression, electrolysis, escharotics, Chian turpentine, belladonna, and ciuta,—must chiefly belong to the class of "exceptional" cases in which it is not gainsaid that excision may justly be practised or even a permanent result anticipated.⁸

Nothing distinctly controverts Mr. Paget's declaration in 1870, when he said that, "in deciding for or against the removal of a cancerous breast in any single case, we may dismiss all hope that the operation will be a final remedy for the disease. I will not say such a thing is impossible, but it is so highly improbable that a hope of its occurring in any single case cannot be reasonably entertained" (*loc. cit.*, p.

655). If it is within the observation of other men that cancers are cured, such a statement as the above is a remarkable one to emanate from the cautious and judicial pen of the surgeon of St. Bartholomew's. The existing methods of operating have not changed the nature of cancer. Neither antiseptic nor searching surgery has modified the facts of malignancy. If they had, cures might be multiplied, perhaps,—they would occur more frequently,—but they must have happened previously; and the questions become pertinent, why were they never met with in the large field of observation of the distinguished practical surgeon I have quoted? and why are they not familiar to medical men generally? That the disease is undiscernible is not evidence of cure. It may exist unrecognized within the thorax, beneath the sternum, in the liver, in the mesenteric glands, all of which are common hiding-places of secret metastatic deposits, and the patient die as truly of her cancer as does the fat woman from whom a voluminous breast has been excised, and in whose redundant subcutaneous adipose tissue the disease swiftly returns in the very line of the cicatrix.

Little weight is attached to "authorities" in these days, but it is not without interest to know, as a matter of history, that Hippocrates (Aphorism xxxviii. sec. vi.), Celsus ("De Re Medica," lib. v. cap. xxvii.), and other ancient writers, denied the utility of operations for cancer. In the time of Alexander Mouro many Scotch surgeons were for a long time discouraged by his example from having recourse to excision of the breast ("Edinburgh Medical Essays," 3rd ed., vol. v. p. 346).

The learned and accomplished pathologist, Lebert, says: "I do not hesitate to assert, contrary to the opinion of a majority of surgeons, that" (as between operation and medical palliative treatment without operation) "the latter method of treating cancer of the breast ought to be the rule and by operation the exception." He adds that Dieffenbach, who previously was the surgeon most addicted to excision in Germany, had just written him a letter, saying, "the greater his experience became, the more he was disposed to renounce every operation for cancer of the breast." In another place he still further declares that "surgeons, who for many years have operated on cancerous tumors, struck by their frequent recurrence, have at various periods completely abandoned the operation" (*loc. cit.*, pp. 359, 183). It is probable that he here refers to Boyer ("Traité des Maladies Chirurgicales," t. vii. pp. 240, 241) and to Delpech ("Sur les Maladies Chirurgicales," t. iii. p. 161), both of whom taught that an operation ought never to be undertaken when the disease had been ascertained to be genuine cancer.

Mr. John Macfarlane, of Glasgow, in an admirable paper published a good many years ago, but as learned as if written at the present day, entitled, "Remarks on Carcinoma of the Mamma, and on the Inefficiency of Surgical Operations in that Disease" (*London Medical Gazette*, 1838, N. S., vol. ii. p. 417), says: "Of thirty-two cases operated on by myself, in which the carcinomatous nature of the disease was distinctly ascertained, the cure was not permanent in a single instance." In eighty-

⁸ "To deal with single cases," says Mr. Paget, "is but a sort of surgical gambling. One man will tell of a case where no operation was performed, and the patient lived twenty years; and another will tell of a life prolonged for almost the same time after operation, each statement quite true, but neither of them of any useful application. To reckon from such cases is mere gambling; and, as in gambling of other kinds, the best luck at first brings the most grief at last" (*Medical Times and Gazette*, Sept. 27, 1862, p. 319).

⁹ The ages of these patients varied from 42 to 59 years. In twenty the glands of the axilla were more or less affected, but not

six additional cases, the results of which were obtained from his friends, and in which the mamma was extirpated for well-marked carcinoma, in not one was a cure effected. In a majority the operation was performed at an early period, and under the most favorable circumstances; the affected parts were freely and extensively removed, and in many there was no distinct indication of constitutional deterioration; yet in all the disease returned, both externally and internally, and proved fatal. Thereupon Mr. Macfarlane observes: "I feel myself bound to state as my decided and conscientious opinion, that in no stage or form of the disease is an operation to be depended upon, either as means of permanent cure or as a palliative. Of the late and well-known Dr. Kearney Rodgers, of New York, it is told, 'though he had removed a bushel-basketful of cancerous breasts, he had determined never to perform the operation again' (*New York Medical Record*, 1870, p. 422); and it is mentioned as a "curious delusion" of Dr. Bougard's (to whom reference has been made) that a large number of surgeons have ceased, or well-nigh ceased, to operate for cancer of the breast, on account of the ill success which has attended operations with the knife" (Butlin, *loc. cit.*, p. 387).

The distinct conflict of opinion for and against excision shown by the various citations I have put in evidence, lends strength to the contention that a way to cure cancer of the breast, save in occasional instances, not having yet been discovered, we may well call a halt in the course which has been so long pursued, and attended by a mortality over and above that natural to the disease.

Formerly I endeavored to teach that there were in reality but three conditions in which removal of the breast for cancer should be, or ever has been thought admissible, viz., (1) for extreme pain.—a rare occurrence; (2) for the relief of unendurable odor, in the exceptional instances of this popularly supposed inevitable accompaniment,—a condition now wholly within the control of local treatment; and (3) when the patient, after a fair statement of the nature and sure return of her disease, and the small prospect of a prolonged life, took upon herself to decide for excision. The provisos attached to this enumeration of justifying excuses for operation practically limited its application to cases of the last category, and the questions therein involved few patients would be competent to rule upon for themselves.

The removal of cancerous breasts is excepted to, therefore, because of the danger to life. In every fatal case the operation destroys in a week or two a life which otherwise might have lasted as many years. The prolongation of a life here and there does not compensate for the cutting short of many others. Recurrence after operation being held by many to be as certain as anything in surgery, to submit a patient to the risk of dying within a brief period for the sake of the interval of health which will or may exist between the operation and the return of the disease, is a point of practice which extensively, they were all removed, and in the remaining twelve no disease in the axilla could be detected. In nine cases the disease recurred in the integuments of the chest, or in the axilla, within a period varying from six weeks to three months after the operation; in thirteen cases from three to nine months; in four cases from nine to twelve months; in three cases within two years, and in one nearly three years elapsed before its return was discovered. Two of the operations proved fatal.

certainly admits of question (*Paget, Medical Times and Gazette*, 1862, vol. ii, p. 319). It is true that the danger of a fatal result is one which painstaking, cleanliness, and drainage may steadily diminish, though the candidates for operation do not offer good material to work upon. Usually they are not young, they have borne families, and have known much mental or physical hardship. They are apt to be in the critical and transition period between middle life and advancing age, when organic diseases of internal organs increase very much in their proportion, and consequently are unfitted to endure the risks of a possibly slow and uncertain convalescence, hitherto enhanced by erysipelas, abscess, fever, etc. These complications are fortunately, at present, to a certain degree controllable.¹⁰

But a weightier reason for protestation is, as I look at it, the inadequate character of the undertaking. Even the enthusiasm of so strenuous a champion of operation as Mr. Banks must have had its moments of discouragement, for he permits himself to say, "The popular idea that operating prolongs life is quite wrong. I believe it to be a perfect delusion. I believe that all these patients," [*i. e.*, those whose breasts have been amputated, but whose axillary glands—diseased or not diseased—have been allowed to remain.] "would have lived longer if they had never been touched. Yet you hear the operation being constantly advised on the ground that, if it do not cure the patient, it will give her a little longer lease of life. On the contrary, the excitement that is set up by the operation makes everything that is left behind of a malignant character grow with double and treble speed, and I am inclined to think that the deaths after reappearance are more painful than those where the cancer has never been touched. If a surgeon do not see his way to a clean sweep, I can only implore him to let things alone, for in few diseases does meddlesome interference work more mischief than in this. It is but right that, while pleading early and free operation, one should also admit that if it fail thoroughly to cure, it does not improve the patient, but makes her decidedly worse" (*British Med. Jour.*, Dec. 9, 1882, p. 1140). And this opinion is equally that of other experienced operators.

If patients, therefore, are not cured, but are not even relieved by an excision,—if in performing "excision for cancer of the breast" you cannot also perform "excision of cancer of the breast,"—it is certainly not mere pessimism which leads one to the conclusion that any operation which proves itself so futile in a general sense should be an act reserved for circumstances within narrow limitations.

¹⁰ Edema of the arm, the worst and most distressing incident of cancer of the breast, rarely fails to accelerate the fatal event. It is more likely to occur when an excision has been extended into the arm-pit than when the disease has been left to itself; painfully, as it would seem, from the destruction of the lymphatic glands, combined with the influence of electrical contraction upon the veins returning the blood of a limb, the major part of which is always in a position of dependence, and flexed at the axilla itself. The president of the Harveian Society, Mr. Owen, in the discussion recently quoted from *ante*, p. 319, in advocating axillary excision, claimed that clearing away the glands diminished the risk of subsequent pressure, from secondary malignant enlargement, upon the axillary vein and the nerves of the brachial plexus; observing, as he believed, edema and neuralgia of the arm so often met with when the glands are untouched. This is wholly at variance with what, as it appears to me, must be the natural consequences of such a dissection as is recommended, and contrary to the impressions left by my own observation.

Were the subjects of cancerous breasts candidly told there was no reason to believe or to hope that an operation would eradicate the disease; or, by the most sanguine estimate,—that it could only do so once in six times; if they were reminded that, unoperated on, they would escape the risk of sudden death,—an accessory which, though it may be desirable in itself, is not within the surgeon's province to befriending,—and encouraged to think themselves likely to live a definite length of time.—two to three years, perhaps more; that they would be spared the mental distress inevitable in all surgical episodes, the more or less sure physical pain, and the contingencies so vividly delineated by Mr. Banks; that they would be exempted from the accidents liable to attend the slow granulating of a large wound, and the woeful results of its contraction which are apt to follow; if they were assured that they will not be the subjects of an increasing agony, or become repulsive to those about them, and informed of the solace which anodynes can afford; if they could be made to see all these compensations as surgeons see them, I feel confident that patients themselves would decide almost unanimously against excision.

The balance of opinion being that life—with the exception of a variably estimated percentage of "cures"—is as long and as free from suffering without as with operation, hesitation, if any, discloses itself only in regard to those who are thus alleged to be "cured."

Far from disputing the correctness of other surgeons' statements, I can only say that such results have not fallen within my experience. I have never known but one instance of seemingly prolonged life after removal of cancer of the breast. Many times I have had occasion to congratulate myself on having successfully dissuaded women from being operated on, and I am not aware of an instance in which the patient or her friends regretted the course pursued.¹¹ The considerable number of persons in civilized communities with cancer of the breast who have lived lives of average duration and of comparative comfort, without ever having been surgically advised, or who have died of disease wholly disconnected with the mammary affection, is a significant matter of fact.

The sanguine forecast with which certain surgeons regard the success of completed operations for cancer of the breast is undoubtedly due in a great measure to the fact that patients, with their restlessness for cure,—cure which there are never wanting dishonest empirics to promise,—desirous that their desperate condition should be actively if not heroically dealt with, and unwilling to turn their backs upon the familiar narratives of operative treatment,—stimulate their physicians to attempt that which is beyond their power. There is a great deal of unmeddled sentiment in regard to the responsibility of "leaving women to their fate" when they are the subjects of scirrhus breasts, by refusing them the chances of an operation. The "doom" of such patients is not alleviated by an

excision. Something innate in their sex stirs the courage of the weakest, and calms and controls the instincts of those whose fate is predetermined by a mortal disease. They who say that the "burden of inspiring hope rests mainly on the consultant,"—*i. e.*, on the operating surgeon,—"who may not be able to tell other than the old story, but who, perchance, may point it with a new moral,"—*i. e.*, find a new excuse for, or a new way of, operating—are not, as I venture to think, necessarily driven to this way of thinking by the demands of humanity or of an unquestionable judgment. For moral effect, an incomplete operation is at least as much service as a so-called completed one.

It may seem as if I had formed a too unfavorable and gloomy opinion of the surgical treatment of this formidable disease. If I have done so it has not been hurriedly or inconsiderately. There is less fear now than formerly of severe operations. A close approach to vital parts, immense wounds, the extensive sacrifice of integument, the ligature of large veins, etc., are contemplated nowadays with indifference, so far as mere operative surgery is concerned; but, from my point of view,—which is not that of one, as Macaulay says, who "would rather die on precedent than live on innovation,"—I cannot expunge the belief that patients with cancer of the breast are, as a rule, better off without than with operation, or that their cure, if cured they are to be, lies in some as yet undiscovered remedial measure of coming surgery, rather than in extending a mutilation which, whether limited or comprehensive, must always remain "*inmedicabile vulnus*."

THE DIAGNOSIS AND MEDICAL TREATMENT OF ACUTE INTESTINAL OBSTRUCTION.¹

BY REGINALD H. FITZ, M. D.,

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As the result of the foregoing analysis the symptoms, apart from stoppage of the bowels, upon the presence of which the physician must rely to establish a diagnosis of acute, internal obstruction, are abdominal pain, nausea or vomiting, abdominal tympany, and abdominal tumor. The presence of fever, the occurrence of hiccough or jaundice, abnormal conditions of the urine, are all occasional and subordinate.

The cardinal symptoms are, then, pain, vomiting, tympany, and tumor. The vomit may become fecal, and the tumor may be simulated by visible intestinal coils. The relative frequency, in percentages, of the occurrence of these symptoms in the main varieties of acute intestinal obstruction, as occurring since 1880, is here shown:—

	Strangulation.	Intussusception.	Twist.	Gall-Stones.	Stricture or Tumor.
Pain	82	70	60	83	60
Nausea or vomiting)	69	75	37	74	80
Fecal vomiting.	47	13	15	61	33
Tympany	56	33	55	56	66
Tumor	10	69		15	27
Visible coils	11		7		20

¹¹ In a recent compilation of cases of cancer operated upon, the writer alludes to the criticisms, common among the laity, that harm has been done by operation instead of good, and that life has been shortened rather than prolonged. He remarks, "although often undeserved and unjust, many such have come to me among the responses to my letters."

¹ Concluded from page 495.

But the presence of these cardinal symptoms is evidence of other disease than acute, internal, mechanical obstruction of the bowels. They may result from external causes of obstruction, and the various herniæ are to be excluded. They may be the symptoms of a peritonitis in the absence of mechanical, intestinal obstruction. The various causes of peritonitis are therefore to be excluded. These include those arising from the gastro-intestinal, genital, and urinary tracts, the biliary passages, suppurating or necrotic lymph-glands, embolism of the abdominal arteries, and from the continuance of inflammatory processes through the thoracic and abdominal walls.

The diagnosis of acute, internal obstruction is then made, in the first instance, by exclusion.

The second question relates to the part of the bowel which is the seat of the obstruction. It appears from the above analysis that the chief varieties of obstruction were situated as follows:—

	Large intestine.	Small intestine.
Strangulation	8	66
Intussusception	57	8
Twist	34	5
Gall-stone	4	3
Stricture and tumor	14	1

117=57 per cent.

89=43 per cent.

It is obvious that obstructing gall-stones in the large intestine are not of much consequence from their seat in that part of the bowel, as they have usually produced their important symptoms before reaching the colon.

The obstruction, therefore, is likely to be either in the small or in the large bowel in not far from equal proportion. In order to determine which is affected, the patency and capacity of the large intestine must be ascertained as thoroughly as possible.

Rectal examination by the finger alone may make the diagnosis clear, as in certain cases of intussusception, stricture, and obstruction from abnormal contents. The limits of this method are easily reached, however. Exploration by the introduction of the entire hand into the rectum may then suggest itself as a means of determining the seat of the obstruction. The cases are but a few where such a method has been used in intestinal obstruction with success. They are so few and the evidence thus to be obtained is so indefinite, that this method of exploration may be placed among the possibilities in any given case, but as of doubtful expediency.

There remains the introduction of the rectal sound or tube. These have the advantage in length over the finger or hand; they have the disadvantage of giving rise to errors of judgment. The information to be furnished by the rectal sound is limited to the determination of the length and calibre of the rectum and sigmoid flexure, at the most as far as the junction of the two legs of the bowel which form the loop. This may lie at the navel, as in a case recently examined by me after death. It has been my experience to fail to pass either the rigid or the flexible tube beyond the sigmoid flexure in numerous attempts both on the living and dead. After repeatedly introducing the flexible tube its entire length, it has been found compactly coiled within the rectum on passing the finger through the anus. In these respects my

experience corresponds with that of Treves¹⁰ and others.

The use of the rigid tube is not without danger. I have known it, in the hand of a skillful and experienced surgeon, to perforate the intestinal wall above a stricture of the rectum.

The capacity of the large intestine, beyond the reach of the finger, or a short tube, is best determined by an attempt to distend the bowel with air, gas, or water, under a certain degree of pressure. Air may be introduced by connecting the end of an inserted rectal tube with the nozzle of a syringe or a pair of bellows.

Air or gas may be allowed to escape from a siphon of aerated or carbonated water. Ziemsse¹¹ recommends that the intestine be charged, alternately and in small quantities, with solutions of bicarbonate of soda and tartaric acid,—twenty grammes (five drachms) of the former and eighteen grammes (four and a half drachms) of the latter.

The simplest and best agent, however, is warm water. It is easily procured, and the quantity used can be simply and accurately measured.

Some arrangement is necessary by means of which the injected fluid shall be prevented from escaping from the anus. Forcible compression of the buttocks against the rectal tube suffices for moderate degrees of pressure. But the column of fluid may be under considerable, even extreme, pressure, especially when this diagnostic procedure becomes a remedial measure, as in cases of intussusception.

Lund¹² figures and describes an apparatus for this purpose, consisting essentially of an annular air-cushion through which passes a tightly fitting, rectal tube. The latter is connected with the injecting syringe. A similar apparatus was improvised by Forest,¹³ who wound a roller bandage tightly around a glass, vaginal syringe from which the piston was removed. The mouth of the syringe was closed with a perforated cork. A glass tube was pushed through this and was connected with the injecting syringe. This latter is most conveniently a fountain-syringe or a funnel and rubber tube. These may be elevated gradually to any desired height above the patient's level, and will permit an accurate measure of the pressure used and the quantity injected.

The force necessary to distend the large intestine sufficiently to determine its calibre may be slight. But the physician should be prepared to increase it sufficiently, within safe limits, to make it clear that the large intestine is or is not obstructed. These limits are determined by the time which has elapsed since the obstruction became apparent, the age of the patient, and the quantity of fluid injected.

Thomas¹⁴ records a case where, on the third day, an enema, under light pressure, was followed by death in an hour and a half. The case proved to be one of intussusception; a rent was found in the sheath and a half tumblerful of water in the pelvis. The earlier, therefore, this method of exploration is employed the better, especially in the case of suspected intussusception.

¹⁰ Treves, *op. cit.*, 398.

¹¹ Ziemsse, *Arch. f. Klin. Med.*, 1883, xxxiii, 236.

¹² Lund, *Lancet*, 1883, i, 588.

¹³ Forest, *Am. J. Obst.*, 1889, xix, 673.

¹⁴ Thomas, *Lancet*, 1886, ii, 1219.

The age of the patient is important, since obstruction in children is most likely to be from intussusception. Lower degrees of pressure will produce rupture in them than in the adult, and the capacity of the large intestine is less.

The quantity of fluid admitted is as important as the force necessary for its injection. For diagnostic purposes all that is necessary is that a certain quantity of fluid should or should not be admitted into the bowel. The quantity which the large intestine of the adult will hold with safety may be stated at six quarts. In a case of catarrhal enteritis recently under my charge, nearly five quarts were gradually injected, without discomfort, by means of a bulb-syringe and rectal tube. Six quarts of fluid returned through the tube after removal of the syringe. Larrabee¹⁵ states that six quarts were injected into the intestine, and retained, in a case of obstruction of the ileum. The quantity which the large intestine of the infant may safely receive has been less exactly determined than the degree of pressure which can be applied without causing rupture.

The limits of safety as defined by the above conditions will permit the elevation of the fountain-syringe to a height considerably less than that found necessary, by experiments, to rupture the bowel. Recent investigations on this point have been made by Rotch,¹⁶ who found that more than seventeen feet of pressure were necessary to tear the bowel of an infant, removed from the body. Forest¹⁷ found that the colon of an infant would bear, without rupture, from twenty to twenty-two feet of pressure. He also found that the colon of an adult would bear, with a like result, from thirty to thirty-seven feet. Young¹⁸ inserted a rectal tube into the bowel of a patient suffering from obstruction and connected it, on several occasions, with the waste-pipe of a tank which was elevated thirty feet. The patient eventually recovered from the immediate symptoms. Within safe limits will, therefore, be below ten feet in the infant, and twenty feet in the adult.

It should be remembered that, for diagnostic purposes, the indication is to distend the large intestine if possible, and without increasing the patient's danger. Anaesthesia should be employed; the patient should be inverted or placed on the right side, that the fluid may more readily pass up the bowel.

The objections which have been raised to the value of injections in determining the seat of the obstruction are based upon the condition of the patient and the negative value of the experiments made. It is asserted that the patient's voluntary muscles may resist the admission of the fluid; that a part of his intestine may be contracted and the rest tympanitic, with a resulting increase of the intra-abdominal pressure. The rectum may be filled with feces, thus obstructing the entrance of fluid, or so distensible as to take in so large a quantity as to give rise to error of judgment. Again, a strictured bowel may be passable from below, but closed from above by a projecting fold of tissue. Finally, the experiments concerning the capacity of the large

intestine are regarded as useless, since they are made on relaxed tissues.

These objections have a value within certain limits. If the injection is made late in the course of the disease, under slight degrees of pressure, and without anaesthesia, it may prove of no diagnostic value. If the question to be decided by injection depended upon the difference of a few ounces in the quantity of fluid admitted, the experiments on the corpse would be useless. But the diagnostic value of the injection is dependent upon a sufficient degree of pressure to overcome muscular resistance within the limits of safety, under anaesthesia. If the tympany is extreme enough to produce a doubtful result, the stomach and upper bowel may be emptied of their contents by siphonage. The quantity of fluid to be forced into the large intestine of the adult is one of several quarts or of a few pints. Since Treves¹⁹ cites the case where the rectum held three pints, it is evident that, when only this quantity of fluid can be forced in, the obstruction may be at the sigmoid flexure, and that a larger quantity must be injected to ensure that the intestine above this point is passable. With these precautions and with these limitations the exploration of the large intestine by means of forced injections seems likely to prove in the future, as has been claimed in the past, a valuable, diagnostic measure.

It may, possibly, become unnecessary for the determination of the patency of the large intestine to use the higher degrees of pressure and the larger quantities of fluid. Treves²⁰ claims that by auscultation of the caecal region it is possible to obtain pretty conclusive evidence of the arrival of injected fluid at that point. The colon must be entirely clear and the enemata quickly introduced, in an intermittent manner, without any admixture of air. The variety of abdominal sounds to be heard in cases of intestinal obstruction is so considerable that especial training in abdominal auscultation, and particularly in this affection, is regarded as necessary that this method of examination may prove of value.

Although, in general, faecal vomiting is more likely to occur in obstruction of the small intestine than in that of the large, this relation is of no importance in determining the part of the bowel affected. It occurred in forty-seven cases of strangulation, fourteen of gall-stones, twelve of intussusception, and five of malignant disease or stricture. It was present in four cases of stricture or tumor when the obstruction was at or below the caecum. It was noted in four cases of intussusception in the same region, below the caecum, in two of twist of the large intestine, and in one of strangulation of this part of the bowel. Thus, in more than one-eighth of the cases of faecal vomit, the obstruction was of the large intestine.

The physician having determined, with more or less success, the patency and capacity of the large intestine, the question which next demands consideration relates to the special variety of obstruction which may be present.

This question is best answered by an appreciation of the relative frequency of the several varieties,

¹⁵ Larabee. Louisville Med. News, 1881, xi. 3.

¹⁶ Rotch. Boston Med. & S. J., 1882, cvi. 322.

¹⁷ Forest, *loc. cit.*, 631.

¹⁸ Young. British Med. Journal, 1884, ii. 796.

¹⁹ Treves, *op. cit.*, 397.

²⁰ Treves, *op. cit.*, 398.

the knowledge of the age of the patient, the antecedent and immediate symptoms.

The published experience of the past eight years shows that for all practical purposes the following is the relative proportion of the varieties of intestinal obstruction likely to be concerned in any individual case:—

Strangulation	161 cases=37 per cent.
Intussusception	93 " =24 "
Twist	40 " =15 "
Gall-stones	23 " =8 "
Stricture or tumor	15 " =6 "
	272 100

These varieties of obstruction were seated as follows:—

	Large intestine.	Small intestine
Strangulation	7 per cent.	72 per cent.
Intussusception	31 "	8 "
Twist	30 "	5 "
Gall-stones	0 "	14 "
Stricture and tumor	12 "	1 "
	100	100

Since obstruction of the large intestine was intussusception or twist in four-fifths of the cases, the differential diagnosis of these varieties is of especial importance. Etiology afforded no aid. The relative frequency among the sexes was the same.

If the patient is under thirty years of age the case is one rather of intussusception than of twist. Rectal tenesmus, bloody stools, and an abdominal or rectal tumor are significant of intussusception; they are not to be expected in twist. The greater the capacity of the large intestine the more likely is the presence of intussusception than twist, for the latter was found near the sigmoid flexure in 50% of the cases, while the former was found near the cæcum in 75%.

Finally, if the obstruction is not relieved by distention of the bowel and massage, with anaesthesia, there is probably an irreducible intussusception or a twist, each of which demands surgical treatment.

If the person is over thirty years of age, and there is neither tenesmus, bloody stools, nor a tumor characteristic of intussusception, the case is probably one of twist, tumor or stricture, or of strangulation. Twist was more than four times as common as strangulation, and more than twice as frequent as tumor or stricture. The latter was nearly twice as common as strangulation. The last is likely to be above the sigmoid flexure, while twist, cancer, and stricture are more likely to be at or below this point. Cancer and stricture are not infrequently within reach of the finger, hand, or sound.

They often have the antecedents of chronic pain, irregular and bloody discharges, and rectal uneasiness.

If the obstruction was seated in the small intestine, it was due to strangulation or gall-stone in more than four-fifths of the cases. The diagnosis of gall-stone was to be determined by its occurrence after the age of fifty years in six-sevenths of the cases, by previous symptoms attributed to this cause in one-half of the cases, by the usual late occurrence of the tympany on or after the fourth day, and by the occasional presence of a small, hard tumor.

Intussusception is to be differentiated from strangulation by its greater frequency in early youth, and the fact that a tumor is more often found. A twist

of the small intestine is only to be differentiated by its extreme rarity.

What may be the immediate cause of the strangulation has but little practical value. At the best there is little else than numerical frequency to influence the opinion. It is desirable to remember that nine-tenths of the cases were due to adhesion, vitelline remains, or vermiform appendix, in the proportion of 63%, 21%, and 6%. It is still more important to remember that, in the presence of urgent symptoms of acute obstruction, the source was to have been found in the lower abdomen in more than four-fifths of the cases.

The question, what is to be done by the physician? has already been partly answered. He is to remember that in the light of exact knowledge nearly all cases of acute, mechanical, intestinal obstruction die, unless relieved by surgical interference. That curative, medical treatment has proven of sure avail only in a limited number of cases of intussusception, possibly in a few of twist in the large intestine, and in certain cases of gall-stones in the small intestine. That his first duty, after relieving pain, is to determine the capacity of the large intestine. That this is best accomplished during the first two days following the initial pain, before tympany makes the task more difficult, and pathological changes cause it to be more dangerous. Finally, that the means employed for this purpose represent the most efficient curative agent in his control.

In case a diagnosis of intussusception is established, the possible benefits of medical treatment at an early stage result from the reduction of the displaced bowel. In fourteen cases where the condition of the bowel during the first five days was noted, it was found that in five, more than one-third, the bowel was irreducible on the third day. This fact should not necessarily deter the physician from an attempt at reduction at a later date. Wilson²¹ withdrew an intussusception after seventeen days of obstructive symptoms, and the patient recovered. On the other hand, although this possibility may be admitted, sloughs of the intestine may be evacuated on the ninth day.

Notwithstanding 31% of the cases recovered without any operative treatment, it does not follow that such a recovery is to be anticipated with favor, especially if it is to be associated with the evacuation of a slough. In this class of cases eventual death from annular stenosis of the intestine is to be feared, if earlier death from peritonitis does not occur, or strangulation may take place under adhesive bands between the diseased bowel and neighboring coils. It is even possible that so much of the bowel may be detached as a slough that an insufficient quantity remains to serve for the necessary absorption of nutriment. Lancens,²² for example, reports a slough of three feet of the ileum.

The medical treatment of intussusception consists essentially in the use of mechanical measures for the reduction of the displaced portion of bowel. The beneficial effect of such measures is all the more possible since it is evident that spontaneous

²¹ Wilson, *Transylvania J. M.*, 1835, viii, 486.

²² Lancens (Rev. Med. Quir. Buenos Ayres). *Canada Lancet*, 1880-81, xiii, 260.

reduction may occur. Senn²³ observed this fact in his experiments, and Langmaid²⁴ records a striking illustration. His patient was an infant of five months, who, on the first day, suffered from restlessness, vomiting, and bloody dejections. On the third day a tumor, with a central indentation like the neck of the uterus, was to be felt per rectum. A cylindrical tumor was also to be recognized in the region of the descending colon. After a few hours the invaginated bowel descended to the anus. In the interval between two visits the tumor disappeared. The patient had two natural dejections on the sixth day, and recovered without further disturbance.

The mechanical treatment consists of rectal injection or inflation, preferably the former, and replacement by a repositer. Almost indispensable advantage is to be derived from the associated use of anæsthesia. Massage of the tumor and inversion of the body are important adjuncts.

The use of electricity is to be condemned as irrational where intestinal contractions induce and promote the disturbance. Large doses of quicksilver have been employed within the past few years as well as in more remote times. Gronau²⁵ reports a case, in which, on the seventh day, one hundred and twenty grammes were given in two doses. The immediate effect was to check vomiting, although the pains persisted. A week later two copious dejections were noted, and on the following day eleven inches of ileum were discharged. The quicksilver did not appear till forty-four days after its administration.

The reduction of the displaced bowel by means of a probang or bougie, well padded at the end, seems useless, from reasons already stated, in any case of intussusception where the seat is above the sigmoid flexure. Even below this point inflation or injection have proven equally serviceable, and are to be preferred as freer from risk. The earlier they are employed the better, and their use is to be avoided when there is reason to suppose that gangrene is present at the neck of the tumor, or that the latter is irreducible. It has already been stated that the tumor may be irreducible on the third day, and that a slough may be passed on the ninth day. It remains to be shown what were the limits of the successful employment of injections and inflations since 1880.

Recoveries from intussusception after inflation or injection:—

DATE.	Diagnosis certain.				Diagnosis probable.			
	Water.	Gas.	Air.	Total	Water.	Gas.	Air.	Total
1st day		1	3	4	2		4	6
2nd "			1	1	2	1	3	6
3rd "			1	1	2		1	3
4th "				1				1
Not given....	4		1	5	3		3	6
	4	1	6	11	10	1	11	22

Deaths from intussusception after inflation or injection:—

DATE.	Diagnosis certain.				Diagnosis probable.			
	Water.	Gas.	Air.	Total	Water.	Gas.	Air.	Total
1st day			1	1	1			1
2nd "	1		2	3				
3rd "	3		1	4				
4th "		1		1				
5th "	1			1				
	5	1	4	10	1			1

It thus appears that there were thirty-three cases of recovery after injection or inflation for certain or probable intussusception. In seventeen cases air was inflated, in fourteen water was injected, and in two gas introduced from a siphon-reservoir. It is further evident that the remedy was used on the first day in ten cases, on the second day in seven, on the third in four, on the fourth in one, and on a date not given in eleven cases. The inference from these figures is that the successful use of inflation or injection may take place on the fourth day, but is most likely to occur during the first two days.

The unsuccessful use of the above treatment resulted in eleven cases: in two on the first day, three on the second, four on the third, and in one on the fourth and fifth days respectively. Certain of these failures are due to an insufficient pressure, for after death, in these, the intussusception was easily reduced. In other cases the tumors returned, or the symptoms were not relieved. In such the tumors may not have been wholly reduced at the time of treatment. The inference is direct from the consideration of these tables showing the effect of medical treatment, that if the latter does not overcome the obstruction within the first two, possibly three, days, aid should be sought from the surgeon.

Relief, by injection or inflation, from obstruction due to a twist is of very unlikely occurrence. There is no exact evidence on this point. As in intussusception so in twist: if no relief follows inflation or injection on the second or third day, the aid of the surgeon should be sought.

The surgeon's knife offers the only hope of cure from strangulation.

In the medical treatment of obstruction from gall-stones, it is to be remembered that in the cases here collected a fatal result followed all surgical treatment after the first week, and that five cases recovered under medical treatment after this date. The condition of the patient alone must determine the nature and duration of the treatment. Opiates, cathartics, and electricity have all been used in cases ending with recovery.

In the light of the published experience of the past eight years, the medical treatment of acute obstruction is limited to the use of injections during the first three days, under sufficient degrees of pressure, within fixed limits, to determine the patency of the large intestine. If it proves impassable the case is no longer medical, but surgical.

²³ Senn, *op. cit.*

²⁴ Langmaid, Boston Med. and Surg. Jour. 31, 1882, cviii. 33.

²⁵ Gronau, Berl. Kl., March, 1882, xiv. 7.

If the large intestine is readily distended, and a diagnosis of gall-stones is admissible, and the condition of the patient is not urgent, opium is to be given: laxatives and electricity may be tried, but they are of doubtful expediency. If medical treatment is of no avail, and surgical treatment is refused, the efforts of the physician are restricted to the relief of pain and distress by narcotics, intestinal punctures, and gastric siphonage.

In conclusion, acute, intestinal obstruction is diagnosticated by exclusion. Its seat is fixed by injection. Its variety is determined by its seat, the age, antecedents, and symptoms of the patient. Its treatment is surgical, on or after the third day, if the symptoms are urgent and forced injections fail to relieve.

Clinical Memorandum.

CASES ILLUSTRATING THE USE OF COMPRESSION, AFTER THE METHOD OF MR. GAMAGE.

REPORTED BY W. A. MORRISON.

The following cases were treated at the Surgical Out-Patient Department, Boston City Hospital, during the service of Dr. H. L. Burrell.

TREATMENT: COMPRESSION BY MEANS OF OAKUM PADS AND PASTEBOARD SPLINTS.

John K., twenty-two years, brewer. March 5th came with following history. On Thursday, March 1st, while working in brewery, left hand began to swell, and Friday it was much worse. The last three nights pain so acute could not sleep; hand so heavy that it had to be supported by right.

On examination found left hand about three times larger than right, intensely red, very hot and painful, swelling and redness extending several inches up the arm; pain very acute, extending from hand to axillary glands; the latter much swollen and especially sensitive, the slightest movement causing agony, gentle pressure almost unbearable.

Treatment: oakum compression from fingers to axilla with pasteboard splints to immobilize; flexed arm across chest, then applied Velpau bandage. "Arm very comfortable."

March 9. Circumscribed space over head of fourth metacarpal bone soft and boggy; on slight pressure about two ounces of pus and blood escaped through very small opening; no pain; reapplied pads and bandages, with pasteboard splints.

Continued treatment till March 16th, when patient was cured.

Martin O., twenty years, painter. February 15th applied for treatment. Noticed pain in thumb ten days ago, poulticed with linseed meal, resulting in temporary relief, followed by intense pain in a few days. On examination found an abrasion near head of first metacarpal, thumb very red, swollen, and painful, pain extending from end of thumb to axilla; hand oedematous; axillary glands very much enlarged. Applied oakum pads, with compression, from tips of fingers to axilla, and pasteboard splints to immobilize.

February 16th. "Last night was the first comfortable night in ten." On examination found small

suppurating point over head of first metacarpal, which, on being opened, discharged small amount of pus. Dressed thumb antiseptically and reapplied pads with compression.

February 18th. Arm slightly painful. On examination found bandage loose, and swelling greatly reduced; skin pale, wrinkled. Applied dressing to thumb; reapplied pads with bandage, continuing treatment until February 24th, when cured.

John S., age forty-seven. March 15th. Patient gave following history. Twelve days ago slipped and threw out hand to save himself, resulting in an injury to the hand. Four days ago the arm began to swell and the next day it was enormously swollen; cannot sleep at night on account of excruciating pain extending to elbow. On examination found hand enormously swollen, very hot, and exceedingly painful.

Treatment: oakum pads with compression from ends of fingers to axilla.

March 16th. Arm very comfortable. On removal of pads found swelling very much diminished. Reapplied pads with bandage and splints.

Continued same treatment till March 29th; when last seen, recovery almost complete.

David C., twenty years. March 10th. Applied for treatment with following history. Two months ago felt sharp pain and soreness in ankle on walking, and has been troubled since then. On examination found tender spot near inner malleolus of left ankle; slightly swollen, very sensitive, painful to the touch to such a degree, that patient fainted on application of pressure over sensitive area.

Treatment: pasteboard splints about ankle with compression.

March 15th. Ankle very comfortable since application of splints; no inconvenience in walking. Removed splints and patient walked home; no recurrence of pain.

James H., age 18. March 2nd. Six weeks ago fell on ice and struck olecranon process; has since then been very sensitive. One week ago arm was very painful, red and swollen.

On examination found contused wound over olecranon. Whole arm red, swollen and hot, besides being very painful to touch; axillary glands much swollen and painful; unable to sleep at night.

Treatment: pads and bandage from tip of fingers to axilla, with pasteboard splints on the outside to immobilize. Used compression six days, when dismissed as cured.

John McD., age twenty-four years, teamster. February 16th. Two weeks ago noticed foot was very tender, swollen, and painful while at work; continued to increase till present time, when it was almost unbearable; patient could not sleep at night; "foot jumped all the time." For last three days had poulticed it with linseed meal, with no relief.

On examination, foot and leg were intensely red, swollen and painful; near head of fifth metatarsal bone it looked as if about to suppurate.

Treatment: pads with compression from the base of the phalanges to Poupard's ligament.

Patient much relieved and walked home.

February 17th. Patient slept all last night; "foot very comfortable." On removal of bandage swelling had decreased and a quantity of pus was

evacuated from circumscribed area of fifth metatarsal.

Reapplied bandage and pads till February 27th, when patient resumed work.

Hannah S., aged forty-nine. March 17th. Six weeks ago, a slight abrasion was noticed on dorsum of hand at head of second metacarpal; hand much swollen, red and painful. For four weeks it was treated with linsed poultice.

On examination found palmar surface somewhat swollen; fingers were semiflexed, and patient complained of intense pain most of the time.

Treatment: large pad on palmar surface of hand and with pressure was obtained considerable extension on fingers; then a large pad on dorsal surface with compression almost up to elbow, and sling. Patient obtained immediate relief on application of pressure.

Treatment continued till March 24th. When last seen, patient much relieved, with fingers almost wholly extended.

John M., age fifty. March 8th. Varicose veins for six years. Last Christmas noticed redness without pain in right leg. For the last month leg has been sensitive, very red and painful. Lymphatics very tender, hard and swollen on inner side of leg from just above inner malleolus to just below head of tibia.

Treatment: oakum pads with compression from toes to popliteal space.

March 19th: patient cured.

Edward P., twenty years. March 17th. Sprained ankle about ten days ago, has been confined to house since then, with much pain, very restless at night, limb much swollen and very painful.

Treatment: splints with bandage.

Patient walked home, greatly relieved.

Continued compression till March 24th, resulting in perfect recovery.

Miss Georgie P., thirteen years. March 21st. One week ago noticed hand and wrist felt hot and uncomfortable, followed by pain and swelling reaching nearly to elbow, the slightest movement causing intense pain.

Treatment: compression with bandage and pads from tips of fingers to elbow.

Continued till March 24th, when patient dismissed as cured.

John M., coal-heaver, age thirty-eight years. Saturday, February 18th. One week ago fell while carrying coal, and struck on olecranon; very painful, with considerable swelling and redness; "didn't sleep last two nights."

On examination found arm much swollen and sensitive to touch; small wound over olecranon, from which pus was exuding.

Treatment: pads with compression, causing patient to obtain immediate relief; this was continued till February 21st, when patient resumed work.

John H., age forty-nine, coal-heaver. March 3rd. Three weeks ago sprained ankle; called local physician, but grew steadily worse, having continuous pain.

On examination found marked redness, with swelling about both malleoli, a large callous on fibula just above external malleolus.

Treatment: splints of pasteboard with compress.

Continuous treatment till March 12th, when patient dismissed as cured.

Michael C., age twenty years, machinist. February 24th. Patient gave following history. On February 20th noticed swelling on hand near head of first metacarpal bone; it was very red, and about the size of a silver quarter; this swelling steadily increased in size until it covered hand and wrist; since yesterday intense pain in hand, extending to axilla; glands somewhat enlarged; could not sleep with pain.

Treatment: pads with compression, and pasteboard splint to immobilize.

February 25th. Swelling and redness receding; very little pain. Pads applied as high as elbow with pasteboard splint to palmar surface; hand placed in sling high up across chest.

February 27th. Redness size of a quarter with circumscribed cavity of pus near head of first metacarpal. Reapplied pads with bandage from tips of fingers to wrist, and continued treatment till March 3rd, when cured.

James F., age thirty-eight, tailor, habitual drinker. February 16th. One week ago fell on ice, striking elbow. On examination, found small wound near olecranon; whole arm very much swollen, red and painful, axillary glands greatly enlarged and sensitive.

Treatment: oakum pads with compression, and pasteboard splints to immobilize, causing patient to experience immediate relief.

February 20th. Yesterday (Sunday) bandage became loosened and patient complained of pain. Reapplied compression, causing relief.

Continued same treatment till March 5th, when patient "perfectly well."

March 12th. Patient fell while intoxicated, striking on elbow, which reopened wound; patient subsequently recommended for admission to hospital.

REMARKS BY DR. BURRELL.

The oakum pads as applied are of various sizes in length and breadth, and are usually over an inch in thickness; they are covered with cole-raine cloth.

They are applied so that they exert an equable pressure over the whole limb from the extremity upwards; particular attention is paid to exerting an extra amount of compression over the arterial tracks and the course of the lymphatics; this point was particularly insisted upon by the late Mr. Gamgee.

The pasteboard is cut up into various sizes, usually six by two. These are moistened in hot water and are superimposed about the affected joint so as to gain equal pressure.

The results in these cases show the benefit to be derived from rest and skilfully applied pressure in sprains, lymphangitis, and diffuse cellulitis.

The pads are always used where there is a possibility of averting suppuration, and poultices have been practically discarded in these cases. The localization of suppurating areas by this treatment has been very surprising.

—A certificate of incorporation has been issued for a Post-Graduate Medical School and Hospital at Chicago.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. R. HARRINGTON, M. D., SECRETARY.

NOVEMBER 12, DR. O. F. WADSWORTH, President, in the chair. Dr. R. M. HODGES read a paper entitled

EXCISION OF THE BREAST FOR CANCER.

DR. MORRILL WYMAN said he had not seen a sufficient number of cases to throw light on the subject. Dr. Mason Warren once remarked to him after the removal of a breast for cancer that he wished he never should hear anything more from it as long as he lived. Sir James Paget not a great while ago said he believed if ever a cure for cancer of the breast was found it would be found in constitutional treatment, for local treatment had been pursued for five hundred years without success.

DR. GAY: One hesitates to differ from so eminent an authority as is Dr. Hodges upon any point which he chooses to discuss. I certainly am reluctant to do so from the fact that his experience, and his facilities for observation are very much larger than mine have been. After twenty years' practice, however, one comes to base his opinions quite largely upon his own individual experience, if he has had any of consequence. For this reason, if for no other, I cannot think that the non-operative treatment of cancer of the breast is the best one to advise or to adopt. The first question to be considered is the curability of cancer. The three-year limit for a recurrence is an arbitrary one, although in a majority of cases it is ample. Perhaps on the whole it is as good as any stated period. That there is a time in the growth or development of malignant disease of the breast when a correct diagnosis is possible, and when removal is not followed by a recurrence, is by no means proven to the satisfaction of any considerable number of practical surgeons. Leaving all theoretical points out of the question for the present, how many cases of undoubted cancer of the breast are removed so early that a return is thereby prevented? While I am not unacquainted with the statistics of Gross, Banks, Butlin, and others, I should not think of telling a patient, however early she applied for operation, and however thorough that operation might be, that the disease would probably never return. On the contrary I should expect the early cases to be followed by a recurrence just as early as the more advanced ones. In other words, a cancer of the breast means destruction, whatever or whenever any method of treatment known at present may be resorted to.

As humanity is now constituted, not one woman in a dozen would follow the advice suggested by Dr. Hodges in his most interesting paper. There are very few persons of either sex who are philosophers when death is staring them in the face. Life is so desirable to the majority of mankind that they will not sit with folded hands at the dictum of any one and watch the steady increase of a fatal disease without making some effort to stay its progress. If skilful and honorable surgeons have nothing to offer these unfortunate people, they can

hardly be blamed for resorting to the charlatan for aid in their last days.

One of the greatest advantages of an operation upon these patients is the mental effect. It gives new hope and courage, and for the time being removes the object of so much terror and dread. I cannot but feel after more than twenty years' experience, that the last days of these patients are rendered freer from pain, sloughing, foul discharges, and hemorrhages by operative treatment. I doubt if life is very much prolonged by excision, although this point is a very difficult one to determine. Speculation as to the probable result of any case under different treatment is not a satisfactory way of spending one's time.

In conclusion, allow me to say that as a rule I believe it is good practice to remove all tumors of the breast in women over thirty-five years of age, unless the diagnosis of their non-malignant character is established beyond a reasonable doubt. An ordinary practitioner's powers of diagnosis are not acute enough to enable him to say, in many instances, that a small, painless, breast tumor is not, and will not become, a malignant growth. I presume I am not the only one present who has had such an experience. Tumors of the breast, however small and painless, are apt to be the cause of great mental anguish, and for that reason alone, to say nothing of their future development, an operation is justifiable, unless the woman has unusual fortitude and a calm temperament.

DR. JOHN HOMANS: When a person with cancer of the breast presents herself in my office the question in my mind is will this woman's end and remaining life be more comfortable if meddled with than if let alone? My feeling is that she will be more comfortable, as a general rule, if let alone. If you tell the woman you think it is best not to remove the breast, you hardly like to say to her that her end may be more comfortable if she is let alone than if this thing is removed, because that is telling her that the thing is fatal in any event.

Again, the person may come from a distance to consult you, and if you say, "This thing had better not be meddled with," she says, "Can nothing be done? I can't be cured, then?" I think the sympathy of most of us would lead us to operate with the feeling that during the woman's remaining life she would feel that she had had everything done for her that could be done to prolong her life. I don't suppose that it is a scientific reason for operating that if we don't operate the quacks will get the cases. It hardly seems to me that that is an argument of science, although perhaps it is of humanity.

Speaking entirely from memory, I should say that patients lived longer without operation than with.

The cases where I believe operation is imperative are those where there is a fungous growth protruding from the breast, generally a small one, which spurts arterial blood at intervals, causes great weakness and an offensive odor. In that class of cases I think we ought to operate.

Again, in my experience the disease has not recurred in the axilla, which has always seemed to me a reason against cleaning out the axilla where it doesn't seem to be affected. When the disease

does recur it is fully as apt to occur, it seems to me, in the cervical glands and subclavian glands as in the axillary. I remember a case on which I operated eighteen months ago in which the cancer returned as abdominal cancer but not at all in the scar. My feeling at present is that, as a general rule, it would be as well not to practise excision of the breast for cancer as to practise it, but in certain cases I should make exceptions to this rule.

DR. J. C. WARREN: I think that many surgeons are apt to shut their eyes to the very grave nature of the disease, and perhaps there is a tendency to become more enthusiastic than the facts justify with the advantages of operative treatment. Several years ago I had pretty much made up my mind that I did not want to operate on any more breasts with cancer when the more radical treatment was set forth by the gentlemen Dr. Hodges has mentioned. It seemed to me that in the light of those cases, and under the more favorable conditions which antiseptic surgery affords, we were authorized to go over the subject again, and see if there was not a certain residuum of cases which were benefited, I might add cured, by operative measures. I don't think the time has come when that question can be fully answered. I think the subject is *sub judice*. There are 11 per cent. or 12 per cent. of these cases claimed to be cures under this method. If we can get even so small a proportion as that, that is something; and if the present new method of operating is carried out sufficiently long to demonstrate that that percentage can be accepted generally by the profession as a fact demonstrated, I think certainly something will have been gained.

In regard to the question of the local origin or the general origin of cancer, of course it is well known that great authorities differ as to that. Sir James Paget has created a good deal of attention by a very able address he recently delivered, in which he took the position of the general origin of cancer. I believe cancer to be a local disease, something very analogous to a germ disease, although of course that origin has not yet been demonstrated for it. And therefore I should lay out my treatment in accordance with that view. Dr. Hodges spoke of the dangers of the new method of laying open the axilla. I cannot see, looking back on the cases I have operated upon by the new method, that the number of deaths have been increased. Of late years a death from that operation has been a rare thing with me. I should think it was much more frequent in pre-antiseptic days than at the present time.

The advantage of opening the axilla in all cases where the diagnosis of cancer of the breast is made seems to me to be an obvious one. I remember one of the first cases I operated upon by this method, where no glands could be felt in the axilla, but where a pyramidal mass of fat representing axillary fat was dissected out, and a small cancerous gland was found in its centre. That patient was operated on by me four years ago, and although she might have been alive to-day if not operated upon, her condition, I think, would not have been as good as it has been. Her health improved, her whole appearance changed. A few weeks ago she was married. She is now in robust health. We could not, I think, however, regard that as a per-

manent cure, because even after that length of time I have seen growths recur. I have in mind a case where, four and a half years after the operation, a gland appeared in the axilla. In that case I did not operate upon the axilla originally. At that time this subject was not thought so much of as now, and the axilla was not opened. She has had a return in the axilla, but not in the breast; and that gland was removed and found to be a case of colloid cancer, a comparatively benign type of the disease. That case seems to me to show that it might have been a great advantage to her to have had the gland removed at the time of the operation. There is no return in the axilla, but I think at the present time she comes under that type of cases that Dr. Hodges classes as "unrecognized return of cancer." There is a cachectic condition that leads me to think that there is deep-seated cancer somewhere in the interior of the thorax.

I think there is a very large class of cases we ought not to think of touching, and I make up my mind about that class in accordance with the clinical history of the case. A case that has had a very short growth and a rapid one I think is bound to return, whether we operate early or not. I remember one case that I operated upon a good many years ago in the hospital. The case was sent in by Dr. Samuel Cabot; and the duration of the disease was so short, and the size of the cancer so small, that I marvelled at his ability to make the diagnosis. I operated and found a cancer not much larger in its cut surface than a twenty-five cent piece, and removed the disease. The patient died of cancer 3 years later. I operated a year ago on a case where the disease was developing rapidly. In a few months it had involved the breast and glands of the axilla very extensively. I operated on the theory that I might be able to remove all the disease, and when I got through the operation I felt satisfied that I had removed all visible disease, and yet that patient died with very extensive and malignant return in all parts of the body. I should not, therefore, advise operation in that type of cases, but in cases which are confined chiefly in the breast, where the history of a knowledge of a tumor has gone back for several months, perhaps, and the disease has not increased during that time, and there has been no extensive disease in the axilla, I think there is then some hope of removing the disease, and, if not of bringing about a cure, perhaps the result will be to produce considerable prolongation of life.

DR. BOLLES: It is at the best a very discouraging outlook, and one can hardly wonder at the conclusions that Dr. Hodges has brought to us. Still, in some respects, it appears to me that he has painted the picture too darkly. The proportion of deaths as result of operation I think is very much smaller in cases that I have seen than those he has given. I do not now distinctly remember but two deaths directly from the operation. One of these was a case operated on by the late Dr. Charles Homans when I was his house officer in the hospital. The patient died of an inflammation of the lung from extension of cancer through the chest wall. That case probably would not have been operated on if a careful examination of the chest had been made. Another was an old woman with an enormous

breast, amputated last year by Dr. Bradford, with whom I saw her in consultation. The operation was done merely to relieve the patient for the time being of great suffering. My own number of cases is not very large, perhaps twenty. I have had no deaths as a result of the operation. I have not been able to follow many of my own cases long enough to speak with positiveness about the cure. So far as I know there has been none. I do remember, however, one cure,—a case operated upon by Dr. Fifield twelve or fourteen years ago. It was undoubted cancer, with the usual clinical history and the typical structure of the disease when I examined it afterwards. That woman was living a year or two ago with no return.

In the discussion so far there has been no stress made whatever upon the few cures. The statistics of Dr. Hodges give perhaps 8 per cent. of cures in the larger number of old operations, and 9 or 10 per cent. in those where the axilla has been cleared, counting absence of recurrence after four or five years a cure. Now, there are no cures without operation. It seems to me that that fact should not be left out of consideration.

There is one other advantage in operation ordinarily, and that is that there are a few months of almost complete respite, in which the patient has comparatively good health, good courage, and enjoyment of life. This does not come without operation. After that has passed, the history of the patients operated on is perhaps no better than the others, as a general rule.

I quite agree with Dr. Hodges in protesting against the theory of indiscriminate clearing out of the axilla. The operation is so long, the shock so great, and the increased mortality so great, that I think that each case should be considered individually before such operation.

It seems to me that the operation of cancer may generally be considered in the light of a palliative; in many cases it has appeared to me very decidedly such. The mechanical inconvenience of a large cancerous breast is a very great one, the pain and odor may be distressing. Patients who have been refused operation, in my experience, come back repeatedly at intervals of three or four weeks, begging that the breast shall be removed or something done, until finally the request is acceded to, and the operation done at a less favorable time than at first. The offensive sloughing of the ulceration of return cancer is not often quite as great as that of the cancerous breast not operated on. The oedematous arm may appear in either case. I have usually removed cancerous breasts, particularly when requested by patients to do so. I have not often advised against it, excepting in those broadly extended cases of cancer of the skin as well as of the breast, where the result of the operation would leave a very large ulceration which would never heal.

DR. A. CAROT: It seems to me that the time has not yet come to form a really just opinion upon this question. I think there is a great deal of unreliability in the statistics which are brought forward, mainly depending upon the uncertainty of the diagnosis. In the first place, taking the cases which are not operated upon, and which still are known to be living years afterward, I don't understand how, unless a microscopic examination was

made, a diagnosis of cancer could be scientifically accepted. I remember about ten years ago assisting my father to remove the breast of a woman, who had what was thought by several surgeons to be undoubted scirrhus. The breast was removed, but the axilla not cleared out. I made a very careful examination of the breast from one end to the other. It was not scirrhus, but a chronic inflammatory condition of the breast, and that woman died under my care about two years ago of Bright's disease.

Another case occurred while I was a student in the hospital, in which the patient was operated upon and suffered five attacks of erysipelas following the operation one after the other. The patient finally recovered from all these, and died of heart disease some eight or nine years later. No examination so far as I know was made, and I don't think that case could be accepted. There is one case, however, of which I have knowledge and have examined, in which five operations were done for recurrences, the last operation about eleven or twelve years ago. That patient is still living. That seems to be one of the most conclusive cases of the advantage of the operation if we are to accept recurrence as proof of the cancerous condition of the breast.

DR. BRADFORD: Dr. Bolles has alluded to a case of mine which died. The patient was eighty years old, and came to the hospital because her relatives were unable to keep her at home. She could remain in the hospital only if she were operated upon. Though in apparently good health, and there appeared to be prospects of recovery, she died in four days. The operation, as was proved, was unjustifiable surgically.

It seems to me that the Society would assume a very grave responsibility if our dictum should go forth that cancer of the breast should not be operated on. As Virchow said, there is nothing so misleading as general impressions; and this evening necessarily the statements have been largely general impressions. All statistics of cancer of the breast dating back a few years must necessarily be faulty. Surgery has advanced; and we know that in a large number of cases, although no enlargements in the axilla are found, cancer exists in the glands there; therefore, statistics of cancer of the breast operated on without clearing out the axilla may be rejected as worthless, wherever they come from. Furthermore, if it is said that local treatment of the cancer of the breast for five hundred years has done no good, and that we must look for internal medication, what has been the result of internal medication, which must have antedated local treatment many hundreds of years?

There is one thing which has not been alluded to, and that is the mental effect on the patient. I watched two cases that underwent operation several years ago. In both cases microscopic examination proved it to be scirrhus of the breast. One case was five years ago, the other three. In the second case there was a recurrence. Both patients are not only well, but in a contented state of mind. In the first case there has been no evidence of recurrence. Now, to tell such a patient that "nothing had better be done; you have got two years of life; you had better make your will and be as contented

as you can, and be philosophical," may be surgery: it is hardly humanity. To state that the operation is a grave one is to state that it is grave where the tumor is large and the greatest precautions are not taken. Given a small tumor, with antiseptics and careful directions one should get a first intention in a large proportion of cases. We should get a confinement in bed of not more than a week or ten days; and it is worth the patients' while to go through that for the sake of peace of mind for five months. Without doubt there are many cases in which an operation is not justifiable.

DR. M. H. RICHARDSON said: I have been very much interested in listening to the arguments presented by the reader, and to the subsequent discussion. It seems to me also that the time has not come when we can say that cancer of the breast must be left to take its inevitably fatal course, and that we must do nothing to check its progress. I think that a proportion of cures of one in six demands operative interference in an otherwise fatal disease.

It does not seem to me, as I remember the numerous cases of untouched cancer of the breast which I have had the care of, that there is any less suffering where no operation has been done than in those unfortunate cases of recurrence after operation. On the contrary, I have observed that after the completed operations which I have done, the return has very frequently been internal and invisible, and the patients have died without suffering and unaware of the nature of their trouble. Often there has been no greater complaint than of indefinite rheumatic pains.

It seems to me that a cancer of the breast with invasion of the axillary lymphatics presents clinically to the operating surgeon the strongest evidence of local origin. In dissecting the axilla you find those glands nearest the breast large and hard, while those remote gradually become smaller and smaller till you come to the normal lymph gland.

In the most favorable cases the lymph glands are not affected at all. The same is true of the process of invasion of the internal organs. I believe fully that these cases will be cured if the disease down to the last cell is removed, and not till then. Any other view of the nature of this disease makes the removal of cancer of the breast or of any other organ unjustifiable except as a palliative measure.

Although I have stated elsewhere that in all my cases of cancer of the breast, where I have dissected the axilla, certainly during the past three years, I have found the axillary lymph glands affected, as shown by the microscope; yet many cases are reported, by men whose authority cannot be questioned, that in a certain number there is no such invasion. Though the number where nothing has been found is extremely small (3%), the number where nothing could be felt before opening the axilla is quite large (20%).

I think there is a good deal of value in the statistics of this disease, but it must be remembered, whether they favor operative interference or not, that they are based, many of them, on operations done a long time ago, not as thoroughly as now, and when the cases were not selected as they are now. It is obvious that all operations done before the fact was known that practically all cases are complicated by axillary metastasis, cannot be used

as a basis for ascertaining the number of cures. The indiscriminate use of the knife has undoubtedly raised the death-rate, and diminished the percentage of cures. I have seen many cases operated on where I think no operation should have been done, and I have done many myself which, as I am now convinced, ought to have been left alone.

I have no doubt that the mortality will be much diminished in the future, even in the completed operations. The mortality at the Massachusetts General Hospital is the same practically, during the past ten years, as during the previous history of the hospital, about 8%, and the operations mostly completed ones. Lister's operations from 1871 to 1880 were about the same (four deaths in fifty-three cases), with or without dissection of the axilla, (Butlin, "Op. Surg. Malignant Disease," p. 370). The colleagues of Butlin at St. Bartholomew's during the last decade have had but twelve deaths out of two hundred and seventy-eight operations, with and without dissection of the axilla. In forty-seven cases operated on by myself at the Massachusetts General Hospital, where the axilla was dissected, there were but three deaths, though the method used was undoubtedly very severe. One of these was due to miscarriage.

In regard to the indiscriminate dissection of the axilla, I would like to add that in my opinion the operation should never be done as a means of cure without the most thorough dissection of that space except in so small a proportion of cases as at most 3%. Without such dissection you may as well let the patient die as comfortably as she can, without interference, as far as any hope of permanent cure goes. There is no use in subjecting the patient to the danger and suffering of an operation, in addition to her other misfortunes, if you are going to leave a nest of cells in the axilla to grow, and finally infect the internal organs.

In regard to the time necessary for the completed operation, I think that in the hands of the surgeon, who alone ought to perform so difficult and formidable a dissection, the time ought not to exceed an hour in any case and rarely half that. The amount of shock must necessarily be considerable, but it ought to be no greater than the case demands when the operation is thoroughly done by men of skill and experience.

I agree with the other speakers who say that the time has not yet come when we can say that there is no use in this operation.

DR. J. W. ELLIOT: I know one case that was operated on in 1878, and that patient is now perfectly well. That is the only case I have ever followed a number of years.

DR. S. J. MIXTER: It seems to me that general statistics are more than usually valueless in deciding for or against this operation. In a very large proportion of cases the microscopic examination is wanting, and it is generally impossible to judge of the thoroughness of the operation. It is often claimed that a completed operation has been performed where the breast has been removed and some glands and surrounding tissue removed from the axilla. By injecting the breast with suitable substances the chain of lymphatic vessels may be shown running over the border of the pectoral muscle and through the axillary fat. These vessels are numerous, and

are spread out over a considerable surface, and in order to do any adequate operation the mass of tissues through which they run must be wholly removed. The entire contents of the axilla must also be dissected out, leaving nothing but the large vessels and nerves, the dissection being carried to the first rib. Few surgeons have operated in this manner, and only during the past few years. It is not from statistics from a large number of operations selected at random that we must draw conclusions, but from individual statistics: in other words, the best results by the best operators, whose statistics, including microscopical examinations, are reliable. A dozen such cases are of more value than all the results gathered from past hospital records.

DR. F. B. HARRINGTON: We recognize that certain epithelial diseases of the skin are local for a time. We recognize that cancer of the lip is local for a time, and if we get at it early enough, we can get it out successfully. Certainly many cases of cancer of the lip are cured. Reasoning from these facts and from the cases of prolonged freedom from the disease after removal, it seems to me that we are certainly justified in removing these tumors of the breast if we can do so early. In regard to the axilla I think that if the glands are very much enlarged they should not be removed. For with large axillary glands in plain sight there will undoubtedly exist other cancerous glands which are out of reach behind the axillary vessels. If the glands are not much enlarged, or apparently not at all enlarged, I think they should be removed.

DR. FIRZ: I have very little to say and perhaps all that I have to say has come out in the course of the discussion. Certainly from the anatomical side the evidence is very strongly in favor of cancer starting as a local process somewhere, whatever the organ of the body may be; and the evidence is also very strong that it starts rather in certain individuals than in others. There thus appears to be a general basis for the origin of the tumor as well as local cause of origin.

It seems to me, however discouraging is the outlook from the standpoint of the past, the only hope lies in the attempt at getting rid of the tumor at the earliest possible moment after it makes its appearance. Probably all surgeons will recognize that cancer of the lip, if removed before there is any evident invasion of the glands, is very unlikely to return; so it seems to me with regard to cancer of the breast. The time to operate is early, before the glands of the axilla are tangibly involved. The class of operations which offer the possibility, and perhaps probability of success are those where there is no external evidence that the axilla is involved; at the same time the axilla has to be cleared out, because the glands may be diseased although they are not larger than a split pea at the time of the examination. As Dr. Mixer has stated, it is not from general statistics that we are to receive the most light on this subject, but from the individual experience of the most successful operator, provided his experience is so presented that there can be no question as to the truth of his statements.

DR. WILLIAM F. WHITNEY spoke of the difficulty of classifying malignant growths, and called attention to the fact that a tumor in the greater part of

its history might be benign and then take on a malignant character. The diagnosis, therefore, is not always and absolutely sure from examining a small portion. The greater portion of the tumor should be carefully looked through. Usually these growths can be pretty readily shown to be of one character or the other, but occasionally cases occur which may perhaps in time, if we can follow them up and watch them, throw some light on the subject of their natural history.

DR. CAROT: In connection with the question of the local origin of cancer of the breast, I should like to mention a case of Dr. C. B. Porter's, in which I made a thorough microscopical examination.

The nipple was entirely gone, and its site was occupied by a flat epitheliomatous ulcer (Paget's disease). Stretching down from this into the breast were cylinders of epithelial cells surrounded here and there by little collections of cancer alveoli. These ran to a lump in the breast, which was a typical cancerous nodule surrounded by its zone of small round cells.

In this case the breast was wholly removed, but the axilla was not cleared out. It is now about eight years since this operation and the patient is still living, with no return of the disease.

DR. J. O. WHITNEY: Mrs. C. had a cancer of the breast over fifty years ago. The late Dr. L. L. Miller advised against operation. From time to time, when the breast became painful, he told her to take milk diet, and that relieved the pain. No operation was ever performed. Her daughter died of cancer of the breast. That is suggestive of the general origin of cancer.

In 1857 I amputated the breast of Mrs. S. I lost sight of her. She had a daughter who died of cancer of the liver. A son died of cancer of the ileo-caecal valve. A father died of cancer of the lip.

I hardly wish to go on record as saying that in all cases no operation should be the rule, nevertheless I will say this, that, all in all, I think that more harm than good is done by excision of the breast for cancer or in destroying them by escharotics.

DR. F. G. MORRILL and DR. E. H. BRADFORD reported a case of

TUBERCULAR PERITONITIS, APPARENTLY CURED BY LAPAROTOMY.

DR. F. G. MORRILL: James W. K., *æt.* six, entered the Children's Hospital May 1, 1888. Small for his age and somewhat emaciated. One month ago enlargement of and pain in the abdomen was first noticed. Slight cough. Father a consumptive. Physical examination: deficient respiration and a few rales at bases of both lungs. Abdominal circumference twenty-five inches at line of umbilicus. Superficial abdominal veins enlarged. In the hepatic and epigastric regions a tumor with a well-defined lower edge, which could not be separated from the liver by percussion or palpation. Fluctuation in lower abdomen.

May 3rd. Tapped and obtained 20 ozs. of greenish-yellow serum. Tumor again carefully examined and apparently due to enlargement of the liver. Thinking that the trouble might be of specific origin iodide of potassium and mercurial inunctions were tried, but without benefit. The abdomen (which

measured twenty-two inches after the tapping) soon began to refill, and the temperature, hitherto but slightly above normal, rose to 101.5°-102° F. The chances now seemed sufficiently in favor of a tubercular peritonitis to warrant surgical interference, and the boy was transferred to Dr. Bradford's ward for an operation in case he should think a laparotomy advisable.

DR. BRADFORD: A laparotomy was done and a small incision made just below the umbilicus. To my surprise no fluid was evacuated. The hand was inserted and the abdomen explored, and the mass, which seemed to be enlarged liver, on palpation proved to be nodular and connected with the omentum. One nodule was about the size of a walnut. The portion of peritoneum removed appeared to be studded with tubercles. The wound was dressed aseptically, a drainage-tube inserted, and the abdomen sewed up. No trouble followed the operation in temperature or otherwise, and the patient appeared to be improving. There was a slight discharge of fluid from the drainage-tube. The boy continued to improve, was sent to the Convalescent Home, and was discharged from the Convalescent Home in September. I saw him three weeks ago. He was better than at his entrance. The abdomen was larger than normal, and on palpation I could feel a large nodule externally over the region of the stomach. The improvement, it appeared to me, was probably due to the Convalescent Home and the country air. It appeared, however, that the drainage afforded by the laparotomy, and relief of tension, was of value, as an improvement followed the laparotomy before he went to the Convalescent Home. The laparotomy was attended by no disastrous results, as he improved directly after it. Why no fluid was evacuated on laparotomy can only be explained by the fact that the cavity was to a certain extent encysted, and the intestines served as a dam. The incision was left, and such fluid as would gather there drained. The intestines were found glued together, and so formed, to a degree, a cover.

EXCISION OF GANGRENOUS BOWEL; SUTURE AND RETURN TO ABDOMINAL CAVITY; RECOVERY.

DR. M. H. RICHARDSON showed a specimen of gangrenous bowel removed from a strangulated umbilical hernia of five days' standing. "The specimen was about eight inches in length, and was so much decomposed at the time of operation that excision was performed, with subsequent suture of the divided ends. The sac of the hernia was filled with fecal fluid, and the strangulated coil with the same mixed with blood. It was impossible to make out just what portion of the small intestine had been caught in the ring, but it seemed best, on the whole, to do the primary operation of excision and suture rather than the formation of an artificial anus and subsequent resection and suture.

The patient, a woman of 43, made a good recovery, and is now practically well, the temperature never going above 102°. She had, immediately after the operation, rapid respiration, which was undoubtedly due to bronchitis, as there was nothing whatever connected with the abdominal condition to cause alarm from the outset.

The experience thus far in these cases is too

limited to justify a very strong position in favor either of the primary or the secondary operation. My first case resulted fatally in twelve hours, yet I have no doubt whatever that the formation of an artificial anus or any other operation whatever would have resulted in the same way, owing to the extreme state of exhaustion to which the patient had been brought by long-continued strangulation and obstruction. It is a question as yet undecided, whether the combined dangers of artificial anus and subsequent resection are not greater than that of primary excision and suture, which further experience alone can answer.

NOTE.—November 18th, this patient is now sitting up, with normal temperature, regular bowels, good appetite, and perfectly well except a small granulating surface at the lower angle of the wound.

AMERICAN ACADEMY OF MEDICINE.¹

THE FAMOUS HISTORIC MASTERS OF THE HEALING ART WERE MEN OF CLASSICAL EDUCATION,

by GEORGE JACKSON FISHER, A.M., M.D., of Sing Sing, N. Y.

The author showed that Hippocrates had bestowed upon the world a symmetrical and systematic body of medical and surgical science, founded on the tradition and records of his predecessors; that the ancient Greek Asclepius were hospitals and clinical schools, presided over by priest-physicians of whom Hippocrates was one of the most distinguished. Reference was made to the extent and influence of the Alexandrian school of philosophy in the days of Aristotle, Herophilus, and Erasistratus. From this the author came to speak of the first century of the Christian era, and gave an account of Celsus the Roman, Pliny, Dioscorides, and spoke of the advanced condition of the healing art in that early age. The second century gave birth to Claudius Galen, of Asia Minor, who flourished chiefly in Rome. It was shown that Galen, as well as all the previous historic masters of the healing art, to which allusion has been made, was a man of genius and profound learning. Having shown that Galenic medicine was broader and deeper in its scope and influence than that of antecedent ages, the essayist proceeded to tell the interesting story of the manner in which medical science was preserved from extinction during the dark ages. He traced the modes by which it was conveyed into Persia, translated into Syriac and Arabic, annotated, tinctured with Oriental ideas, and returned to Europe in the "studies of the Saracens." The invention of printing, and its potency in distributing the existing science of that day, was next considered. Then followed the period of the new birth, the revival of letters, the discoveries in anatomy, physiology, and surgery. Vesalius and his great work, the labors of Fabricius and Harvey and of their contemporaries were briefly mentioned. All these teachers were also shown to have been men of classical education. Dr. Jenner, and the inestimable blessings which he conferred upon mankind, were next considered. The invention of the stethoscope by Laennec in 1815, the contributions of Sir James Y. Simpson to obstetrics and gynecology, and the still more brilliant services of Dr. J. Marion Sims, were strongly and justly held

¹ Concluded from page 507.

up for our admiration. Dr. Ephraim McDowell, the "father of ovariectomy," his followers, and their triumphs were duly remembered. All of these great leaders in medicine and surgery were shown to be men of classical education.

The speaker next referred to the extent of medical literature, to the necessity of being trained to study and research as a preliminary to entrance into the sacred temple of Esculapius. He emphasized the fact that all the enduring literature of medicine, and all the substantial improvements, discoveries, and progress through all time have emanated from learned and talented men; that scarcely anything is owed to the illiterate of our profession. The paper concluded by urging the necessity of keeping a vigilant guard at the doors of the temple of Esculapius, and if possible to prevent any from entering who are not "duly and truly prepared," not possessed of kindness of heart, of good common sense, of fair ambition, and of sobriety, honesty, and industry.

The last paper of the session was entitled

THE RELATIONS BETWEEN THE GENERAL PRACTITIONER AND THE CONSULTANT OR SPECIALIST,

by L. DUNCAN BULKLEY, M.D., New York.

In a previous paper the author had shown that specialism was a necessary and healthy outgrowth of general medicine. The object of the present communication was to point out the mutual relations which should exist between the general practitioner and the consultant or specialist.

Adjourned.

The annual banquet was held Tuesday evening.

WEDNESDAY MORNING SESSION.

THE NECESSITY FOR POST-GRADUATE INSTRUCTION IN THE PRESENT STATE OF AMERICAN MEDICAL EDUCATION,

by CHARLES CARROLL LEE, M.D., of New York.

The first post-graduate medical school was opened in New York in 1882. There are now six in operation in different medical centres. These courses are attended by practitioners anxious to brush up on certain subjects. Some of the colleges strive to provide clinical instruction for medical men, but the means at their disposal are not sufficient to provide the instruction required by practitioners. The post-graduate schools are continually increasing in popularity. Here the student in any particular branch is able to devote his entire time to that subject. He is also able to follow the practice of a number of experts, instead of being bound down to the methods of a single physician. For one mature enough to observe and judge for himself, the benefit of this is obvious. It is difficult to conceive how London, Berlin, or Vienna can offer greater facilities for clinical teaching than are to-day available in this city. To the medical teacher, a frequent European visit is desirable, not only to perfect his methods of instruction, but to liberalize his mind; but the time has arrived when, if the American teacher of medicine does his whole duty, the American student should lack no practical knowledge of his profession.

Dr. HENRY J. BOWDITCH, of Boston, presented a paper entitled

TOLERANCE AND INTOLERANCE IN MEDICINE;
CODES OF ETHICS.

What code of ethics should the Academy adopt?

The author took the ground that tolerance and intolerance are, in the world at large, two great moral forces, and in the line of resultant of these two powers the world has been and will be forever carried forward. History shows how these forces at times have actually changed places and made vice appear to be virtue. Hence they must be used cautiously and understandingly. Turning to medicine he found that intolerance had almost invariably been ready to oppose any new idea. Ambrose Paré, Jenner, etherization, and Morton, thoracentesis by Wyman's method, were brought forward as examples of the truth of the above statement. Tolerance has, however, always come to the rescue.

The author next referred to the American Medical Association, and of his great interest in it in its early days, and spoke of the gradually increasing tyranny of its "code." He called attention to the action of the American Medical Association last year, preparatory to voting, that no signature to codes should be required hereafter. The expulsion of the New York State Society was spoken of. In this connection he referred to homœopathy and eclecticism, and expressed freely his disgust at the tyranny exhibited at the time of the expulsion of the homœopaths from the Massachusetts Medical Society. He gave his testimony from personal knowledge of some members of these two sects to the integrity and intelligence of some homœopaths. He advanced the opinion that the Academy will not recover its just position until it rescinds the vote of adopting the American code of ethics. He claimed that the only true code, viz., "that of the gentleman," is the Golden Rule of "doing unto others as you would have them do to you." He concluded with the following words: "Gentlemen of the Academy.—If all of us would make that Divine rule the guide of our professional relations, tolerance and intolerance would join hands in peace, and this Academy, if it could induce all physicians to act upon it, would have accomplished one of its highest missions. God grant that this body may, with each year of its growth, by the work of its individual members, and by its own joint labors, tend to bring the whole profession of America up to higher grades of thought, of sentiment, and of action, so that we may at length really become what we have hitherto, but with unconscious falsehood claimed to be, a truly liberal profession.

WHICH IS THE LIBERAL SCHOOL?

by Dr. CHARLES MCINTIRE, Easton, Pa.

The author had been led to write the paper by a letter received from a homœopathist who was in other respects qualified for admission to the membership of the Academy. The question was, Does that branch of the legally qualified practitioners of medicine, self-called regulars, show illiberality in their professed rule of non-intercourse with any branch professing to hold any exclusive dogma; or is the illiberality shown by those who profess to believe in any exclusive dogma, while they have

given up its practice? The author concluded that the illiberality was shown by the latter class.

The consideration of the following amendment to the constitution was taken up: "The fellows of the Academy will be governed by those principles which actuate educated and honorable men in every profession, and by the constitution and by-laws of the Academy." After a prolonged discussion, the amendment was laid on the table for one year.

The following resolution was presented by the Council, and adopted: "That the Academy heartily endorses the suggestion of Dr. Parvin in his address that practical obstetrics should be made a part of the regular course in every medical college."

THE MULTIPLICATION OF USELESS DRUGS.

by CHARLES C. BOMBAUGH, A. M., M. D., Baltimore.

In dealing with this subject, the author referred to the continually increasing unwieldiness of the U. S. Dispensatory. The index of the fifteenth edition extends through seventy-six three-columned pages, embracing about seventeen thousand names of medicinal substances. Deducting one-third—a liberal allowance—for repetitions, there are, in round numbers, eleven thousand. Of this number, he thought that ten thousand could be transferred to the *index expurgatorius*, without being seriously missed. Of the three hundred and twenty-four constituting the primary list, it has been shown that one hundred and eight,—one-third—are very active, one hundred frequently do their work, and one hundred and sixteen are untrustworthy. In this connection, reference was made to the very limited number of remedies deemed worthy of classification in Dr. Wood's therapeutics. In the sixteenth edition of the Dispensatory there is an addition of fifteen pages to the index, a total of ninety-one pages. The editors intimate that they have discarded some of the material they considered "effete," so that although they added six hundred pages, the net increase was only one hundred and sixty-seven pages. As it is time to commence the discarding process and throw overboard the rubbish, this preliminary aggressive movement on the effete is most welcome. There is an irruption of newly discovered medicine and newly devised combinations which demands arrest. The only ground for tolerance is that now and then one comes to stay with the stamp of authoritative approval.

The speaker adverted at length to the declining sovereignty of empirical conclusions, and the coming reign of pharmacology, which is concerned with the action of drugs on the healthy body. The time has come for future dependence upon experiments with medicinal agents upon animals. Among the reasons for hastening the coming revolution is increasing recourse to remedial measures other than the administration of drugs. More and more reliance is placed by the practitioner upon such agencies as the electric current, massage, dietetics, treatment of systemic conditions or diatheses, germicides, antiseptics, disinfectants, the sanitation of State medicine, the prophylaxis of preventive medicine; but while we are grateful for these acquisitions, and while we welcome additional contributions to a list of positive medicines, which is conspicuous for insufficiency, let that gratitude and that welcome

be a standing protest against mere numerical preponderance.

THE INFLUENCE OF THE WORK OF THE ILLINOIS MEDICAL PRACTICE ACT UPON MEDICAL EDUCATION,

by H. A. JOHNSON, M. D., Chicago.

The Illinois State board of health was created in 1877. There are now one hundred and fourteen colleges which require evidence of preliminary study as a condition of admission. In 1883 there were only forty-three. Forty-three colleges now exact a three years' course, as compared with twenty-two in 1883. The board has now adopted the following resolution, defining the phrase "medical colleges in good standing" to mean "only those colleges which shall, after the sessions of 1890-91, require four years of professional study, including any time spent with a preceptor, and three regular courses of lectures, as conditions of graduation, and shall otherwise conform to the schedule of minimum requirements heretofore adopted by the Board."

One of the principal causes of efficiency of the Illinois board was the fact that it was a "mixed" board.

The total number of new members elected was ninety-eight.

The following honorary members were elected: Dr. J. H. Rauch, Springfield, Ill.; Sir Joseph Lister, London; Sir Spencer Wells, London; J. Lucas Champonnière, Paris; Dr. H. D. Didama, Syracuse.

Officers for ensuing year: president, Dr. Leartus Connor, Detroit; vice-presidents, Drs. Peter D. Keyser, Philadelphia; L. Duncan Bulkley, New York; Theophilus Parvin, Philadelphia; George J. Fisher, Sing Sing, N. Y.; secretary and treasurer, Dr. Richard J. Dunglison, Philadelphia; assistant secretary, Dr. Charles McIntire, jr., Easton, Pa.

Place of next meeting, Chicago, Ill.

Recent Literature.

Anatomical Technology as applied to the Domestic Cat. With illustrations. By BURT G. WILDER, B. S., M. D., and SIMON H. GAGE, B. S. Second edition, revised. New York and Chicago: A. S. Barnes & Co.

This work has so much in it to commend that we are not surprised that a new edition should be called for. It contains some additions and modifications, but the book is essentially the same. The methods will be found of great value to those beginning to work for themselves. The book as a whole is a very useful one.

The Medical News Visiting List for 1889. Lea Brothers & Co., Philadelphia.

The weekly form of this convenient and useful Visiting List has dated pages arranged for 30 patients a week; there are 48 prefatory pages of indispensable data, with five illustrations, and 176 pages of classified blanks. The text portion (48 pages) includes the latest therapeutic novelties, their doses and effects.

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THE PROPER TREATMENT OF CRIME AND
CRIMINALS. OUGHT THE CRIMINAL TO
BE DEALT WITH AS A LUNATIC?

BINSWANGER, professor of psychiatry, of Jena, proposes to treat crime as insanity, and criminals as lunatics till they shall have given sufficient proofs of their reformation.

While denying (in contradiction to Lombroso and his school) that there is any "external organic conformation" peculiar to criminals, or that there is any necessary relation between the development of the brain and of the cranium and crime, Binswanger affirms nevertheless that the true criminal if not *insane* is *mal-sane*, and that he is ordinarily the expression, if not of a reversion to prehistoric savage races, at least "of mental troubles amassed during generations, or of diseases of the nervous system in general, transmitted from parent to child," which have a deteriorating influence on the physical and moral development, "diminishing the aptitude for judgment and reflection," and fostering an impulsive and unrestrained egoism.¹

These views are in accordance with the careful studies of R. L. Dugdale, member of the Executive Committee of the Prison Association of New York, in reference to that notorious family of criminals known as the "Jukes family." Dugdale finds a very close relationship between nervous disorders and crime. He includes under the head of nervous disorders all convicts "who are or have been afflicted with insanity, epilepsy, idiocy, chorea, paralysis, or other nervous disorders, or who have any blood relations who are or have been subject to any of these diseases." Of the two hundred and thirty-three prisoners examined, forty-nine, or 23.03 per cent., belong to this stock, or nearly one in every four.

If we compare the crimes against property with those of impulse, placing arson in that category, we shall find that of the former there are 16.75 per cent. of neurotic stock, while of the latter there are 40.47 per cent." These statistics are quite in accord with the estimate of Dr. William A. Guy of London,² who finds "that the rates of insane to sane criminals is thirty-four times as great as the rates of lunatics to the whole population of England; or, if we take half the population to represent the adults which supply the convict prisons we shall have the criminal lunatics in excess in the high proportion of seventeen to one."

Another startling fact which we ascertain from Dugdale's tables is that 42.49 per cent. of the total number of criminals who were the subjects of his investigations were of intemperate families, while, 39.05 per cent. were habitual drunkards. With the house of refuge boys, the ratios rise respectively to 51 per cent. of intemperate family, and 51 per cent. of habitual drunkards.

It is of course to be borne in mind that in the creation of criminals there are two important factors: heredity and environment; that a person with strong inherited proclivities toward crime may, under the repressing influences of a good educational environment lead an honest life, while on the other hand, bad surroundings and lack of training and discipline may develop a naturally vicious child into a hardened and incorrigible criminal, or even develop criminality in one whose heredity might be regarded as fairly good.

This politico-economic method has won the advocacy of Charles Dudley Warner, who writes on the subject in the last *Forum*,³ an article under the head "Creating Criminals." Our system of dealing with criminals and those with strong criminal tendencies, he says, is calculated to recruit the ranks of the professionals. It is an old story, the life of young offenders, boys or girls, through the city lock-ups, the usually foul county jails, the houses of thirty days' detention, the reform schools, the penitentiaries, always with associations tending to destroy self-respect and increase a liking for villainy, to the full-blown professional condition. Our main effort is to punish crime, not to prevent it.

Mr. Warner regards it as amazing that while in medicine there has been great progress in the past fifty years in the line of the prevention of disease, in the science of *penology*, that is, the rational mode of dealing with crime and criminals, either for prevention or reform, there has been but very little advance made.

He makes some good suggestions as to the edu-

¹ Congress of German Physicians and Naturalists, Cologne, Sept. 18-22, 1888.

² The Forum, November, 1888.

³ Journal of Statistical Society, vol. xxii. p. 16.

cation needed for criminals in prison, if we would reform them and make them fit again to go into society. We must recognize the fact that the ordinary criminal "is a defective human being, or quite disorganized (*sic*), always defective morally, generally twisted mentally (?), and in the majority of cases damaged and defective physically. He can not be changed into a moral being, with impulses to right and orderly living, except by discipline applied long enough to change his moral, mental, and physical habits." "Considered broadly," continues Mr. Warner, "the prevention of the increase of crime and of criminals lies in two things. (1) The rescue of children predisposed by their circumstances to crime. Here is a vast field of usefulness open to social reformers, who would nip crime in the bud. (2) The subjection of actual criminals to the discipline calculated to change their habits until they are by competent authority pronounced fit to go out."

In other words, according to this view of the relation of crime and of criminals to the community, and the proper therapeutic measures, prophylactic and curative, to be applied to this disease in the body politic, the criminal is to be practically treated as an insane and irresponsible person until by a term of discipline, which shall include study, work, and right and orderly living, he shall have shown that he is so changed in his habits that he is fit to take his place in the world again.

In fine, although science may not as yet have recognized a definite "criminal type of brain," or any "organic conformation" peculiar to criminals, any more than to lunatics, it is, nevertheless, the part of wisdom for society to regard criminality as disease and treat it as such; the inveterate and incorrigible victim of this malady to be kept under restraint, where he can neither be a source of disturbance nor infection, and a suitable uplift being given to those that show evidence of radical reformation and true moral sanity.

PUERPERAL FEVER A PREVENTABLE DISEASE.

A PLEA FOR THE MORE GENERAL ADOPTION OF ANTISEPTICS IN MIDWIFERY PRACTICE.

UNDER this title Dr. Charles J. Cullingworth, obstetric physician to St. Thomas's hospital, has delivered a noteworthy address to the students of the hospital school. It is to be hoped that this plea will reach a far wider audience than that to which it was addressed, and strong in this hope we cannot forbear using our efforts in giving greater publicity to its burden.

Were it not that so many physicians are apparently oblivious to the enormous mortality and

morbidity from puerperal fever, it would seem unnecessary to reiterate the facts so well known to those who have studied the subject, and which are so clearly stated by Dr. Cullingworth and by previous writers. The returns of the Registrar-General's office for the year 1886 show that in England and Wales there were two thousand and seventy-eight deaths from puerperal fever, a mortality of 4.29 *per mille*. Owing to inaccuracies of observation and record it is believed that the figures of the Registrar-General's report fall far below the truth; but accepting them without correction, it appears that "no fewer than six thousand nine hundred and sixty-six deaths from puerperal fever have been certified as such within the three years 1884-86, an average of two thousand three hundred and twenty-two cases per annum in England and Wales." There are no data to show the percentum of puerperal morbidity; but there is reason to believe that if all cases of morbidity could be collected and accurately classified, the relative proportion of puerperal disease directly attributable to infection would be appalling.

The administrators of most lying-in charities are now alive to the duties of prophylaxis, and the statistics of these institutions show the results of intelligent and well-directed effort. In the Lying-in Hospital in Vienna the mortality from puerperal fever in 1881-85 was 4 *per mille*. In Leopold's clinic in Dresden, among one thousand three hundred and eighty-eight deliveries in 1887 there was only one death from puerperal fever, 0.7 *per mille*. In the New York Maternity in 1886, with four hundred and sixty-three deliveries, there was one death from sepsis, 2.1 *per mille*.

Perhaps the possibilities of strict antisepsis are as well shown by the following table, quoted by Dr. Cullingworth from a paper by Dr. W. L. Richardson,¹ as by any statement at our command:—

BOSTON LYING-IN HOSPITAL.²

Date.	Deliveries.	Total number of Deaths.	Deaths from Sepsis.	Mortality per 1000 from Sepsis.
1882	288	17	16	55.5
1883	242	14	11	45.8
1884	510	6	5	16.1
1885	308	4	2	6.4
1886	373	3	0	0

But it is to the private practitioner, "who has never lost many cases from puerperal fever," that the appeal for rigid asepsis needs most urgently to be addressed. To him must be pressed home the

¹ Boston Med. and Surg. Journal, January 27, 1887.

² The present system of antisepsis in use at this hospital was adopted in the fall of 1885.

doctrine that childbed fever is *not* due to "nosocomial malaria," nor to any form of autogenesis; but that puerperal infection is heterogenetic, is engendered only by the introduction of poisons from without, and can be prevented by approved measures of asepsis conscientiously carried out. In the words of Parvin, "the doctrine of autogenesis is a confession of ignorance, the creed of fatalism, the cry of despair, the very pessimism of obstetric medicine."

In Germany the use of antiseptics in private obstetric practice is a matter of State regulation, the breach of which is liable to punishment. In Great Britain and in this country the use of adequate prophylactic measures is, and is likely to remain, a matter of individual responsibility, not of penal enactment. Surely, as Cullingworth truly says, it ought not, on that account, to be considered the less binding.

PNEUMONIA MORTALITY IN MASSACHUSETTS ALMSHOUSES.

As a slight contribution to the further study of mortality from pneumonia, a consideration of some figures derived from the reports of the three State almshouses in Massachusetts may prove of interest. In the Monson Workhouse the death-rate for the decade 1856 to 1865 was 21.09 per cent., while for the decade 1866 to 1875 it had fallen to 16.43 per cent. Since 1872, when the institution was converted into a State primary school, the adult paupers being sent to the State almshouses at Bridgewater and Tewksbury, pneumonia has been so infrequent among the children as practically to be absent. At any rate no comparison is possible with the data of the previous decades.

Of the Bridgewater Workhouse we have data at our disposal since 1861. For the five years from 1861 to 1865 the death-rate from pneumonia in this almshouse was 27.44 per cent.; for the decade 1866 to 1875, 28.12 per cent., and for the decade 1876 to 1885, 36.58 per cent., showing a small though steady increase. From the Tewksbury State Almshouse the reports are more complete, showing for the decade 1856 to 1865 the very low rate of 13.95 per cent.; for 1866 to 1875, the large rate of 36.25 per cent., and for 1876 to 1885, the still larger rate of 40.60 per cent. Eliminating, however, as years of exceptional mortality, the year 1871, when of twenty-six patients fourteen died, the year 1875, when out of thirty twenty died, and the year 1885, when of eleven patients all died, we get a death-rate for the three decades of 13.95 per cent., 23.07 per cent., and 34.67 per cent.

Since the inmates of these institutions are, and

always have been, paupers without any legal residence in the State, the fact that they are for the most part foreigners does not perhaps vitally enter into the problem whether the modern treatment of pneumonia is more or is less efficacious than was the treatment of former years. The trustworthiness of the statistics taken as a whole may, however, well be doubted, in view especially of the fact that in one of the institutions the number of deaths from pneumonia in one year appears to exceed the number of cases of the disease that had been under treatment, while in another year in which deaths from the disease are recorded there are no recorded cases of sickness from pneumonia, although we do find that there were cases of "congestion of the lungs," as well as of "other respiratory diseases."

This matter of diagnosis is of vital consideration. When Dr. Hartshorne read his paper last February before the College of Physicians of Philadelphia on the "Past and Present Mortality and Treatment of Pneumonia," Prof. Osler made the point in his discussion of it that the present diagnoses of pneumonia differ so radically from the diagnoses of the disease made even a few decades ago as to prevent a complete comparison. In addition to this, it seems the part of caution to consider whether there be not other discrepancies, if not positive errors, in the statistical computations which militate against the idea that any comparison between the mortality of the disease in separated decades can be so "fairly and safely" made as to allow a positive and sweeping arraignment of modern methods of treatment. The ages may differ no less widely in the different sets of statistics than do the nationalities of the patients, while the character of the disease, whether it be primary and uncomplicated or merely a sequela of some disease that has already reduced vitality, is likewise utterly ignored. In other words, the assumed inefficiency of modern treatment may be shown to be only one of many possible causes of the apparent increase of mortality, a view of the subject which we postpone for future consideration.

MEDICAL NOTES.

— Dr H. A. Hare of Philadelphia suggests in the *University Medical Magazine* a new use for ether during anesthesia. Very frequently during the early stages of the administration of an anesthetic the patient "forgets to breathe" even before the ability to perceive peripheral irritation is lost. Even later in anesthesia, when the breathing suddenly ceases, it is customary to use cold water externally and to slap the patient with wet towels. Such measures are generally called for hurriedly,

and it is not at all uncommon for an exasperating delay to occur before the water arrives. The ether is always at hand, however, and Dr. Hare finds that in a large number of instances both in man and the lower animals the free use of ether poured upon the belly causes so great a shock by the cold produced by its evaporation as to cause a very deep inspiration, which is often followed by the normal respiratory movements.

—A story which sounds more like the plot of a stage extravaganza than actual fact is given by a foreign contemporary regarding one of the hospitals of the Red Cross in Hungary. In one of the large towns the committee of organization, though of two years' standing, had done absolutely nothing towards completing the arrangements for the hospital, when they unexpectedly received an intimation that the Archduke Charles Lewis would visit their institution within two days. Startled by the unwelcome intelligence, the committee promptly engaged a large building for one month, and set a hundred workmen at the task of getting the place into order. They borrowed the beds and other articles of furniture from the municipal hospital, and secured a number of ailing natives, who consented to play the rôle of sick persons for two florins a day. The Archduke declared himself thoroughly satisfied, as the result of his inspection, but he had no sooner turned his back than the committee brought in the workmen to restore the house to its original condition. Here, however, there was a hitch, the patients finding their occupation too lucrative to be relinquished at such a short notice, and declining to turn out until they were perfectly restored to health. In fact, force had to be resorted to in order to evacuate the premises. The result was that some of them brought actions against the committee, who were ordered to pay the two florins daily to all the sick men engaged for the Archduke's visit. The worst of it was that the hopes of the members of the committee, who expected a decoration, were thus frustrated.

—The overcrowded condition of the Flatbush, L. I., insane asylum is attracting continued attention in New York. The King's county asylum, including four auxiliary buildings, was constructed to accommodate 1041 persons. It has now over 1600 persons crowded and huddled together. The wards, it is said, are overcrowded, and the hallways are full. The building is in need of many necessary repairs, the plumbing especially being defective. There are one hundred and twenty women and thirty-six men penned up in the basement and cellar, the walls of which are wet with moisture and slime.

—The *Polyclinic* says that Dr. Durand, of New Orleans, wishing to test the practical effect of mind

disease, gave a hundred patients a dose of sweetened water. Fifteen minutes after, entering apparently in great excitement, he announced that he had by mistake given a powerful emetic, and preparations must be made accordingly. Eighty out of the hundred patients became thoroughly ill, and exhibited the usual result of an emetic; twenty were unaffected. The curious part of it is that, with very few exceptions, the eighty "emetized" subjects were men, while the strong-minded few, who were not to be caught with chaff, were women.

—Miss Florence Nightingale is said by the *Medical News* to be a confirmed invalid from a spinal disease incurred through over-devotion to the cause of nursing. She went home sick from the Crimea and her health was never thereafter thoroughly re-established. She is now approaching her seventieth year, and is destined to pass the evening of her days as an inmate, and its most favored inmate, of St. Thomas's Hospital, London. It was at that institution, in 1858, was established the Nightingale Fund of £50,000, in perpetual commemoration of the heroic labors of that lady in the Crimean hospital.

—The *Lancet* quotes the following thrilling bit of description from a recent English novel: Scene: A dissecting-room. Subject of demonstration: The brain of a man the victim of neuralgia. "The operator laid bare the brain. Every eye, bent, strained on it under the bad light, perceived it to have been, as it were, eaten away, consumed by a gnawing. . . . The professor compressed his shaggy brows, and then, with one slide of the scalpel, laid open the hideous mass. On the instant arose a cry, a hiss, a panting of bitter loathing, of horrible nausea. As the brain fell apart there crawled across the table, black from its rich battenings, an enormous spider!"

Dissection.

AN UNUSUALLY RARE CASE OF PLURAL BIRTHS.

Dr. Breneman describes in the *Australasian Medical Gazette* for Aug., 1888, a case of quadruple births, as follows:—

"The patient I have frequently had under my care, suffering generally from cardiac asthma, consequent on an attack of rheumatic fever; she never enjoys good health. Her family history shows no tendency to plural births. She is thirty-one years of age, was born in Tasmania, first menstruated between seventeen and eighteen, was married at the age of eighteen, since which time she has given birth to seven full-time children, the youngest of which is two years and eight months old. Her previous labors have been rather unnatural; says she has had three cross-births, and had to have the children turned.

Her last menstruation was from December 20th to New Year's Day; quickened the middle of April; says she did not have a day's good health while carrying, no appetite, and was an immense size, in fact a burden to herself near the last, feet and legs very oedematous, and noticed very little movement with the exception of an occasional flutter.

She was first taken ill on the previous Friday and had occasional pain until Tuesday about eleven o'clock, when the membranes containing the first child ruptured and there was an immense gush of liquor amnii; her husband just happened to come into the house, and noticing the condition of affairs assisted her into bed, when she immediately had another pain and the first child was expelled. He ran for the midwife, who was there five minutes afterwards. She had scarcely time to tie the cord and remove the child when another pain ruptured the membranes containing the second child, and there was a second gush of liquor amnii; another pain expelled the second child, which was followed by the placenta, with the two cords attached. But a few minutes elapsed when another pain ruptured the membranes containing the third child, when there was another gush of liquor amnii, which was followed by the third child with its placenta.

The midwife thinking she had come to the end of the string made preparations for applying the binder, when the membranes containing the fourth child ruptured, when there was another gush of liquor amnii, and with a few pains the fourth child was expelled with its placenta. There was very little hæmorrhage. The labor was quite natural. The children were expelled head first, with the exception of the fourth, which was expelled feet first. The labor was very short, there being but thirty minutes from the time the first child was born to the completion of the labor; ten minutes between each child. The children were all born alive, and lived from two to six hours and a half.

I examined the children and found them to be as large as the usual five and a half months child, perfectly formed and exceedingly well nourished; three girls and a boy. The mother made an uninterrupted recovery, and was out of bed on the eleventh day."

INDUCTION OF PREMATURE LABOR.

M. BAYET, interne in Prof. Kufferath's clinic in Brussels, describes in *La Clinique* an attempt made under the professor's direction to induce premature labor by means of the so-called elytro-ptyergoid apparatus of Chassagny. This apparatus, about which a good deal of discussion has recently taken place in Belgium, consists essentially, according to the *Lancet*, of a pig's bladder, which is folded up, and introduced into the uterus, and subsequently distended by means of the injection of water, similarly to the "colpeurynter" which is used in German clinics. The patient in M. Bayet's case was a young woman of strong constitution, but with a rachitic pelvis, the conjugata vera being only six centimetres and a half, as measured by Van Huevel's pelvimeter. The woman was in the eighth month of pregnancy. M. Kufferath gave her the choice of having premature labor induced

at once, or of waiting until her full time, and then submitting to Cæsarean section, with the hope of bringing forth a living child. She naturally selected the first of these alternatives. With this object Chassagny's apparatus was introduced, and allowed to remain for half an hour in the uterus; it caused, however, severe pain, and was extremely difficult to keep in its place, besides which it produced erosions in the vagina, causing a bloody discharge. Further attempts were subsequently made, but these proved so painful, and caused so much ulceration and oedema of the vagina that they had to be discontinued, and the patient left alone for five or six days. These attempts to produce premature labor having entirely failed, a soft bougie was introduced, and in three or four days' time with a successful result. An attempt was made to deliver the woman with forceps, but the head refused to engage the brim. Tarnier's basiotribe was therefore applied, and the head crushed in all directions, after which extraction was easily effected. The patient made a good recovery. M. Bayet remarks that Chassagny's apparatus gave a very different result from that described by M. Hubert, who reported that he had been able to induce premature labour in an hour by its means. M. Bayet also remarks that it is impossible thoroughly to disinfect an apparatus composed of a pig's bladder, especially as it is necessarily introduced folded up, and therefore full of creases. Regarding the effect of the basiotribe, it is noteworthy that the child when born was, legally speaking, alive, its respiratory and cardiac movements continuing, indeed, for about two hours, besides which it cried faintly. Of course, as the brain was completely reduced to a pap-like mass, life, such as it was, depended entirely on the medulla oblongata; still it is well to remember that in delivery by means of cephalotripsy it is possible that the child may be born "alive," and may therefore inherit property.

M. Bayet's objection to the pig's bladder on the ground of the septic qualities inseparable from it appears to be an insuperable one to its employment as an obstetric agent.

DR. HENRY B. SANDS.

THE sudden death of this eminent surgeon, which was recorded last week, was at first supposed to be due to cerebral hemorrhage, but the autopsy performed by Drs. Delafield and Peabody indicated that the cause was probably heart failure; the walls of the heart were very thin, and a clot was found in one of the coronary arteries.

From the beginning Dr. Sands' surgical career was a brilliant one, both as regards his hospital work and his private practice; but its success was due quite as much to his indefatigable industry as to native talent. Of late years he was especially identified with the Roosevelt Hospital, where he had a continuous service which he resigned last April; and with the New York Surgical Society, in which he took the deepest interest. Though frequently making valuable contributions to periodical medical literature, he never published any extended surgical work; it is stated, however, that he had one in contemplation, should his life be spared. As a consultant, he was held in the highest esteem by his professional brethren. As a general surgical authority none stood higher; while his many admirable qualities of mind and heart, combined with this great professional

reputation, gave him a position in the community which few ever attain.

The funeral services, which were held at the Broadway Tabernacle, November 21st, were attended by the Faculty and students of the College of Physicians and Surgeons, the Academy of Medicine, Medical Society of the County of New York, and other societies, and by a large number of prominent citizens out of the profession. A touching address was made by the Rev. Dr. Wm. M. Taylor, the pastor of the church, in the course of which he referred to a plan which Dr. Sands had conceived for building and equipping an operating amphitheatre in connection with Roosevelt Hospital. Dr. Taylor thought that the medical profession could erect no more fitting memorial to Dr. Sands than such a building, and suggested that a subscription be started among physicians for the purpose of carrying out this plan.

The pall-bearers were Drs. J. C. Dalton, Wm. H. Draper, James W. McLean, Francis Delafield, Charles McBarney, A. B. Ball, and J. G. Curtis, and Messrs. James Roosevelt, John Knox, and R. G. Bradford.

Correspondence.

A LARGE BABY.

WESTERLY, R. I., Nov. 22, 1888.

MR. EDITOR.—The records of the large babies are so unsatisfactory, that I have no hesitation in calling attention to one in my practice here.

Mrs. F., age 28, viii-para, entered into labor February 8, 1888, with a midwife in charge. February 11, at 12 P. M., as the child was still unborn, I was called to "fix her," as the husband said. Examination revealed os fully dilated and membranes unruptured, dorsum presenting, with child in D.L.A. position. Etherized, and delivered a living female child, which weighed in a small napkin 15 lbs. 2 oz.; a second pair of scales was used, which gave a weight of 15 lbs. 3 oz.

Very respectfully,
EDWIN R. LEWIS, M. D.

REPORTED MORTALITY FOR THE WEEK ENDING NOVEMBER 10, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhoeal Diseases.	Typhoid Fever.	Diph. & Croup.
New York.....	1,526,081	600	225	18.40	12.96	1.76	2.08	5.76
Philadelphia.....	1,016,758	—	—	—	—	—	—	—
Brooklyn.....	751,432	296	116	22.78	11.22	1.70	2.72	14.62
Chicago.....	760,000	—	—	—	—	—	—	—
St. Louis.....	449,160	—	—	—	—	—	—	—
Baltimore.....	437,155	138	48	10.22	16.79	1.46	2.19	6.38
Boston.....	407,024	166	58	17.50	9.60	2.40	3.60	7.20
Cincinnati.....	325,000	—	—	—	—	—	—	—
New Orleans.....	248,000	119	43	17.85	11.90	6.80	.85	8.55
Buffalo.....	230,000	—	—	—	—	—	—	—
Washington.....	225,000	77	30	16.77	12.90	5.16	2.58	2.58
Pittsburgh.....	210,000	—	—	—	—	—	—	—
Milwaukee.....	200,000	—	—	—	—	—	—	—
Providence.....	133,000	—	—	—	—	—	—	—
New Haven.....	80,000	—	—	—	—	—	—	—
Nashville.....	65,153	17	3	11.76	23.52	—	5.23	—
Charleston.....	60,145	37	18	11.10	—	2.70	2.70	—
Portland.....	40,000	14	3	—	28.56	—	—	—
Worcester.....	76,328	24	8	20.80	29.12	4.16	4.16	8.32
Lowell.....	69,530	—	—	—	—	—	—	—
Cambridge.....	64,079	18	3	16.66	11.11	5.55	5.55	5.55
Fall River.....	61,203	23	8	30.45	17.40	—	—	21.75
Lynn.....	51,467	15	—	13.33	—	—	—	13.33
Lawrence.....	40,175	18	4	22.22	22.22	—	11.11	5.55
Springfield.....	39,952	—	—	—	—	—	—	—
New Bedford.....	36,298	11	3	9.09	—	—	—	9.09
Somerville.....	33,307	—	—	—	—	—	—	—
Holyoke.....	32,887	—	—	—	—	—	—	—
Salem.....	28,781	8	2	—	12.50	—	—	—
Chelsea.....	27,552	11	1	9.09	9.09	—	9.09	—
Haverhill.....	24,979	5	1	—	—	—	—	—
Taunton.....	24,796	5	2	20.00	40.00	—	12.50	—
Brockton.....	24,784	5	0	20.00	20.00	—	—	20.00
Gloucester.....	23,187	—	—	—	—	—	—	—
Newton.....	21,105	5	0	20.00	—	—	20.00	—
Malden.....	18,932	—	—	—	—	—	—	—
Fitchburg.....	17,534	8	1	—	37.50	—	—	—
Waltham.....	16,651	3	0	—	33.33	—	—	—
Newburyport.....	13,839	3	0	—	—	—	—	—
Northampton.....	13,419	—	—	—	—	—	—	—

Deaths reported 1,628: under five years of age 567; principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 125; consumption 211, acute lung diseases 215, diphtheria and croup 122, typhoid fever 41, diarrhoeal diseases 37, scarlet fever 31, measles 16, whooping-cough 16, malarial fever 11, cerebro-spinal meningitis eight, erysipelas four. From scarlet fever, New York 25, Boston, Brooklyn, Baltimore, and New Orleans one each.

From measles, New York 12, Brooklyn and Boston one each. From whooping-cough, New York seven, Brooklyn five, Baltimore and Washington one each. From malarial fever, New York six, Brooklyn two, New Orleans, Nashville, and Charleston one each. From cerebro-spinal meningitis, New York three, Washington two, Worcester, Fall River, and Taunton one each. From erysipelas, New York two, Brooklyn and Washington one each.

The meteorological record for the week ending November 17, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week end'g Saturday, Nov. 17, 1888	Barom- eter.	Thermometer.				Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.*		Rainfall.
	Daily Mean	Daily Mean	Maximum.	Minimum.	S. A. M.	S. P. M.	Daily Mean	S. A. M.	S. P. M.	S. A. M.	S. P. M.	S. A. M.	S. P. M.	Duration, Hours & Min.	Amount in Inches.
Nov. 11	30.76	44.0	52.0	40.0	75	46	60.0	S. W.	W.	12	17	C.	C.	1.00	.02
" 12	30.19	40.0	52.0	36.0	60	35	38.0	S. W.	N. W.	12	6	C.	C.	0	0
" 13	30.55	34.0	46.0	26.0	61	63	62.0	N. W.	W.	18	15	C.	C.	0	0
" 14	30.42	48.0	52.0	38.0	79	63	70.0	S. W.	W.	20	15	C.	C.	0	0
" 15	29.85	52.0	54.0	38.0	81	93	87.0	S. W.	N.	8	12	O. C.	R.	12.00	.47
" 16	29.85	46.0	62.0	42.0	80	85	82.0	W.	N. W.	12	12	C.	R.	3.00	T.
" 17	30.34	35.0	45.0	34.0	81	45	63.0	W.	N. W.	12	18	C.	C.	7.00	.11
Means for the Week	30.14		53.0	38.0			66.0								

* O, cloudy; C, clear; F, fair; G, fog; H, hazy; S, smoky; R, rain; T, threatening; N, snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM NOVEMBER 16, 1888, to NOVEMBER 23, 1888.

By direction of the Secretary of War, leave of absence for four months is granted Lieutenant-colonel Richard H. Alexander, surgeon, to take effect from the date of his relief from duty as medical director Department Arizona by Lieutenant-colonel Joseph R. Smith, surgeon. Par. 11, S. O. 268, A. G. O., Washington, November 16, 1888.

SMITH, Lieutenant-colonel, after being relieved by Lieutenant-colonel Alden, will report in person to the commanding officer Department of Arizona for duty as medical director of that Department relieving Lieutenant-colonel Richard H. Alexander. Par. 10, S. O. 268, A. G. O., Washington, November 16, 1888.

ALDEN, Charles H., lieutenant-colonel, surgeon, is relieved from further duty at the United States Military Academy, West Point, New York, and will report in person to the commanding general Department of Dakota, for duty as medical director of that department, relieving Lieutenant-colonel Joseph R. Smith, surgeon. Par. 10, S. O. 268, A. G. O., Washington, November 16, 1888.

Leave of absence for one month, to take effect on or about the 1st proximo, with permission to apply for an extension of one month, is granted surgeon William E. Waters, Vancouver bar racks. Par. 1, S. O. 121, headquarters department of the Columbia, November 9, 1888.

By direction of the Secretary of War, Major Charles Smart, surgeon, will proceed to Milwaukee, Wisconsin, to represent the Medical Department of the Army at the meeting of the American Public Health Association in that city, November 20 to 23, 1888, and upon the adjournment of the association will return to his proper station. Par. 2, S. O. 268, A. G. O., Washington, November 16, 1888.

By direction of the Secretary of War, leave of absence for four months is granted Captain Richard C. Newton, assistant surgeon. Par. 16, S. O. 272, A. G. O., Washington, November 21, 1888.

By direction of the Secretary of War the leave of absence granted Captain Marshall W. Wood, assistant surgeon, in Special Orders, No. 297, November 3, 1888, from this office is extended ten days. Par. 12, S. O. 270, A. G. O., Washington, November 19, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK END-ING NOVEMBER 24, 1888.

HEFFINGER, A. C., passed assistant surgeon, ordered to the United States Steamer "Kearsarge."

BRYANT, PATRICK H., assistant surgeon, ordered to the Naval Hospital, Brooklyn, New York.

MCMURTRY, DANIEL, surgeon, ordered to the United States Receiving ship "Vermont."

DRENNAN, M. C., surgeon, detached from "Vermont" and to the "Atlanta."

WINSLOW, G. F., surgeon, detached from the "Atlanta" and placed on waiting orders.

McCLURE, W. A., passed assistant surgeon, detached from the "Tallapoosa" and to the "Kearsarge."

VON WELDEKIND, L. L., assistant surgeon, ordered to the "New Hampshire."

HEFFINGER, A. C., passed assistant surgeon, detached from the "Kearsarge" and to the "Tallapoosa."

STEPHENSON, B. F., surgeon, detached from Navy Yard, Boston, and to the "Wabash."

ONERLY, A. S., medical director, ordered to the United States Steamer "Richmond."

JONES, W. H., surgeon, detached from the United States Steamer "Richmond" and wait orders.

COMMENCEMENT.

DARTMOUTH MEDICAL SCHOOL.—Commencement exercises were held at the Dartmouth Medical College, Tuesday, November 20th, and twenty-six graduates received diplomas.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.—There will be a meeting of this Society, at 19 Boylston Place, on Monday evening, December 3, 1888, at 8 o'clock. Readers: Dr. J. J. Putnam, "A case of Hereditary Muscular Dystrophy, with Microscopic Demonstrations;" Dr. W. A. Dunn, "Three cases of Perityphilitis, with recovery." Balloting for Associate Members at 9 P. M.

T. F. SHERMAN, M.D., Secretary.

DEATHS.

Died in Chelsea, Mass., November 17th, Leverett Duncan Gunter, M.D., at the age of forty-nine.

Died in Malden, Mass., November 25, 1888, Charles Bailey Shate M.M.S.S., aged forty-five years.

In South Dartmouth, Mass., November 11, 1888, Francis Dana Bartlett, M.M.S.S., aged eighty-five years.

BOOKS AND PAMPHLETS RECEIVED.

A Manual of Ophthalmic Practice. By Charles Higgins, F.R.C.S.E., Ophthalmic Surgeon to Guy's Hospital; Lecturer in Ophthalmology at Guy's Hospital Medical School. With Illustrations. Philadelphia: P. Blakiston, Son & Co. 1888.

Practical Anatomy: a Manual of Dissections. By Christopher Heath, F.R.C.S., Holme Professor of Clinical Surgery in University College, London, etc. Seventh Edition. Revised by Rickman J. Sallie, M. S. Lond., F.R.C.S., Teacher of Operative Surgery, and late Demonstrator of Anatomy in University College, London, etc., etc. With 24 Colored Plates and 278 Engravings on wood. Philadelphia: P. Blakiston, Son & Co. 1888.

Photographic Illustrations of Skin Diseases. An Atlas and Text Book combined. By George Henry Fox, A.M., M.D. Hand-colored plates; nearly one hundred cases from life. New York: E. B. Treat, No. 771 Broadway. Parts 7 and 8.

A Plea for the more General Adoption of Antiseptics in Midwifery Practice. By Charles J. Cullingworth, M.D., Obstetric Physician to St. Thomas Hospital.

On the Preventive Treatment of Calculous Disease and the use of Solvent Remedies. By Sir Henry Thompson, F.R.C.S., M.B. Lond., Surgeon Extraordinary to His Majesty the King of the Belgians; Consulting Surgeon and Emeritus Professor of Clinical Surgery to University College Hospital. Third Edition. Philadelphia: P. Blakiston, Son & Co. 1888.

Clinical Lectures on Albuminuria. By Thomas Grainger Stewart, M.D. Edin., etc., etc. New York: William Wood & Co. 1888.

A Manual of Dietetics for Physicians, Mothers, and Nurses. By W. B. Pritchard, M.D. Dietetic Publishing Co., New York.

On the Treatment of Cystic Goitre. By T. Mark Howell, F.R.C.S.E. London: J. & A. Churchill. 1888.

The Diagnosis and Treatment of Diseases of the Rectum. By William Allingham. Edited and revised, with much additional new matter, and numerous diagrams, by Herbert Wm. Allingham. Fifth edition. London: J. A. Churchill. 1888.

Mineral and Thermal Springs of California. By W. F. McNutt, M.D. Reprint.

Report on Hydrophobia. By Charles W. Dulles, M.D. Reprint. Philadelphia: 1888.

Original Articles.

A FEW POINTS IN MACEWEN'S OPERATION FOR THE RADICAL CURE OF HERNIA.

BY HERBERT L. MURRELL, M.D.,

Surgeon to the Curry and the Boston Children's Hospitals.

SINCE the description of Macewen's operation for the radical cure of oblique inguinal hernia appeared in the *Annals of Surgery* in August, 1886, it has apparently grown in favor. My purpose in presenting this paper is to call attention to a few details in the technique of the operation that have been suggested to my mind.

I have operated on eight cases, all of which have been successful as far as heard from. They have not all been unions by first intention, for in two of the cases scrotal abscesses formed. They have been in adults and in children, complicated and simple. In one case a retained testicle complicated the problem of obtaining a radical cure.

Regarding the operation as to permanency of cure, a sufficient time has not elapsed since the appearance of the original operation to warrant any conclusions being drawn. Personally, I feel that at least three if not five years should elapse before a hernia can be said to have been permanently cured.

First, as to what the operation is: it is an attempt to restore the inguinal canal to its normal condition, and the placing of an intra-abdominal pad in apposition with the internal surface of the internal ring. It is distinctly and strictly an operation which was devised and is applicable to oblique inguinal hernia. The operation as applied to femoral hernia is incomplete, in that it does not close the crural canal, and the closure of the crural canal, as suggested by Dr. H. W. Cushing, apparently fills the gap. I have had occasion to close a strangulated femoral hernia by the formation of an intra-abdominal pad, but the case ended fatally from exhaustion.

The intrinsic difficulty which exists in closing a hernial opening is the preservation of the cord and its accompanying vessels, and previous to the appearance of Macewen's operation I had come to believe that the only satisfactory way of absolutely closing a hernial canal would be to enucleate the cord and testicle and close the internal ring by a direct attack on its intra-abdominal surface. This operation I performed in 1884 on a priest who had been suffering for years with a painful hernia that could not be held by a truss, but of course this operation is not applicable to the ordinary patient, from the resulting mutilation.

The indications which have governed me in advising this operation have been: uncontrollable by truss hernia, painful by truss hernia, and in one case I attempted a radical cure where the mental depression coincident with existence of the hernia was very great.

The following points of importance have suggested themselves to my mind as bearing on the technique of the operation:—

- a. The finding of the sac.
- b. The isolation of the sac.
- c. The troublesome hemorrhage and the manipulation of the tissues.
- d. The introduction of the sutures.

e. The dressing.

f. The question of the necessity of truss support after the operation.

a. The finding of the sac. In performing this operation, the strictest of antiseptic precautions have been attempted, but unfortunately have not always been successfully carried out. The patient having been thoroughly anesthetized, an incision of two or two and a half inches has been made directly over the external abdominal ring, great care being exercised to bring the incision directly over the middle of the lozenge-shaped opening and running in its direction. Then I have carefully avoided attempting to isolate the different layers which are ordinarily distinguished as covering a hernia. This I have done by having an assistant take a pair of anatomical dissecting forceps, and I have taken another, and then deliberately we have carefully divided every structure for the whole length of the incision that we have met, the assistant carefully grasping the new structure to be divided in the very depth of the incision, and I grasping the tissue directly opposite to him, and then between the two forceps I have divided the elevated layer of tissue. In this way I go on until I meet a rather thick white layer, which on being divided shows that I have entered a cavity, when I know that the sac has been reached. I never attempt to isolate the sac without opening it, for the recognition of the cavity of the sac is its distinguishing point. Therefore the whole attention of the surgeon should be devoted, from the time that he makes the primary incision in the skin, to the finding of the sac. By this means I feel that I have been enabled to save time.

If I cannot readily distinguish the sac, I allow the patient to partially recover from the ether, and very quickly the sac is distended.

b. The isolation of the sac. When I recognize that I am in the sac, from this time on I prepare it for restoration to the abdominal cavity. Should I find it adherent, as so commonly occurs, I fill the sac, through the small opening that I have made in it, with iodoform gauze, distending it in the same fashion that a mending-ball does the heel of a stocking. Having accomplished this, there is not the slightest difficulty in dissecting out with the point of a knife or the handle of a scalpel the distended sac, and separating it from the cord and its accompanying vessels.

When, however, the sac is filled with omentum, implanted, as it was in one of the congenital cases operated upon, directly on and about the testicle, one has a difficult, tedious dissection before him to carefully separate it from the testicle and return it to the peritoneal cavity. Occasionally I have had to divide the omentum into various parts and return the carefully secured ends to the peritoneal cavity.

When one has a congenital hernia to deal with, the simplest way after carefully exposing the sac is to fill the processus vaginalis with the "iodoform gauze darning-ball," and then to divide the sac into two parts, forming a distinct tunica vaginalis for the testicle, and then sewing up the proximal part of the sac and returning it to the abdominal cavity.

c. The troublesome hemorrhage and the manipulation of the tissues. In the first few cases that I did I had considerable difficulty in identifying the sac, and hence I had once a troublesome hemorrhage

from the vessels that accompany the cord. Further, in pulling on the different structures to make them out, I did an amount of damage to their vitality which should be avoided. In two of the cases I feel quite sure that the manipulation of the tissues, especially the dragging of the testicle out of the scrotum, had much to do with the formation of serotal abscesses. This I believe can be avoided by the "darning-ball" of iodoform gauze."

d. The introduction of the sutures. I can only say that I have tried almost all of the different patterns and forms of needles, and have found that I could place the stitches more accurately, and this is really one of the most important points in the whole operation, by a Ilagedorn needle in a good needle-holder. I have, after carefully separating the sac the whole length of the inguinal canal and for a half an inch around the intra-abdominal surface of the internal ring, placed a stitch in the very extremity of the sac and transfixed it through and through, and brought it out, after traversing the inguinal canal, through the muscles of the abdomen, pulling up the sac inside the abdomen; the suture pulling up the sac in the same way that a Venetian blind is raised. This suture is not fastened in position until the end of the operation, its protruding extremity being caught in position on the abdominal muscles by a pair of pressure forceps. Then I carefully attempt to restore the valve-like form of the inguinal canal by stitching the conjoined tendon with strong silk or stout catgut to the aponeurotic structures of the transversalis, internal and external oblique. I usually place two, if not three, sutures in position, and as I tie them, have the assistant introduce his finger in the canal, and he can then determine how tightly I bring the parts together, and I run no danger of cutting off the circulation in the cord.

e. Dressing. I always consider that the point where the operation proper is finished and the dressing begins is when I have tied the last suture which closes the inguinal canal. Of course, strictly speaking, this is not the case, but it serves to emphasize the importance of the foregoing procedures.

I have in the last cases closed the opening completely, and have not used any drainage-tube; of course this means that I have had to take a great deal of time in carefully rendering the wound perfectly free from fluids. A thorough and effective flushing at the end of the operation of the whole surface of the wound with 1-1000 of corrosive sublimate is, I believe, of the greatest importance. The wound is superficially closed with a continuous catgut suture. The dressing proper is applied as follows: six sterilized gauze pads 6x8x4 are superimposed, covering the wound surface and the scrotal-femoral cleft; this is held in place by a carefully applied gauze bandage four inches in width, just enough being used to steady the dressing in place. Over this is laid a piece of Macintosh, with a hole in it large enough for the penis to protrude; then this is covered in by sterilized sheet-wadding.

This is secured in position by a cravat gauze bandage six inches in width and long enough to form a double spica bandage. Over this is placed another piece of Macintosh, with a hole in it for the penis, and this is secured in position by two safety pins placed on either side of the penis and at

various other points on the abdomen and thighs as may be found necessary.

f. The question of the necessity of a truss. There can be but little doubt that the wearing of an ordinary truss after a hernia operation is open to the objection that pressure on cicatricial tissue is usually followed by gradual absorption. I have never felt quite safe in recommending the entire neglect of a truss in the after treatment of this operation, and have therefore been led to use a worsted truss in much the same way that is recommended by Pye. This does not exert any undue pressure on the cicatricial tissue.

These are a few of the points that I have found of interest in performing the operation, and I can only say that they have been derived not alone from my own experience but from that of my colleagues.

AN IMPROVED METHOD FOR THE RADICAL CURE OF FEMORAL HERNIA.

BY H. W. CUSHING, M. D.,

Surgeon to Out-Patients at the Boston City and Carney Hospitals, and Assistant Surgeon to the Children's Hospital.

My patient was a boy, *æt.* twelve, the victim of a left irreducible femoral hernia of four years' duration, a case in which a radical cure was especially indicated and desirable. How was this result to be obtained?

A review of the literature of this subject (as thorough as possible with the time at my disposal) yielded little satisfactory information. Descriptions of the technique for inguinal hernie are readily found, but the subject of the femoral variety is usually, except perhaps by Wood (*Brit. Med. Jour.*, June 27, 1885, p. 1280), treated in too concise a manner to be of much value. Even Macewen, whose classical description of his operation for inguinal hernia is so wonderfully clear as to leave no possibility for doubt in regard to the details of his method, dismisses the crural lesion in a most unsatisfactory way, stating (*Brit. Med. Jour.*, Dec. 10, 1887, p. 1263) that he had employed the principle of forming with the sac an intra-abdominal pad in sixteen cases; that in cases where the vitality of the intestine was doubtful it was not performed; and also in a number of cases where firm adhesions of the sac, especially to the femoral vein, rendered it impossible.

Such statements are not of much practical value to one about to operate on such a case as above described.

I solved the problem for myself as follows; and although too soon to make any positive statement in regard to the ultimate success of such a procedure, its immediate result is all that can be desired.

Operation, May 14, 1888. Anæsthetic, ether. A straight incision (Fig. 1), extending from Poupart's ligament over the crural ring to just below the saphenous opening, and dividing the superficial tissues exposed the sac, which, when examined through an exploratory incision, proved to contain omentum. The sac itself was adherent to the edge of the saphenous opening, especially along its upper border, where its attachment was quite firm. The usual manipulation of the sac failed to separate it. In order to overcome this complication, I decided to explore the sac from above. Therefore the upper

end of the incision was prolonged outwards parallel to and one half inch above Poupart's ligament (Fig. 1,

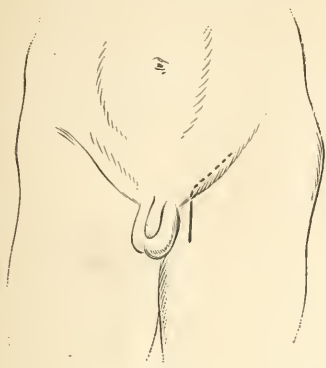


FIG. 1.

dotted line) making the total length of the operative wound three inches. By dissecting through the subjacent tissues between the spermatic cord and the outer pillar of the external abdominal ring, the sac was exposed as it entered the crural ring. It could then be freed from within outwards, by gentle traction, manipulation and dissection; and after division of the adhesions to the saphenous opening became perfectly reducible, leaving the femoral vein exposed throughout this entire distance. The sac was now opened, and with scissors and scalpel, the omental adhesions to its inner surface were with considerable difficulty divided. The omental mass, measuring two inches by one and one-half by one and one-half, was then ligated, cut away, its stump pushed back into the peritoneal cavity, leaving the sac resting free and empty in the crural ring. A continuous suture closed the sac, which was then folded on itself and fixed within the abdomen à la Macewen. The suture effecting this reduction passed through the crural canal and upwards to the surface through the transversalis fascia, conjoint tendon, and aponeurosis of the external oblique (Fig. 2). The crural ring was next closed by suturing Poupart's ligament with a

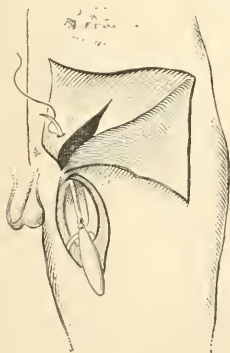


FIG. 2.

"quilted suture" to the pubic portion of the fascia lata and the fascia covering the pectineus muscle, the femoral vein being protected with a retractor, (Fig. 3). When secured, the opening apparently became impervious, the folded sac forming a pad which was firmly fixed against the internal opening

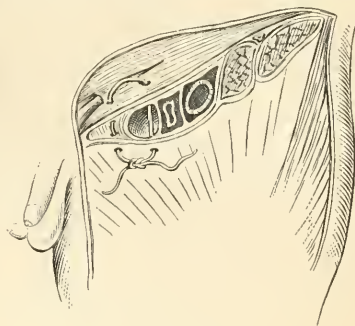


FIG. 3.

of the crural canal, while the suture tightly closed the external aperture. The pubic and iliac portions of the fascia lata forming the margins of the saphenous opening were next sutured in a manner similar to that by which Macewen causes the external pillar to overlap the conjoint tendon in the inguinal operation (Fig. 4). Operation wound

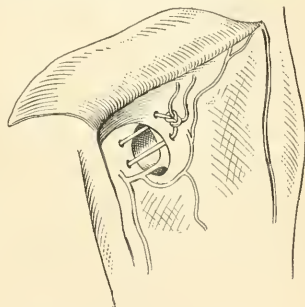


FIG. 4.

closed. No drainage. Aseptic dressing. All sutures and ligatures aseptic silk.

The patient remained in bed two weeks, and with the exception of a slight attack of tonsillitis on the ninth day, his condition was practically normal during this period. On the twelfth day following the operation the wound was dressed for the first time. A narrow red line alone marked the seat of the operation. Dressing dry, slightly stained on its inner surface at point of contact with the wound. Complete union by "first intention." An indurated mass could be felt just above Poupart's ligament, at the point where the sac had been secured. No tenderness. For the next four to five weeks a pad and bandage was worn, but its value was doubtful, and I think, from the careless manner in which it was applied, that the non-recurrence was more due

to the effectiveness of the operation than to any especial protection derived from the bandage. It was shortly afterwards rejected entirely by the patient, and since that time he has had no support.

His present condition shows how effective the operation has been. The canal is now as firmly closed as it was immediately after the operation nearly six months ago. There has not been the slightest evidence of recurrence notwithstanding the patient is an active, restless boy, who has been allowed to follow his own inclinations unrestrained, and has worn no support. He is entirely relieved, and should his condition continue as at present (there is no reason to suppose that it will not) I think this can be considered a radical cure. This method of treating femoral hernia is, as far as I have been able to ascertain, one which combines all the advantages of the "Macewen pad" with the additional security of an effective closure of the superficial structures.

OBSERVATIONS ON THE TIME AND AMOUNT OF ETHER REQUIRED TO PRODUCE ANÆSTHESIA.

BY ROBERT W. LOVETT, M.D.

THE following observations were made in the hope of determining roughly the amount of ether necessarily used to bring a patient to complete anæsthesia, and to demonstrate, if possible, the beneficial effect of using small amounts of ether, in regard to the after-effects. The patients represent a series of sixty consecutive operations of all sorts performed at the Boston City Hospital while the writer was interne, major and minor, upon all classes of patients. Squibb's ether was used from a graduated bottle, and the amount poured on the sponge is in every case, of course, much in excess of the amount really inhaled.

Several forms of inhaler were experimented with, and the one finally settled upon as the most useful was a cone made of a towel folded over a newspaper containing an ether sponge. A towel cone alone collapsed when it was wet, and the straw cuff so often used admitted too much air to the patient with the ether. The mixture of air and ether is more intoxicating than ether alone, and a constant dilution of the ether with atmospheric air was found to lead often to the patient's prolonged intoxication, lasting several minutes. With an airtight apparatus such as the newspaper and towel cone it was possible to administer pure ether or just what admixture of air the etherizer chose; and the etherizations with such an apparatus were much more satisfactory than any others.

The largest amount of ether used in any one case to bring the patient to complete surgical anæsthesia was four ounces, and that amount had to be used four times in the sixty cases. The smallest amount required was half an ounce, in the case of an exceptionally good child, and seven other times only one ounce was needed. In fact, the average amount of ether used in the sixty cases was only two ounces. The average amount used in the cases of six children was only one ounce.

With regard to the time required to completely anæsthetize the patients, the longest time taken in any case was fifteen minutes, in the case of a

lady who was extremely nervous, where the greatest care was taken to etherize her without a struggle. Twice it took thirteen minutes and quite often ten or eleven. The shortest time taken was two minutes in the case of two children etherized by force, and three minutes in the case of several adults etherized forcibly also. The average of the sixty observations gave seven minutes as the time necessary to produce complete surgical anæsthesia.

In general the attempt was made to etherize the patients without the use of force, and the ether was applied very carefully until the trachea became accustomed to it, and ceased being much irritated by inhaling the vapor, when the cone was placed nearer the nose, until finally the patient inhaled pure ether. In this way twenty-two patients reached complete anæsthesia without the least struggle. In eleven patients the forcible choking method was tried, and the ether was applied in full strength almost at once. In the twenty-two etherizations by the gentle method, the average time required for anæsthesia was 9.3 minutes, while by the forcible method it only took 4.4 minutes. In the same way the average amount of ether used in the gentle method was two and one half ounces, while the forcible method only required one and one half ounces. But although by the forcible method the patient was etherized in less time with less ether, the results were much less satisfactory, for choking and struggling during the operation were much more common than when the gentle method was used. The application of the strong ether at once to the trachea seemed to excite a flow of mucus, which continued through the operation, and the patient was at the same time necessarily somewhat asphyxiated by this method in the beginning, and what seemed to be complete anæsthesia proved only too often to be a mixture of anæsthesia and asphyxia, and a few breaths of air would often restore the patient to a violently struggling condition. In general, a patient who was etherized without a struggle almost invariably gave little or no trouble during the operation, however long it lasted, whereas a violent struggle was often followed later in the operation by choking, persistent rigidity, and general difficulty of etherization.

As a rule, the operations were short ones, and the table shows the time that the etherization lasted, and the average amount of ether consumed during the whole etherization.

Operation lasted,		Average amount of ether used,	
10 minutes,	7 times.		
15 "	7 "	"	2½ oz.
15 "	19 "	"	3½ oz.
20 "	7 "	"	3½ oz.
25 "	7 "	"	5 oz.
30 "	10 "	"	6 oz.
35 "	4 "	Amount of ether used, 3½, 4, 5, and 10 oz.	
40 "	1 "	"	7 oz.
45 "	2 "	"	7.7 oz.
60 "	2 "	"	8.8 oz.
90 "	1 "	"	11 oz.

It will be seen that in general the amount of ether required for each additional five minutes was about one ounce.

In forty-three of the patients the after-effects were carefully noted, and in twenty-eight there was no vomiting either during or after the operation, and no uncomfortable sensations beyond a moderate amount of nausea and dizziness. In eleven more the after-effects were slight: the patient vomited

once or twice, but there was no prolonged nausea or vomiting; while in six the after-effects were long continued, and there was much vomiting. The remaining patients were not noted simply from carelessness. If the cases had been unusually severe, the after-effects would have been likely to be remembered. In general, the after-effects were least when the smallest amounts of ether had been inhaled, but personal idiosyncrasy evidently counted for a good deal: two of the patients who had the most trouble afterward inhaled only four and five ounces.

The average amount of ether taken in the whole operation by patients who had no after-effects was four and a half ounces; the average amount by patients who had some slight vomiting was a little larger, five ounces; while in the patients who had prolonged vomiting it averaged seven ounces.

It is of course unwarrantable to draw any extensive conclusions from so small a number of observations, yet the series was extended enough to show, if it needed to be shown, the great advantage that it was to administer as small an amount of ether as possible in order to avoid prolonged after-effects, and also in showing the advantage possessed in etherizing patients gently rather than by force. The series contained no mishap of any sort.

Clinical Memorandum.

TWO CASES OF LAPAROTOMY FOR EXTRA-UTERINE PREGNANCY.

BY M. H. RICHARDSON, M. D.,
Surgeon at the Massachusetts General Hospital.

CASE I.—TUBAL PREGNANCY; RUPTURE DURING THE THIRD WEEK AND HÆMORRHAGE INTO THE ABDOMINAL CAVITY: LAPAROTOMY; RECOVERY.

The following case illustrates the difficulty often met with in making a diagnosis in certain obscure affections of the abdominal cavity, as well as the advantage in such cases of early operative measures.

"Jennie E. P.,¹ æt. thirty-seven. General health good, though never very strong or robust. No catamenial disturbances. Married at seventeen, and had a miscarriage at six months, a year after marriage. Since this miscarriage, nineteen years ago, has never been pregnant. Catamenia regular of late. Last flow three weeks ago. On Sunday morning, July 1st, having felt in usual health during the night, she was suddenly seized with very severe pain, sharp and darting in character, in lower abdomen. After lasting three or four hours the pain disappeared, and patient slept well that night. She was able to do her usual work the next day. Tuesday morning, July 3rd, the pain again returned, and has continued ever since. Patient has felt faint and sick, with nausea and vomiting. Bowels moved three days ago, since then constipated.

Dr. F. B. Harrington saw this case in consultation with Dr. Schofield early on the morning of the 4th, and advised her to be taken at once to the hospital, her condition being such as to make an exploration probably necessary in a few hours.

On entrance she was found to be pale, with expression of anxiety; temperature 97°; pulse 80

and weak; respiration 30. Chest negative. *Abdomen not distended*, some dulness on percussion in right iliac region, but no resistance or tumor to be felt. On vaginal examination tenderness to right of uterus, with an indistinct tumor close to uterus.

Patient vomited repeatedly during the morning of the 4th; vomit greenish and offensive. Pulse grew weaker in spite of stimulants, and the patient was rapidly becoming collapsed.

A consultation was held at noon, at which the prevailing opinion was in favor of immediate exploration by laparotomy. The diagnosis was considered very doubtful, but I think there was no suggestion made by any one present of pregnancy. The history was absolutely negative, and the only probable condition that suggested itself was hæmorrhage from some unknown cause.

Inasmuch as there was some evidence from physical examination pointing to the right ovarian region, I decided to make the incision in the right linea semilunaris, which was done three hours after entrance under ether anaesthesia and bichloride of mercury solution irrigation.

On going through the peritoneum, with the greatest care not to wound an underlying coil of intestine, there was a spurt of arterial blood so profuse and alarming that I thought for a moment that I had opened an abdominal aneurism. In a few seconds, however, clots of blood began to escape, and I saw at once that the hæmorrhage had been going on for some time, and that this sudden outpouring of blood was simply the emptying of the distended abdominal cavity. Before this operation, it will be noticed, there was no distention of abdomen observed. Yet there was sufficient pressure exerted by the escaped blood to send a stream of blood half an inch in diameter several inches into the air, — a most alarming incident, certainly, when unexpected.

On enlarging the opening to about five inches, beginning two inches above Poupart's ligament, the right fallopian tube was found with an enlargement about the size of a large olive, in which there was a rent admitting the finger tip near the ovarian extremity, from which blood was rapidly oozing.

It was very easy to bring the tube with its contents, including the right ovary, far enough up to apply Tait's knot, after which the whole was removed with the actual canterly.

The wound was closed with one row of silk sutures, after careful cleansing of the abdominal cavity, and the usual antiseptic dressings were applied. Patient made a rapid and uneventful recovery, and was discharged well, August 8, 1888.

Dr. R. H. Fitz examined the specimen and reported that it was a case of ruptured tubal pregnancy.

I think it is quite justifiable to say that this woman would have died of hæmorrhage in a short time if nothing had been done. The diagnosis was involved in obscurity and doubt, no one present having even mentioned the real cause of the symptoms. Prompt interference in this case saved a life, I have no doubt, where delay would have been followed by death either from hæmorrhage or general peritonitis. I have reported this case not only because it is in itself unusual and interesting, but to emphasize again the necessity of early exploration by laparotomy in obscure abdominal affections.

¹ Mass. Gen. Hosp. Records, vol. 236, p. 227, July 4, 1888.

CASE II. — EXTRA-UTERINE PREGNANCY; DEATH OF FŒTUS AT ABOUT EIGHTH MONTH; LAPAROTOMY AT TENTH MONTH; RECOVERY.

Mrs. B., æt. twenty-six. First seen by me in consultation with Dr. Graves, of Woburn, May 19, 1888.

She had always been well, and of good family history; was married nine years, and had never been pregnant before.

About September 1st, 1887, began to flow every day. Previous to that time menstruation had been regular to a day. The last natural flow had been August 1st. The next period came at the right time, but it didn't seem to be quite right. There was a good deal of blood, which was increased by exertion. No pain. This unnatural state of things continued, and about October 1st she began to have nausea and vomiting, which was persistent and severe. The menstruation has not been regular since October, but there has been a monthly disturbance in addition to quite a show most of the time.

During this period she got to be quite comfortable, and was able to be about her work for two or three months. Three or four months after August 1st began to increase in size; didn't feel any motion till about five months from August 1st, but was very positive that she did feel it then, though it was not very strong. Movement lasted about two months, and then stopped after a "heavy sick spell," with vomiting and chills. At this time Dr. Graves found her cold and pulseless and collapsed generally, with intense pain in the bowels and over the left hip.

The breasts were enlarged in the early part of the illness. She continued to enlarge in the abdomen and breasts, which were surrounded by a well-marked areola, and had engaged Dr. Graves to attend her in her expected confinement.

March 11th, 1888, was taken with intense pain and severe hæmorrhage. A day or two later the breasts became a good deal larger, but soon flattened out and have never become filled since.

April 2nd, Dr. Graves was called again to a similar attack. There had been quite a hæmorrhage, probably a quart in all of clotted blood. Two days later another passage of clotted blood as large as the first.

During the night of April 2nd, while Dr. Graves was present there were regular pains, but nothing came. Up to this time there had been no doubt on the part of anyone that it was a case of pregnancy.

Between the attacks of March and April the condition of the stomach improved greatly, and up to the time of my visit was quite good.

At the time of the expected confinement, nothing suggesting decidua was passed.

I found a large tumor of the abdomen, fluctuating and symmetrical. There was no resisting mass to be felt in the tumor. The abdomen was tympanitic in the flanks and epigastrium. Vaginal examination showed that the uterus was not enlarged and did not move with the tumor. In spite of the history of the case pointing almost unmistakably toward pregnancy, I was of the opinion that it was a case of simple unilocular cyst of the ovary, with unusual history and complications.

The patient was admitted to the Massachusetts General Hospital, June 20, 1888, and examined by several of the physicians and surgeons of the staff, among whom there was some difference of opinion as to the diagnosis. There was, however, no question as to the advisability of exploration.

June 22, 1888, I made an incision in the linea alba between the physicians and pubes three inches in length, through which I came down upon a vascular tumor with apparently a distinct muscular wall seemingly everywhere adherent, the whole suggesting strongly a malignant growth of the ovary. So little did the appearance suggest anything that could be removed, that I asked Dr. John Homans' advice as to the advisability of making an attempt at removal. He favored further exploration, and I therefore carried the incision down through the mass till I came upon a cyst in which I could feel unmistakably the parts of a large fœtus. The cavity of the tumor contained a large quantity of chocolate-colored fluid.

In enlarging the incision sufficiently to extract the child I opened a portion of the peritoneum between the sac and the uterus which had been entirely cut off from the upper part of the abdominal cavity, and which extended downward as far as the posterior cul-de-sac.

The placenta was found to be placed with its centre opposite the bifurcation of the abdominal aorta, and was everywhere adherent to the intestines and posterior abdominal wall; it was soft and friable, and I succeeded in detaching without hæmorrhage a large part of it, especially that portion which extended downwards into the true pelvis.

Drainage was provided for by placing a large tube through the posterior cul-de-sac into the vagina. It was thought best to do this because there was so much of the placenta remaining to be gotten rid of; though the opinion was expressed by some that it would have been better not to have run the risk of sepsis through vaginal contamination. The other end of the tube was left in the lower angle of the abdominal wound.

The patient made a good recovery, and was sent home in August with a small sinus still discharging from the abdominal wound. A month later she reported at the hospital for examination, very much improved in general health and appearance, and with the abdominal wound practically well.

The most important point in this case was the treatment of the placenta. Death has usually been due to hæmorrhage from efforts at detachment, or from septicæmia from long-continued absorption. I believe that moderate effort should be made in these cases to remove the placenta, and, that failing, a drainage-tube should be passed through from above out the vagina, through the pouch of Douglas.

— At a meeting of the Central New York Medical Association, at Rochester, November 20th, Dr. E. M. Moore, sen., reviewed at some length, and in a most interesting manner, a portion of his life-work as a surgeon, confining himself to his labors on the upper extremity.

A CASE OF APPENDICITIS IN A CHILD: OPERATION; RECOVERY.

BY ROYAL WHITMAN, M. D.,

Surgeon to the Orthopedic Department of the Boston Dispensary.

On Saturday, July 16th, 1888, a boy of seven, having been in perfect health, on awakening after a restless night, complained of pain in the right side and of difficulty in moving the right leg. On Sunday he was worse; the pain more constant and severe, with much tenderness in the right flank. An enema was followed by two free movements of the bowels, he cried all night with pain, and on Monday I saw him. The patient appeared in fair condition, the abdomen not markedly swollen or tympanitic, the right inguinal region extremely sensitive to pressure, dull on percussion, and on palpation a round, hard tumor about the size of an orange was apparent; pulse 110, temperature 101°. The treatment was rest in bed, liquid diet, and sufficient morphine to control the pain, with a very small amount of which he was made comfortable for the two following days, with but little change in condition. On Thursday Dr. H. W. Cushing kindly saw him with me, and it was decided to wait another day for a change in the symptoms either for better or worse. On the following morning he was much worse, pulse 120, temperature 102°, the abdomen swollen and tympanitic, the tumor somewhat larger, and better defined. Some delay was necessitated in procuring assistance, and on our arrival the mother informed us that in the interval the boy complained of such intense pain and his abdomen became so swollen that he could not breathe, so that in desperation she had given him a large enema, which had brought away foul-smelling shreds and white matter, which she had thrown away; a history of spontaneous opening of the abscess. An examination of the tumor showed no change in its outline; the temperature had gone up to 103.1°, and the pulse to 130; the patient was in a drowsy, stupid condition, from which he could be aroused only by the pain caused by examination. Some difficulty was experienced in deciding as to the proper treatment of the case. The probability of a spontaneous opening contra-indicated an operation, and the surroundings were unfavorable to its after treatment. On the other hand, the patient was much worse, and it was decided that delay would be dangerous, especially on account of the time required to procure assistance in case the symptoms became more urgent. Accordingly, with the assistance of Drs. Cushing and Peckham the operation was performed, an incision about three inches in length being made over the outer third of Poupart's ligament. On dividing the abdominal muscles, the adherent wall of the abscess was opened, and about an ounce of foul pus evacuated. The cavity, which was about the size of a hen's egg, was thoroughly washed out with hot water, during which a seed, apparently of an orange, came away, two drainage-tubes were inserted, and the remaining space packed with iodoform gauze. The after history of the case is uneventful; the temperature fell at once to normal, the packing and tubes were removed on the fourth day. During the absence of his mother, the child walked about the house on the fifth day; was

dressed and on the street on the tenth day, when he was practically well, sixteen days after the first sign of the affection, though the wound did not completely close till a week later. He has since remained without a symptom to remind him of his illness. Several days after the operation the mother noticed a small amount of blood in the first dejection, making it probable that there had been an opening into the rectum which had immediately closed. The particular interest in this case is, I think, in the question as to whether or not, under the circumstances, an operation should have been performed. It might have been better to have made an examination by the rectum with the design of enlarging a possible opening. When, however, ether had been given, and the abdominal walls were relaxed, the tumor was found to fill the lower half of the right abdomen, so that the indications for an external opening seemed clear. In any event the result under a different treatment could hardly have proved more satisfactory than under that pursued.

A CASE OF MACEWEN'S OPERATION
(FOR THE RADICAL CURE OF INGUINAL HERNIA)
IN A GIRL, RESULTING IN THE CURE OF HABITUAL INCONTINENCE OF URINE.

BY ROYAL WHITMAN, M.D.

This patient, a girl of eleven years of age, was brought to me last spring, more especially on account of an antero-posterior curvature of the spine. In addition she had a right inguinal hernia about the size of a small lemon, which had existed an indefinite time, and was the occasion of more or less discomfort; it was increasing in size, no attempt having been made to control it with a truss. There was also a history of habitual incontinence since infancy, making it impossible, as her mother expressed it, to keep her clothes in decent condition. As treatment by drugs had proved of little service, a radical cure of the hernia was advised, in the hope that the shock of the operation, with subsequent confinement to bed, might relieve this condition. On April 9th, 1888, Macewen's operation was performed, with the assistance of Dr. George Haven. The patient was about as usual on the eighteenth day without support, complete control of the urine having been established. Since then, her mother says, she has improved greatly both mentally and physically.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

G. H. MONKS, M.D., SECRETARY.

MEETING, Wednesday evening, November 7th, at 8 o'clock. Dr. J. C. WARREN presiding.

The Chairman having declined renomination, Dr. E. H. Bradford was, on the motion of Dr. M. H. Richardson, elected by acclamation Chairman of the Section for the ensuing year.

Dr. M. H. RICHARDSON reported

TWO CASES OF LAPAROTOMY FOR EXTRA-UTERINE PREGNANCY.¹

Dr. J. W. ELLIOT said: I congratulate Dr. Richardson on his success. I think both cases are

¹ Page 519 in Journal.

brilliant. The second case was evidently one of abdominal pregnancy. The only other operation of this sort that I have seen was done by Schroeder. In this case the patient died. I think the mortality in these operations is very high, because of the great danger of septic infection. If there is no septic infection, the abdominal pregnancy usually goes on to the hardening of the fetus, and operation is not necessary. I would like to ask Dr. Richardson what the final result was: how much cavity was left?

Dr. RICHARDSON: There was a very small sinus at the end of the abdominal wound. The vaginal tube was left in a few days, to see what would happen. The result was good. Through this long tube there was constant irrigation, corrosive sublimate being used. The patient had no septic trouble whatever. The temperature immediately fell, remaining perhaps a degree or two above the normal.

Dr. ELLIOT: I saw the sac, and thought it an extremely difficult one to keep sweet, as the placenta was partly torn off and ragged. The sac was very irregular in every direction. I am surprised that it did so uninterruptedly well.

Dr. CAROT: Was there any appearance of suppurative to account for the temperature?

Dr. RICHARDSON: The temperature was about 101° the day before the operation. After the operation it speedily fell. There was a hectic condition at the first time I saw the patient; but no evidence of suppuration.

Dr. NELSON: I would like to ask if any portion of the sac was removed? if so, how much?

Dr. RICHARDSON: There was no attempt to remove the sac, though I did remove about half or two-thirds of the placenta. I think any further attempts to remove the placenta or the sac at all would have been bad practice. I would like to ask Dr. Elliot if the cases he referred to where auto-infection was possible were cases where the fetus was dead?

Dr. ELLIOT: I do not remember. There are two distinct classes of cases: (1) where the fetus gradually dries up and becomes stone. It is generally considered by the best authorities that where these cases give no trouble there is no occasion for interference; (2) where the fetus has become macerated, causing infection and death by septicaemia.

I have known of several such cases as this. If you can open one of these sacs without opening the peritoneum, the result is much more favorable, as it would be in any abscess. I thought the sac in this case of Dr. Richardson's was principally thickened peritoneum. The general irritation of the advancing process had thickened the peritoneum outside of the sac which held the amniotic fluid originally. I had an impression that in this case there was suppuration. The temperature was high; the patient looked hectic.

Dr. RICHARDSON: There was no bad odor; the fetus was macerated.

Dr. ELLIOT: The maceration of the fetus is, I take it, a process different from that where the fetus becomes hardened like stone.

Dr. NELSON: I saw a case last spring that simulated this one. The catamenia had been absent,

yet there was reason to think the woman was not pregnant. She had never borne children. When I saw her she was in a state of collapse. Temperature low, some pain, some nausea; but this class of cases was unfamiliar to me at that time, and I did not make the diagnosis. At the autopsy a sac was found, and an abdominal pregnancy between the second and third month. The abdominal cavity was filled with blood which came from the rupture of the sac. Had the diagnosis been made and an operation performed, possibly the woman could have been saved. It was not so easy a case for operation as the case reported, because it was not tubal, but abdominal, and the sac more the nature of that described in the second case, which went on to full term. In these cases an early operation is advisable certainly.

Dr. JOHN HOMANS, 2nd: The point in these cases lies, I think, in recognizing the condition early. It seems to me, if the condition were recognized earlier and an operation performed, the high mortality would be very much diminished. There is a true autoinfection which takes place in almost every case. I have seen three operations, and in each case there had been some slight fever before the operation. In one case the fetus was not only macerated, but separated, so that the finger introduced in the cyst struck sharp spicule of bone; and the fluid in which the bone floated looked and smelled like pus. The patient had had a high temperature for some time; and the operation done with the idea of encountering pus rather than extra-uterine pregnancy.

I think the general opinion now is that it is a matter of doubt whether there is a true abdominal pregnancy; that an extra-uterine pregnancy is most probably either tubal, tubo-ovarian, or tubo-uterine; that a true abdominal pregnancy, if it occurs at all, is extremely rare.

Dr. ELLIOT: It seems that in these cases of abdominal pregnancy, while the fetus is alive, the difficulty is in freeing the placenta, which very often is glued to some very important organ richly supplied with blood. If you pull the placenta off, it is almost impossible to stop the bleeding. If the fetus had been alive in Dr. Richardson's case, probably the only way he could have stopped the hemorrhage would have been to tampon the whole pelvis with iodoform gauze. If the placenta had been in the tube, or just oozing out, you might tie the tube. That is a very simple thing to do, but if the placenta has formed on some organ in the abdominal cavity, it is not so simple. One treatment for that sort of placenta is to sew the sac to the abdominal wall, and wait for it to slough out. The case I saw Schroeder do, in which the fetus was living, died of hemorrhage. He had made the diagnosis of abdominal pregnancy,—the fetus could be distinctly felt,—and waited till labor pains came on, or a general disturbance that suggested that the fetus was alive. He waited with the idea that at that time the placenta would be more easily separated; I suppose on the principle that a ripe apple falls easier. However, in spite of every precaution, the patient died of hemorrhage from the site of the placenta. The site of the placenta in Dr. Richardson's case illustrates the difficulties that might have occurred. If that child

had been alive, I think the operation would have been one where the mortality is 90%. If you leave the placenta, you have to wait for it to slough out (I speak of the living child), and that, in case of a placenta at full term, is a pretty serious thing in a fresh case. It would be different in an older case, where adhesions protected the general peritoneal cavity, and where there was no blood of any consequence.

DR. NELSON: The difficulty of removing the placenta occurred to me in making the autopsy in the case I mentioned. In this case it would not have been a very difficult thing to remove the placenta. An early diagnosis is, of course, very essential.

DR. RICHARDSON: In conclusion I would say that these cases are entirely separate from each other. No matter what the theory of abdominal pregnancy may be, the condition that meets the practical man in the case I first reported is, I think, the important thing. I believe that Tait has thirty-five successful cases of extra-uterine pregnancy, with two deaths—a number of them viable children. I think when you have an acute abdominal case, where the woman is in a very serious state of collapse, with a low temperature, there probably is a hemorrhage which requires some interference; if a high temperature, there is apt to be general peritonitis, perforation, or something of that sort. The practical deduction is that we should not delay, for the danger of an exploratory laparotomy is almost nothing; and in every case where I have gone into the abdomen of a patient suffering with these acute symptoms, I have found something to be remedied. The experience of the other surgeons at the Massachusetts General Hospital is the same.

DR. ROYAL WHITMAN reported

A CASE OF APPENDICITIS IN A CHILD: OPERATION;
RECOVERY;¹

and then showed the patient.

DR. ROTCH: I should like to ask how long one ought to wait in these cases? Last summer I had a case almost identical with Dr. Whitman's in the general symptoms and also in the tumor, which was well defined in the right inguinal region. The patient was a boy 10 years old. I waited two days, and the symptoms at the end of forty-eight hours improved rather than grew worse. The child entirely recovered. I do not think this to have been a case of simple fecal accumulation.

DR. WHITMAN: In the case I have reported I think the operation might have been done several days earlier. Apparently the child was doing well—not very feverish and not in great pain. On opening the abscess it was plain it might have been opened several days before just as well. The operation was done on the sixth day.

DR. CABOT: I remember distinctly two cases in which there was a distinct tumor perfectly defined, which under the expectant plan entirely disappeared. It seems to me that as long as the patient is improving or not getting distinctly worse, if the temperature is not very high it is perfectly proper to wait, but to be in readiness to operate immediately on a sudden return of symptoms. The danger in these cases is that if pus does form the abscess may suddenly open, and if the surgeon

is not at hand the patient's chances are lost. The reason for waiting is, that in a great many of these cases the hard tumor, which is a wall of fibrinous exudation in the peritoneum, surrounds the pus completely—an exudation which perfectly absorbs afterwards if let alone. And the only way to tell whether there is pus is, I think, in the absence of collapse, by the continuance of the high temperature. In connection with this foreign body that Dr. Whitman found in the abscess and has shown to us, I would speak of three cases showing the way in which the appendix apparently acts as a trap to remove foreign substances from the intestine. I have seen three cases in which pins have been discharged from this region, about the cæcum. The first case was a young woman who swallowed a pin when five years old. When she was twenty years old she had an abscess in the right flank that finally opened and discharged the pin. Another was a child who had swallowed a pin two or three years previously; and the third case a woman who swallowed a pin ten years before she had the attack of appendicitis. In each case the pin was discharged from an abscess in the right flank. In the case of the child I opened what I thought to be a perinephritic abscess. Two or three weeks afterward the pin presented itself at the orifice and was picked out.

DR. RICHARDSON: I think it is best to bear in mind that these cases are of two classes clinically: (1) cases with general peritonitis, with distention and no tumor; (2) cases with a distinct tumor. I have seen once or twice a week for several weeks a patient with a large hard tumor in the region of the vermiform appendix. The patient has had five or six attacks where delay has been followed by diminution in the size of the tumor. I have reported several cases where the symptoms entirely subsided with rest in bed. I have operated on several where evacuation of pus was followed immediately by recovery. If we have a case, like one I saw the other day,—a boy with great distention of the abdomen, where it was impossible to make out by rectal or any other examination any hardness or tumor, I think it is very important to operate immediately if you are going to operate at all, and even then the prognosis is extremely bad. In a case where there is a tumor and no general peritoneal infection, it seems to me that one is not justified in waiting, if the symptoms are getting worse, if the temperature is rising, or if there is any evidence whatever of any general constitutional infection. I think we meet with cases where objection is made to a laparotomy, because so many patients get well without it. A great many cases do get well, but I think they all belong to that class where the general peritoneal cavity is not easily infected, where the vermiform appendix is seated anatomically behind the cæcum and out of the way of the general cavity. I believe, if there is a distinct tumor and the constitutional symptoms rather more than moderate—temperature 103° or 104°—that it is best to go in early and not even wait the two days that Dr. Rotch suggested. I operated on a child in my service at the hospital, which I wanted to leave to Dr. Warren, whose service followed mine. The temperature was 103°, and it did not seem wise to postpone the operation

¹ Page 551 in Journal.

even twenty-four hours. In this case the evacuation of one ounce of pus was followed by immediate recovery. I think on the other side we constantly see cases where an operation is absolutely valueless. I remember a case of last year where there was an unmistakable tumor in the right lower quadrant, where incision failed to find anything whatever. I operated myself in one case where I used the aspirating needle and got pus, as I thought, but found that the needle went into the intestines and got contents resembling pus. I think each case should be judged on its own merits. It is extremely difficult to lay down any rule.

DR. WHITMAN then reported a

CASE OF MACEWEN'S OPERATION (FOR THE RADICAL CURE OF INGUINAL HERNIA) IN A GIRL, RESULTING IN THE CURE OF HABITUAL INCONTINENCE OF URINE;¹

after which he showed the patient.

DR. H. W. CUSHING read a paper entitled

AN IMPROVED METHOD FOR THE RADICAL CURE OF FEMORAL HERNIA.²

The patient was shown.

DR. H. L. BURRELL read a short paper on

A FEW POINTS IN MACEWEN'S OPERATION FOR THE RADICAL CURE OF HERNIA,³

and showed some patients in which this operation had been done.

DR. MARCY: The essentials of my operation are the obliteration of the sac by its complete removal and the closure of the internal ring. After opening the sac, the introduction of two fingers in my experience has been ample to guide in its dissection and to lift it in such a way from the tissues that you can thoroughly hold it in control. I don't object to the rough manipulation of the sac, for the very reason that it is to be removed. The removal is accomplished at the internal ring by sewing at its very base with the continued double tendon suture, and then the sac is cut off near the double line of sewing, and the peritoneum is then, as I believe, left thoroughly smooth on its inner surface. There is no depression for the future catching or lodgment of the internal abdominal contents. The next step of the operation is the refreshment of the pillars of the ring. The internal ring is closed by a very carefully placed double suture in the same way, *i.e.*, using a needle having its eye near its point and guiding it with the finger in the ring until it has been as nearly closed as is safe. Then the continued double suture is used further to sew down over the cord as carefully and closely as the judgment and experience of the operators will warrant. When this layer has been completed the ends of the suture are either tied in a single knot and cut off or else continued in the third layer, which (I always like to emphasize) closes in the same way the external deep tissues to make the external ring, and then the superficial tissues are closed by the continued buried tendon suture, which I have adopted within a year. It is what ladies call a "blind

stitch," *i.e.*, the deep layer of the cutaneous surface is sewed from side to side so that the superficial layers of the skin are absolutely approximated without a vestige of stitch in sight. Each stage of the operation is conducted under antiseptic methods. Generally I like irrigation with a solution of 1-2000 corrosive sublimate as well as 1-1000. The skin must be thoroughly dry before collodion will become firmly adherent. I dust over a little iodoform to make sure that the drying is absolute and complete, and then I cover the wound with iodoform collodion strengthened by a few fibres of cotton. This is the dressing. There is no external pad applied. With this dressing the patient, in my later cases, is not absolutely kept in bed. One of my last cases of operation, that of a brother physician, was up every day; and this specimen (specimen exhibited) which was removed shows a considerable portion of omentum and sac, it being a recent scrotal hernia with omentum adherent at the base of the scrotum. Here is another specimen lately removed by myself. For four years the man had had a confusing tumor. He had once or twice hæmatocele; had been tapped by one or two besides myself; but the cause of the hæmatocele was unknown to us all. He had above it a large, thoroughly fixed, firm tumor about the ring, and, above that, what I supposed to be an omental hernia. On opening the scrotal sac, which we did first, it was clearly shown that the testicle was diseased, and the testicle itself was removed. Then there followed an extension of the opening into the hernial sac, and this large mass of omentum was sewed across by the continued suture because the omentum was thoroughly compressed in such a mass that it seemed hardly safe for its return. It was closed and sewed across in the way mentioned. The result I am happy to exhibit. (Patient here shown.) So far as I have been able to follow cases, a large majority of them have remained complete cures. I have operated on hernias after this method about twenty years. It is quite a period since I have used trusses after operation.

DR. CHEEVER: It would be obvious to any one that in the male the inguinal canal, cord, testicle are the great obstacles to the cure of hernia; and if the testicle should be removed and the whole thing shrink up we should gain a great deal faster. Castration for the cure of hernia was largely practised in France before Paré's time. The government finally interdicted it as "destroying too many subjects for the king's armies." Ambrose Paré invented the metallic suture for hernia. He calls it the "*punctum aureum*," or "golden stitch." He sewed up the ring somewhat in the manner that John Wood did subsequently; as to practical points, I have been interested in hernia a long while, but rather discouraged with the results of Wood's operation, which I did many times twenty years ago. The introduction of antiseptic surgery has rendered possible a boldness we could not dream of before; and has converted a hidden and obscure operation, which had to be done beneath the skin, into one of open and plain procedure. The great point of Mr. Wood's operation was to invaginate, to draw up the sac and surrounding tissues much like Macewen's method; and to approximate

¹ Page 551 in Journal.

² Page 546 in Journal.

³ Page 547 in Journal.

the pillars, and sew them down on the cord. The point of the operation, however, was that in order to render it safe it was intended to be done subcutaneously. It was a modification of subcutaneous surgery. Wood concluded that if he could make aseptic wounds into the peritoneal sac with a wire suture, the wound would be comparatively free from suppuration; and aimed to get his cure by invagination, gluing down of the pillars, and melting down, by fibrinous adhesion, the sac and pillars into one plug, which was intended to close the inguinal canal. The result in many cases was suppuration; in some cases avoidance of suppuration. The wires, which were twisted down firmly and allowed to remain undisturbed for ten to fourteen days, were directed to be untwisted gradually; but it was often found that they had loosened by the suppurative process. A secondary result was occasional burrowing of pus and pelvic abscess; and occasionally, though rarely, fatal peritonitis. Now the modern method aims to do the same thing in the open way, and does it much more securely and thoroughly. A long while ago Dr. John B. S. Jackson said to me: "Doctor, you will never get a cure until you can obliterate the serous canal;" and that is true of inguinal hernia, but not of femoral, for there is no serous canal there. The cures by Wood's method in my hands were not more than five or six that I was able to trace. I lost sight of a good many cases. Buried sutures with wire I tried; but they were invariably cast out by suppuration in every instance. I have seen them remain a long while in tissues which you would suppose much more irritable, notably the larynx, where, in thyrotoxy, I have left in buried sutures which were never thrown out. The femoral operation, which has nothing to do with a serous canal, by Wood's method, was extremely difficult of performance, and did not succeed. I did it once or twice, and it failed. The difficulties about the femoral canal under the old method were to try to approximate the walls, which were rigid. In seeking to invaginate the cribiform fascia, one practically succeeded in invaginating nothing at all, and forced together tissues which inevitably ripped out afterwards under the sharp pressure of the metallic stitch. This method of Dr. Cushing's seems to be a bold and large improvement over the old one; and completes the link wanting in Macewen's operation, by rendering you able to *invaginate*, which you cannot do by any external method about the crural ring. The wonderful safety of present processes of antisepticism in operating on these structures I cannot speak too much of, because I saw so much trouble in the old methods, by the throwing out of sutures, suppuration, etc. I think worsted pads and devices of that kind are externally useful. I think, perhaps, the profession has too much lost sight of one pad John Wood invented, which is extremely good; and I would speak of it warmly in connection with hernia and varicocele combined, which is not an uncommon affection. He devised a flat boxwood pad like a horse-shoe, with one arm larger than the other, and both of them *flat*. The two portions pressed over the outer and inner pillars of the ring, and the result was flat pressure by the larger end of the pad over the seat of bulging of the hernia.

This is comfortable, and does not irritate. Applied naked to the skin it allows the circulation to go on without obstructing the varicocele, and it controls perfectly the hernia. His theory was—and I believe it a correct one—that, where the cure of hernia depends upon lymph effused in a large plug, the subsequent failure is due to the absorption of that lymph; and that this absorption is hastened very much by pressure; consequently that all trusses applied after operation for hernia are evils; and although he felt obliged to resort to them, he sought to diminish the rounded pressure of the pad by substituting the horse-shoe pad, which left between these two arms a free passage for the vessels, and avoided pressing into the cavity of the canal itself.

DR. CLARK: I know Dr. Marcy's method very well. I remember his first case, which was in 1870. The patient, a female, was taken on Thursday, and on Sunday morning there was stercoraceous vomiting. A spray of carbolic acid was used, and the canal was completely obliterated by the use of the catgut ligature. The patient lived five years, with no return of the rupture. She had suffered very much for many years. It was with very great difficulty that we operated. The patient was subject to asthma, and had a violent cough, and everything was unpromising. She died of pneumonia five years afterwards. More recently I saw a case of Dr. Marcy's, a case of strangulated hernia which came on suddenly in an old man. The hernia was reduced after incision, the ring sewed with tendon suture, and then there was a firm pad, hard and solid, but so placed that the cord was not unduly pressed upon. This case got along very well without any bad symptom. For dressing, iodoform and cotton and the iodoform collodion sufficed. There was no rise of temperature, and the patient recovered very speedily. Another case of Dr. Marcy's I have seen recently, where a considerable amount of the omentum was cut away. I have tried some cases with this method myself, and have been quite successful.

DR. CABOT: During the last summer I had three cases of femoral hernia. In one of them the operation was done simply as radical cure for hernia, and in the other two the radical cure was done in connection with the relief of strangulated hernia. In one of these cases the sac was rather dark and mulberry-colored. For this reason I did not like to return it, and therefore sewed the neck of the sac close to the inside of the ring and brought it together by several sutures. I saw the case a few weeks afterwards, and there had been no recurrence.

In the other two cases I did the operation very much like that described by Dr. Cushing. I supposed I was doing the ordinary Macewen's operation; and supposed he had applied it in the same way to the femoral hernia. The first of these two cases was in a Frenchwoman, a cook who had a hernia at least as large as two fists. The sac was a thick one, and formed quite a large mass. Having threaded it in the way described as "through and through," and stitched it well up inside of the ring, I pulled on the thread and pushed the sac up. It went with difficulty, because it was so large and the ring so small. I then brought the ring together firmly outside. There was a good deal of constitu-

tional disturbance, I suppose from the fact that there was so much sac that possibly some small portion sloughed. The woman was sick in bed three or four weeks. She had, however, a good recovery, and a large, hard mass filled the whole of that portion of the pelvis where the hernia formerly existed. In the other case, the patient being a man, the sac was small. I opened it; sutured it in the way Dr. Cushing has described, brought the pillars together as well as possible outside of it. The man began to have delirium tremens the night after the operation, and was out of bed pretty much every day the first week or so, without any apparent detriment, so far as cure went. Everything healed by first intention. The patient went out of the hospital three or four weeks later with a cure as apparent as any cure is immediately after the operation. Dr. Burrell spoke of dividing the sac (in congenital cases) into two parts, leaving the lower portion with the testicle to form the tunica vaginalis, and stitching the upper part together, reforming the sac and tucking it inside. I have separated the sac in that way, simply cutting it off below and without afterwards reforming the original sac, put a string through it, and put it back without stitching it together. I don't think that there is any gain in having the part of the sac which is replaced in the form of a sac.

Dr. RICHARDSON asked Dr. Burrell how long the operation took.

Dr. BURRELL replied that his earlier operations took fully an hour; the last one less than one-half hour.

Dr. RICHARDSON: Dr. Burrell spoke of having given up the method of going down by layers on the sac. I think that it is anatomically impossible to distinguish the layers.

Dr. BURRELL: And yet you will hear surgeon after surgeon attempting to distinguish each layer as he cuts down.

Dr. RICHARDSON: Yet you can't recognize anything but the cremaster and sac. I don't know why it is necessary to open the sac.

Dr. BURRELL: The advantage of opening the sac is this: in the first place, by the opening you discover that it is the sac, and in the second place you can introduce into the sac the iodoform gauze that renders it perfectly tense, as if you poured in a lot of melted tallow. It makes the processus vaginalis like the finger of a glove.

Dr. GREEN: In regard to the use of trusses after operation, it is simply a choice of evils. There is no doubt as to the pressure of the truss weakening the cicatricial tissue; and if any other device can be arranged that will retain the hernia it will be undoubtedly better than the truss. The only objection to the bandages is that at the very time when the most support is needed, bandages give the least. For instance, if the man stoops, and attempts to lift, the bandage is loosened. Nothing but a spring will give the necessary firm pressure at that time. I should only recommend the truss, because, though far from perfect, it is the best thing we have at present.

Dr. WARREN: Have you noticed any difference in results since antiseptic methods have been in vogue in the number of cases, where an operation has been unsuccessful, and where patients come

back to you for trusses. Are there fewer now than formerly?

Dr. GREEN: I think so. It is hardly time to judge of the ultimate results from MacEwen's operation. I have hopes that the operation will prove a greater success than any of those previously tried. It seems to me to be based on common sense principles more than any operation yet devised.

Dr. NELSON: After my operation two years ago I tried faithfully to wear a truss, but found it impossible to bear it; and I fail to see the necessity of it, or any other support. After the buried suture has closed the ring and united the other layers very firmly, the effectiveness of the very simple dressing Dr. Marcy has mentioned I think ought to be emphasized. When the edges of the wound have been coated by the blind stitch, the collodion dressing in itself is sufficient, *i. e.*, iodoform collodion reinforced with a few fibres of cotton; neither bandage nor truss is apparently necessary.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK, OCTOBER 22, 1888.

Dr. PAUL F. MUNDE, of New York, read a paper on

THE VALUE OF ALEXANDER'S OPERATION FOR SHORTENING THE ROUND LIGAMENTS ESTIMATED FROM THE RESULTS OF TWENTY-THREE CASES.

Dr. Mundé stated that he felt it his duty to report his experience with this much-discussed operation, as he was, so far as he knew, the first to perform it in this country. In the reports of his first six cases (1885-86) he had commended the principle of the operation, but doubted whether it would be practicable, owing to the occasional difficulty in finding the ligaments. An increased experience has, however, led him to believe that, when the ligaments cannot be found, it is due to the failure to recognize the exact anatomical landmarks which render easy the seizure of the diffuse terminal portions of the ligaments.

He stated that we are now able to satisfactorily answer the three points which are vital to the operation securing a permanent position in gynecological surgery. These points are the following:—

1. Can the round ligaments always be easily found, drawn out, and the uterus thus be elevated and anteverted?

2. In which forms of displacement of the uterus is the operation indicated justifiable, and likely to be followed by complete and lasting relief?

3. Is the elevation and suspension of the uterus by the shortened round ligaments alone sufficient, and is the result permanent? Or does the latter operation require an additional one on the vagina or pelvic floor to ensure a complete and enduring recovery?

Dr. Mundé stated that the existing diversity of opinion in regard to these points is due to opposition to the operation on theoretical grounds, to failure to find the ligaments, or, in some cases, failure to supplement the shortening of the round ligaments by a plastic or other operation on the vagina or pelvic floor.

He believed that the greatest difficulties in the way of finding the round ligaments were, too great

attention to the details of dissection, and failure to recognize the anatomical landmarks of the terminal portions of the ligaments. He recommended a certain boldness on the part of the operator, and gave the following details as his method of procedure. Stand on the side of the patient opposite to the ligament to be operated on; locate the pubic spine with the index finger of the left hand, pressing firmly so as to leave a dent in the skin; make a quick oblique incision, from one and a half to two inches long, right down to the spine; let the finger touch the spine, establishing a guide, until the ligament is distinctly recognized, isolated, and drawn out. The small knuckle of fat which emerges through the slit made in the external ring, indicates the location of the terminal fibres of the ligament; and the pillars of the ring are exposed by scraping with the handle of the scalpel. After the outlines of the ring are defined, lift the whole mass of fat with a pair of long forceps, and pass an aneurism needle under it close to the bone. Any areolar attachment may be loosened by the handle of the scalpel, and traction is then made and maintained until a firm resistance is encountered and the length of the ligament withdrawn. Divide the nerve which lies to one side and below the ligament, draw out the ligament to its full length, retaining it with a sound or repositor, cover the wound with sublimated gauze, and repeat the operation on the other side. After both ligaments have been exposed and retained by the sounds or repositors, draw on them, at the same time, until the uterus is elevated and anteverted. The ligaments are then stitched into the wounds, and a split-bone drainage tube is inserted. When all the sutures have been tied, the sounds or repositors are removed, the pubic attachment is divided, and the slack of the ligaments cut off smooth with the skin. The wounds are then irrigated with a 1-10,000 sublimate solution, and are dressed with sublimated gauze and a spica bandage.

When the fundus uteri is not bound down by adhesions and the ligaments possess their normal play in the inguinal canal, the uterus can always be elevated and anteverted. Congenital absence or atrophy of, or abnormally small ligaments, may prevent success in performing the operation.

In answer to the second query, Dr. Mundé said that the operation is indicated in long-standing retroversion or retroflexion of the uterus, especially when associated with descensus or actual prolapse of that organ with cystocele or rectocele. He would except as suitable for the operation women of such advanced age that the defective nutrition of all tissues would render firm union improbable. Another indication for the operation is a sharp retroflexion with congenitally shallow vagina—one which offers no support for an intravaginal pessary. Cases of backward displacement and descensus of moderate degree, which are comfortably managed by vaginal supporters, and cases where the retro-displaced fundus is more or less immovably adherent to the rectum do not call for Alexander's operation. Too much is asked of the round ligaments when they are expected to permanently sustain an enlarged uterus with a thick and relaxed vaginal column dragging on it; in such cases a supplementary

plastic operation on the vagina or pelvic floor should be performed.

In answer to the third query, Dr. Mundé stated that, if the pelvic floor is intact and the displacement is merely a retroversion or retroflexion, with but a slight descensus, the operation for shortening the round ligaments suffices, the operation having been a success, and the suspension of the uterus is permanent. In nineteen of the twenty-three cases presented the operation was successful. When the perineum is destroyed or greatly relaxed, and when the uterus is more or less completely prolapsed, it is wise to supplement the Alexander operation by narrowing the vagina and restoring the perineum. Indications for combined operations exist in many instances; but six of the twenty-one cases reported were those in which only Alexander's operation was performed.

In concluding, Dr. Mundé said that, in properly selected cases, Alexander's operation usually does what is expected of it, and that if proper antisepsis is employed, the danger of the operation is practically *nil*. He believes that Alexander's operation will not be supplanted by the at-present-fashionable, but much more dangerous, laparotomy.

AMERICAN PUBLIC HEALTH ASSOCIATION.

SIXTEENTH ANNUAL MEETING.

MILWAUKEE, WISCONSIN, NOV. 20, 1888.

THE meeting of the American Public Health Association just closed will long be remembered by the members of the Association as one of the best since its organization in 1872. A week of almost cloudless skies, a series of papers and discussions of unusual interest, and a hospitable welcome, conspired to make every day's session a success.

The first morning session was devoted mainly to the subject of water pollution, the opening paper being the report of the committee on the pollution of water-supplies. It was read by the Chairman of the Committee, DR. CHARLES SMART, United States army. The object aimed at in the report was the necessity of excluding sewage from admission to water-supplies *in toto*. The report treated of all the important questions which pertain to this subject, such as the value of chemical and biological analysis as aids to examination, the effect of filtration and of sedimentation as carried out in connection with the water-supplies of different cities, both domestic and foreign, and the effect of polluted water-supplies upon the mortality rate, especially from typhoid fever. The following portion of the report had reference to the legislation of Massachusetts on this question, and to the work accomplished by its State Board of Health.

The State Board of Health of Massachusetts is charged with the general supervision of the water-supplies. No sewage, drainage, excrement, or other refuse or polluting matter, of such kind or amount as, either by itself or in connection with other matter, will corrupt or impair the purity of a water used for domestic purposes, is permitted to be delivered into a water-course or any of its feeders within twenty miles above the point where a water-supply is taken. Upon the application of a city or

town to the Supreme Court, alleging the pollution of its water-supply in violation of law, an injunction may be granted or the polluting substances required to be so cleaned or purified that they shall no longer be deleterious. The limit of twenty miles in this law is a defect; but sanitary legislation is a thing of slow progress, and our friends in Massachusetts undoubtedly secured as much as was possible for them to obtain at the time. The State Board of Health is required to examine the waters from time to time for the purpose of ascertaining whether they are adapted for use as domestic water-supplies or are likely to impair the interests or imperil the health of the public. It is required to conduct experiments to determine the best practicable methods of purification, of drainage, and of the disposal of refuse, and to recommend measures for the preservation of the purity of the waters. Moreover, it is the legally constituted adviser of cities, towns, corporations, firms, or individuals in matters pertaining to the introduction of water-supplies or sewerage systems, making use of its knowledge and facilities on their behalf in regard to source and quality of water and methods of sewage disposal, having regard to the present and prospective needs and interests of other communities or individuals that might be affected thereby. The approval of the board is a legal requirement to the consideration by the legislature of any application for authority to introduce any system of water-supply or sewerage. The board is also empowered to consult with and advise those engaged or intending to engage in any manufacturing or other business as to the best practicable method of intercepting, purifying, or disposing of any drainage or refuse that might result from the business to the detriment of the waters of the State. It is required to bring to the notice of the attorney-general all instances which may come to its knowledge of omission to comply with existing laws respecting the pollution of water-supplies and inland waters, and to report to the legislature any specific cases, not covered by the provisions of existing laws, which in its opinion call for further legislation. Finally, and very materially, the board is provided with funds to sustain the corps of engineers, chemists, and inspectors whose labors are needful to the proper performance of its duties.

The report of the board's proceedings under these heads, submitted to the legislature in January of this year, shows the excellent work that may be accomplished in this way. Eleven applications from cities and towns for advice concerning water-supplies were received; eleven for advice concerning sewerage; two soliciting action to prevent the contamination of particular water-supplies; and one from a manufacturer for advice concerning the disposal of drainage from certain works which he purposed establishing. The important question of a water-supply for the cities of Boston, Chelsea, and Somerville and the town of Everett, was one of those that came before the Board. There are one hundred and twenty-three sources of public water-supply in the State; but over two hundred samples are investigated chemically and biologically every month, the samples being from rivers, ponds, and other sources that may be utilized in the future. Experiments are also in progress on methods of

sewage disposal which will add considerably to our knowledge of the results which may be obtained in that direction.

With the aid of the State the local authorities, in their efforts to obtain and preserve a wholesome water-supply, would experience no difficulty that could not be overcome by the expenditure of the necessary funds. The twenty-mile limit will in progress of time be blotted out, and the waters of the State be sharply divided into those which may be used as sources of domestic supply and those which carry off the waste water. The water-supply and sewerage systems of the State, of the country, should be as distinct as those of every household; and the sooner this is accomplished the sooner will the rates of sickness and death be decreased among our people.

Your committee, therefore, urge a livelier interest in this important matter on the part of the State boards of health, an interest which is not satisfied with discussing and subscribing to sanitary views of the subject, but which will leave nothing undone that will tend to invest them with power to act for the preservation of the public health. With all our boards operating, each within its domain, there would be no need of a committee of this Association to investigate the subject of water-pollution. In concluding we submit the following resolution:—

"That it is the well-considered belief of this Association that it is an imperative necessity, especially in the more populous States, that State legislatures should give their boards of health that financial support which would enable them to act intelligently on all questions pertaining to the public water-supplies, investing them at the same time with the supervision of the said supplies, and with power to preserve them from contamination by sewage or other injurious matters." This resolution was referred to the Executive Committee and afterwards passed by the Association.

Dr. H. P. WALCOTT, Chairman of the State board of health of Massachusetts, being called upon, referred to the necessity of condemning certain densely populated districts near great cities for use as water-supplies, and also to the importance of carefully watching all cases of typhoid fever, and guarding against all possible infection of the water-supplies by them.

Dr. RAVEN, of Illinois, gave a sketch of the work accomplished by the board of health of that State, in its investigation of the great rivers of Illinois, with special reference to the effect of sewage upon them.

The evening session was devoted to the customary addresses of welcome by the city authorities and the delivery of the President's address. It would be difficult to assign a definite title to Dr. Hewitt's excellent address, since it included nearly the whole domain of sanitary science. Water-supply, sewerage, and sewage disposal, infectious diseases, vital statistics, ventilation disinfection, all received their due share of attention. Special stress was laid upon the importance of local boards of health, and it was urged that the local board is the integral unit, the State and national boards being secondary in actual or practical importance. With reference to a national board of health, Dr. Hewitt believed

that its functions should consist mainly in facilitating and cementing the interdependent helpfulness of State boards with each other; and secondly, in providing for a thorough extra-national system of sanitary inspection in connection with our consular system. Although an hour and a half in its delivery, the address was listened to with the keenest interest to its close.

SECOND DAY, NOVEMBER 21ST.

The first paper of the second morning's session was presented by DR. BENJAMIN LEE, of Philadelphia, secretary of the State board of health of Pennsylvania (and read in his absence by Dr. Rohé of Baltimore). It was entitled

MEMORANDA OF VISITS TO THE QUARANTINE STATIONS OF THE ATLANTIC COAST DURING THE SUMMER OF 1888.

Special reference was made in this paper to the condition of the quarantine stations at New York, Philadelphia, Baltimore, Wilmington, and Norfolk. All of these were severely criticized, especially in view of the fact that large sums of money had been expended upon them to no purpose, the methods employed being entirely inadequate to provide for the exclusion of infectious disease.

The second paper was read by DR. CROSBY GRAY, health officer of Pittsburg, the burden of which was to the effect that the water-supply of a section of that city was polluted by sewage, and as a reasonable consequence the mortality of that section of the city was 6 per cent. higher than that of the remaining sections. Dr. Gray presented a calculation of the loss which ensued to the city from a purely financial standpoint, estimating it at about a half million dollars, and this without making allowance for professional services.

DR. H. B. BAKER, secretary of the State board of health of Michigan read a brief paper upon

CLASSIFICATION OF DISEASES,

to the effect that classification in medicine, like all other sciences, is one of its most important branches, no progress being possible without it. The statistician must necessarily attach due weight to the causes of disease in any system of classification which he may adopt, and the discoveries of the bacteriologist, the meteorologist, and of the etiologist must all be allowed due credit in the adoption of a system of nomenclature. Dr. Baker prefers the system proposed by Dr. Farr, at the same time believing that to meteorology, and especially to the influence of hot or cold weather, should be accorded more value than is ordinarily granted.

In consequence of the recent invasion of the United States by yellow fever a large share of the meetings of this session of the Association was devoted to the discussion of yellow fever, and of the measures for its prevention. The discussion of this subject proved to be very profitable, since some of the most valuable contributions presented were in this direction. They were eminently practical in character, emanating as they did from personal experience, both in the matter of management and of prevention by quarantine.

DR. JOHN H. RAUCH, secretary of the State board of health of Illinois, presented a paper entitled

YELLOW FEVER: PANICS AND USELESS QUARANTINES; ITS LIMITATION BY TEMPERATURE.

The object of Dr. Rauch's paper was to show that yellow fever does not spread in regions where the temperature is below 70° as a rule. Hence the needless fear that often exists in the later part of the year in many communities where the temperature does not remain above 70° for a considerable period of time. Dr. Rauch personally visited southern Illinois, as well as other places outside of the State, and boldly proclaimed the uselessness of quarantine, urging that refugees from Florida should not be barred from admission to the States, and exerting a salutary influence in restoring confidence and preventing panic.

Recent Literature.

The Life Insurance Examiner: A Practical Treatise upon Medical Examination for Life Insurance. By Charles F. Stillman. The Spectator Company, New York.

This is a book of over two hundred pages, written by a medical examiner of one of the largest and oldest of the American life insurance companies. It presumably embodies the experience of this company, extending over a period of over forty years, and at the same time includes that of the other large companies. The author has evidently had a good deal of experience in making life insurance examinations, and his method of handling the subject suggests one who is at the same time familiar with ordinary medical teaching. The fact that the book is dedicated to the president of a large company, and that it is printed and published by the Spectator Company, which has to do with insurance publications solely, would indicate that it was intended to be a standard authority on its subject. It certainly has attained the aim of its author to present a concise practical manual. The subject is treated under three heads:

1. Life Insurance Formalities.
2. Examination of the Applicant.
3. Diseases relating to Life Insurance.

In the first part of the book is a list of questions classified from the forms of application used by six prominent insurance companies, covering six pages. Next come nine pages of instructions to medical examiners, revised from the rules observed by the prominent companies, and in the midst of these instructions there is a colored perforated sectional plate giving the relation of the deeper parts to the ribs and surface of the body. It is the well-known plate of Ferber, and is a most excellent one.

The second part of the book is abundantly supplied with tables and text, covering seventy-five pages, and illustrated by woodcuts wherever necessary. Beginning with the signature of the applicant, everything relating to him is systematically and thoroughly treated of, and the methods of examining the different parts of the body are given with great clearness. Chief attention is paid to the thoracic viscera and the kidneys, as is natural.

Finally, about one hundred pages is devoted to the consideration of diseases. Beginning with

hereditary influences, which the examiner must be able to detect by comparing the family record with the previous history and present physical condition of the applicant, the constitutional diseases and diseases of the blood and blood-making organs are briefly considered, solely with reference to their bearing upon the rejection, postponement, or acceptance of the applicant for insurance. The high standard adopted in the other parts of the book is fully maintained here, and the author has succeeded in bringing in all that is essential and at the same time has kept his hold on the interest of the reader. The book, though not without some small faults, is by far the best that has thus far appeared in English, and deserves a wide adoption by medical examiners.

A word of praise should be given to the publishers. They have presented a book remarkably free from typographical errors, printed on nice paper, with clear, apparently new type of a very nice size.

It is to be hoped that the book will meet with the success that it deserves.

The Dispensatory of the United States of America.

By DR. GEO. B. WOOD and DR. FRANKLIN BACHE. Sixteenth edition, rearranged, thoroughly revised, and largely rewritten, with illustrations, by H. C. WOOD, M.D., Professor of Materia Medica, etc., University of Penn.: JOSEPH P. REMINGTON, Ph.M., Professor Pharmacy, Philadelphia College of Pharmacy; SAM. P. SADTLER, Ph.D., Professor Chemistry, Philadelphia College of Pharmacy, and University of Penn.: J. B. LIPPINCOTT Co., Philadelphia. 1888. xiv. 2091. Svo.

The appearance of the sixteenth edition of this, the oldest and most generally known commentary upon the U. S. Pharmacopœia, is of great interest to the medical profession. So much more generally known, in short, to physicians has this commentary become than the text itself, that it is commonly supposed, by all such as are not specially informed upon the subject, to be, in fact, the very U. S. Pharmacopœia itself.

The extraordinary activity during recent years in practical and theoretic research in all departments of medicine and pharmacy has produced an unusually large amount of fresh material to be incorporated into this new revision. Although over six hundred pages of new matter have been, therefore, included, yet, by a very thorough elision of that which was effete, the book has been increased in size by only some hundred and sixty-seven pages. It has thus not been rendered too unwieldy for the needs of practical workers. To still further enhance the value of the information given, full and accessible references, with dates, have been appended to aid in the search for fuller details.

Recognizing the large use made now of certain pharmaceutical preparations, which have not as yet received official sanction, and desiring to aid in the organized effort now being made to furnish uniform and authoritative formulas for such, the editors have incorporated the new National Formulary in its entirety, thus rendering it of easy reference for physicians, who would find it greatly to their advantage to consult this part of the work.

The very great merits of the work as a whole, in its former editions, have become too well known to call for any further mention now. And this edition has made due advances upon the past.

B. F. D.

Physicians' and Students' Ready Reference Series. Obstetric Synopsis. By JOHN S. STEWART, M.D. 12mo., pp. 202. Philadelphia: F. A. Davis, 1888.

This synopsis is based on the lecture notes of Prof. W. S. Stewart, of the Medico-Chirurgical College, Philadelphia, although all the leading works on the subject have been consulted. The new obstetric nomenclature adopted at the Ninth International Medical Congress, in 1887, has not been followed in the text, but is inserted in the form of an appendix.

The teachings in the main are those of approved modern writers; but we regret to see the author retain the theory of an autogenetic origin of puerperal fever.

Our opinion of such books as the subject of this notice has been previously stated, and needs not to be repeated. While synopses and other shortcuts may be appropriate in young ladies' schools, when a general smattering is all that is desired or expected, we do not think their use is admirable by the serious-minded medical student. We are aware that the compilers of such books recommend them only as stepping-stones to larger works; but unfortunately the average student will not make use of the latter if he finds that he can pass an examination without them. The result is apparent when he faces the difficulties of professional life.

Hygiène Israélite. Translated from Arabic into French. By M. CARCOUSSE. Algiers: M. Ruff. 1887.

Was it not Jean Paul (Friedrich Richter) who said that the literary masterpieces of the past should be republished once in the lifetime of every generation, or at least once in each century. But many a year has passed since the reading world has enjoyed the sanitary and philosophic treatise by Maimonides (born 1139). A subtitle of this portion of the author's writings reads "Principles of the Physical and Moral Well-being of Man." In this *brochure*, comprising about fifty pages, human life is looked upon from two points of view: (1) with regard to the physical care of the body; (2) considering the conduct of the individual as a member of society—moral hygiene. Here is presented an epitome of the wisdom collected in the Hebrew Bible, while the inculcations anent physiology, and hints at the rationale of things, I show this thinker to have had no difficulty in reconciling science and religion. This volume may well be placed on the same shelf with *The Thoughts of Aurelius* and *Religio Medici*. The memory of the erudite translator is honored by the few lines with which Dr. E. L. Bertherand preceeds the work of his friend.

Although of special interest to the inhabitants of North Africa, where the author lived and observed these canons of corporeal and spiritual health, may be studied with satisfaction by the beginner and by the sage of every land. F. B. S.

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Medical and Surgical Journal.

THURSDAY, DECEMBER 6, 1888.

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THE REGISTRATION OF MORTALITY AND
VITAL STATISTICS.

STATISTICAL research is already recognized as an important branch of medical study, with the ultimate object of furnishing, in prognosis and treatment, a trustworthy guide derived from the records of experience. It is true we have no records (except imperfect ones for the State of Michigan) of the actual amount of sickness in communities or States, and more than probable that death-rates do not always fairly represent the public health: yet, at the same time, records of births and deaths are of great sanitary value, when they are sufficiently complete to allow certain definite comparisons to be made between the healthfulness of different localities, ages, and nationalities, and to "indicate those circumstances of the environment which tend to produce disease, and which, at the same time, can be modified by human effort." Even though these data were accurate and complete, it is by no means easy to make comparisons which shall not be misleading, while with the well-known shortcomings of public registration records the task becomes so complex that our inductions must be regarded more as probabilities than established conclusions. This view of the subject is not always clearly kept in mind, even by statisticians.

Dr. W. Everett Smith, in a study of "Phthisis and Pneumonia in Massachusetts, Statistical and Climatological," read before the Massachusetts Medical Society last June, has so clearly analyzed and so sharply arraigned the laxity and inaccuracy of city and State registration reports, that a further discussion of the subject seems to be profitable.

Year after year, official tabulations have been

made by State authorities of the distribution of some of the more prominent diseases among the sexes and different age-periods, taking the total number of deaths from the diseases as the basis of calculation, and omitting entirely from the problem the living population among whom these deaths occurred. Whatever reason there may originally have been supposed to be for such an imperfect and misleading tabulation as is this "method of percentages," the system is so obviously "faulty" that we are surprised it has so long lingered among routine traditions.

Even so high an authority as the late Dr. Austin Flint is shown to have followed this percentage method of calculating the age predisposition of phthisis and pneumonia, although a study of the percentage tables of deaths "from all causes," is sufficient to prove such calculations essentially mendacious, since, according to their testimony, the liability to death, from all causes combined, rapidly diminishes after the age of thirty.

The method which Dr. Smith recommends of calculating the distribution of a given disease, not only in the sexes and age-periods, but also in separated localities, such for example, as towns, cities, and States, by comparing the *mortality* with the *living population among* whom the deaths occurred is clearly the method employed by life insurance companies, by the reports of the Registrar-General of Great Britain, and by Dr. J. S. Billings in the Tenth Census of the United States. We sincerely trust it will sometime be adopted in the State Registration Reports.

The discrepancies presented between the Registrar's Report and the Reports of the Board of Health of the City of Boston prove still more interesting, and much more important. Not only does the City Registrar present to us "a confusing and mischievous tabulation of disproportions" in his calculation of the mortality among the different nationalities resident within the city, inasmuch as he calculates "the percentage of deaths by nationalities, not according to the *population* by nationality, but according to the *total number of deaths from all causes in the given nationalities*," (the same error we have already noted in the State records,) but he leaves us at the same time "in doubt regarding the total number of deaths in any given disease, since the figures of the Registrar confessedly do not correspond with those of the Board of Health; yet they work, or are supposed to work, with precisely the same data." Furthermore, "the City Registrar discontinued any practical study of consumption about 1878, because, as he says, the disease was already so well understood, while he has never tabulated the mortality from pneumonia

by nationality;" . . . "neither is it possible, without a personal and expensive study of the written records at the City Hall, to gain any idea of the local or ward distribution of these diseases (consumption and pneumonia) in the city."

Although these results are in themselves sufficiently "surprising, disappointing, and vexatious," they are all the more reprehensible when we consider that the Board of Health has for several years recognized to the full the inaccuracies and deficiencies of the Registrar's office, and yet, for various reasons, is powerless to render the records more trustworthy.

The questions naturally arise, are the faults we have noted a necessary or integral part of a system of registration? If they are not, what are the practical remedies that will infuse life and usefulness into what is now a *comparatively* dead and inert mass of figures?

The returns of mortality are derived, it must be remembered, not alone from competent medical men, but from all the rabble who choose to call themselves physicians, as well as, at times, from attendants confessedly non-medical: but how many returns are thus made we do not know, since in no case can we ascertain by the public records the names of the reporting physicians or attendants.

The simplest and at the same time most thorough way of improving the general value of the records would obviously be to provide some means of registering all competent practitioners of medicine, and of limiting to them the authority to sign death certificates. In lieu of such a salutary provision, it would be a very easy matter for town and city clerks to give, in their annual reports to the Secretary of the Commonwealth, the name of the attendant who signed the death certificate. This, however, would improve only the registration records, but would render the annual registration reports no more trustworthy than before. Yet it would be a step toward accuracy of detail, and would materially lighten the labors of those who choose to make an individual study of the original statistics.

Another point of confusion in the registration records arises from a general neglect of the nosology, or classification of diseases adopted by the State. Although we grant that the classification which is now in use, that of Dr. Farr, is so unsuited to our present advance in the knowledge of the nature of disease as to demand an entire revision, yet we hold that it should be the duty of local boards of health, city registrars, or town clerks to secure as far as possible death returns made in accordance with reasonable ideas of medi-

cal information, — death returns which shall mean something.

Of what possible value to science can it be, for example, to preserve the record of a death from "congestion," or "hemorrhage," or "inflammation," or "affection of the bowels," when it lies within the power, and should be within the care of every clerk to insist upon a more explicit diagnosis before the burial permit shall be issued? It is true that even if additional accuracy were demanded, many officials would continue to perform only a perfunctory service in the matter, and would rarely, if ever, trouble themselves to insist upon minute details, in view especially of the fact that laxity has been the accepted tradition so long as to gain the force of unwritten law. While, it must be confessed, the great majority of town clerks and registrars being non-medical men, are far from competent to obtain any scientific accuracy whatever.

On the other hand, it is not to be supposed that a man who himself has no definite ideas of diagnosis or of even the rudiments of a common-school education can ever by any amount of badgering be made to render an intelligible return of a cause of death. At the same time the present neglect of even the simplest requirements in diagnosis is more than reprehensible, and we cannot avoid the conclusion that public service would be greatly improved if, so far as possible, the local officials in charge of mortality returns were men of medical education. Indeed, it is more than probable that many of the errors we have noted in the Reports of the Boston City Registrar would never have occurred had that official possessed the requirements which we here recommend, and which other large cities have seen the importance of demanding in their registration service.

Closely connected with the classification of disease, and often helping materially to explain a particularly obscure diagnosis, is the duration of the last sickness, a datum already supplied to the town clerks, but not transmitted by them to the State records as it ought to be, to complete the clinical history of the case.

The only other source of error in registration work which we shall mention here depends not so intimately upon the data themselves, which are at our disposal, as upon the faulty interpretation we are apt to give to them and the unfair use we too often make of them. In comparing, for example, the aggregate death-rates of any given year or decade with those of a preceding year or decade derived from registration records, we often find these rates to be apparently increasing. Thus the National Census of 1860 gave a general death-rate from all causes for the States and Territories of

12.54, the census of 1870, a rate of 12.77, while that of 1880 gave a rate of 13.09 per 1000 living population. To overlook the fact, however, that year by year and decade by decade greater efforts have been made and greater success achieved in obtaining full and accurate returns of mortality and vital statistics; to adduce a full comparison between rates of death which a moment's reflection would show to be of such varying degrees of accuracy; and finally to attempt positive inferences from such comparisons, would, we believe, be as hasty a conclusion as it is to claim that an apparent increase in the mortality of any individual disease, pneumonia, for example, is due solely, or even in greater part, to an assumed inefficiency of modern methods of treatment, a point to which we have already made reference in these columns.

SEEGEN ON THE FORMS OF DIABETES MELLITUS.

PROFESSOR SEEGEN, of Vienna, who is widely known in connection with his studies of saccharine diabetes, and especially for his contributions to the dietetics of this disease, in a recent lecture before the Medical College of Vienna, distinguishes two forms of diabetes: the one light, in which sugar is eliminated by the urine only when the patient ingests starchy foods; the other grave, in which sugar is found in the urine even when the patient abstains altogether from amylaceous articles of diet. There is, of course, nothing new in this classification, which is substantially adopted by all modern authorities, although some, as Senator, regard these two forms as two periods of the same disease, a view at which Seegen demurs.

The grave form almost always attacks young and middle-aged persons, while the mild form is generally met with in advanced life. From the standpoint of prognosis these forms should be well distinguished.

Seegen gives a table in which are recorded the ages at which diabetes presented itself in eight hundred cases:

In 5 per cent. between the ages of			
" 3	"	"	10 and 20
" 16	"	"	20 and 30
" 24	"	"	30 and 40
" 30	"	"	50 and 60
" 40	"	"	60 and 70

As concerns sex, Seegen has met with the disease much oftener in men than in women, the proportion being as 7 to 3. Diabetes, in his experience, as in that of most clinical observers, is very frequent among the Jews. Seegen thinks that the greater frequency of diabetes among the Jews than among the people of other nations is owing to the excessive trials, hardships, and sufferings which this race has been compelled to endure in past ages, for

the Jew belongs to a persecuted race; the sufferings of the parent have engendered in the child a predisposition to nervous diseases, and diabetes is known to be intimately linked to diseases of the nervous system.

The duration of the grave form is generally from four to five years. In exceptional cases, diabetes presents itself in an acute manner, and terminates fatally in four or five weeks. The mild form lasts from ten to twenty-five years.

Diabetes is very often a family disease; it has been traced in some instances through four generations. It sometimes alternates with mental diseases, as melancholia. In the great majority of cases (ninety per cent.) the nervous system is in an abnormal condition;—the diabetes is often accompanied with neuralgia and neurasthenia.

In order to make a successful prognosis, it is necessary for the physician to know with which of the two forms he has to do. For this purpose he must examine the urine, prescribe an exclusively animal diet for two days, then examine the urine anew. If, in making the second analysis, no sugar is found, the disease is of the mild kind; if, however, at the end of the two days, traces of sugar appear, the disease is more serious.

Small quantities of sugar may coincide with grave symptoms. In these cases, the elimination of sugar is not the principal disease, but a symptom of a nervous disease, very generally neurasthenia.

As for the treatment, there is no sovereign remedy for diabetes. Morphine and codeia act only while they are being administered. In grave cases the alkaline waters and animal diet have no value; but in the mild form the alkaline waters (Vichy, Carlsbad, etc.) have a considerable action on the elimination of sugar, and, what is remarkable, this beneficial action lasts for some time after the administration of the waters.

As far as a definite cure is concerned, Seegen has never observed it in the eight hundred cases above mentioned. By a definite cure; he means a state which enables the patient to eat as freely of amylaceous matters as other people without passing sugar in his urine. Cantani affirms that he has observed several cases of complete cure, but if one studies these cases closely, one finds that none of these patients returned to his former habits of diet. Cantani prescribes an absolute animal diet for from three to six months, after which he regards his patients as cured. Seegen has tried this mode of treatment without any result. He has, moreover, seen two of Cantani's pretended cures; these patients came later to Carlsbad with all the symptoms of diabetes.

To explain the presence of sugar in the urine,

Claude Bernard assumed an exaggerated production of this substance in the economy. The limit which this glycaemia may attain without giving rise to diabetes is, according to Bernard, .02 per cent. This figure Seegen thinks too high, for he affirms that he has seen cases of diabetes without glycaemia. According to this writer, in the mild form the patient eliminates sugar which has been introduced by the food, the hepatic cells having lost the property of acting on amylaceous substances.

In the grave form the patient eliminates sugar even if he has not eaten amylaceous matters, because the combustion of sugar does not take place. By numerous experiments Seegen has found that narcotics diminish in animals the combustion of sugar. In these cases, then, it is not a single organ which is affected, but all the cells of the body, for the combustion of sugar takes place in all the tissues of the economy.

This theory accords well with clinical facts, for the mild form, which is a disease of the liver, is susceptible of great amelioration, while the grave form, which is a disease of the entire organism, is well high, if not altogether, incurable.

YELLOW FEVER ON THE CRUISER BOSTON.

The new United States steel cruiser Boston recently arrived at the port of New York from Hayti with yellow fever on board. The first case occurred November 9th, when the steamer was lying off Port au Prince, whither she had come from South America; and by the time she started for New York, November 16th, two other cases had developed, one of the victims being chief surgeon Wm. J. Simon. During the voyage five other cases developed, and four of the patients died. When the vessel arrived at the New York quarantine, November 24th, Dr. Simon and two seamen were in a critical state, but the two seamen afterwards recovered. Dr. Simon lingered until November 27th, when he died, and it is said that in his case the presence of Bright's disease rendered the chances of his surviving the attack very small.

As soon as the weather permitted the convalescents were removed to the hospital on Swinburne Island, and no new cases have occurred.

During the voyage there was naturally something of a panic on board, and the duties of the assistant surgeon, Dr. Lunsden, were extremely arduous.

On December 3rd the Boston was released from quarantine, and proceeded to the Brooklyn Navy Yard, after disinfection, which, as far as we have learned, consisted of scouring the wood-work and exposing the compartments to the fumes of sulphur. The Boston is essentially an iron vessel,

and her future history, should she return to tropical climates, will be watched with interest. Previous experiences with wooden ships have not been encouraging.

MEDICAL NOTES.

—Washington despatches state that a petition was sent recently to Secretary Whitney, signed by fourteen of the practising physicians of Pensacola, which complained against Surgeon J. W. Ross, attached to the Pensacola Navy Yard. The petition charged that Surgeon Ross was guilty of unprofessional and un-officer-like conduct; that although he was receiving a large salary from the Government, and was living in quarters furnished by the Government, he was actively engaged in prescribing for numerous civilian patients at the Government dispensary, where he had the free use of medicines and instruments, and that he assisted other patients at Government expense and accepted less than the schedule rate of fees charged by his professional brethren, thus diminishing their practice and revenue therefrom. The petition was referred to Surgeon Ross, who, while denying the right of the petitioners to meddle with his affairs, admitted that he treated and prescribed for patients from distant points, took fees from those who were able to pay, and gave his services and medicine free to those unable to pay, especially to those on the Naval Reservation. He denied the allegations that he used Government time, appliances, or medicines for those not entitled to them, and upon the testimony of others that Surgeon Ross had simply given his services out of sympathy for the poor, and had done much good, the Secretary refused to interfere.

—Milwaukee, Wis., has an emergency hospital, which has been in operation four months, and during that period over sixty cases have been treated, or an average of one every other day, all of which were real "emergency" cases, where the patient would have been placed in danger if taken to some more distant place for treatment. The hospital has no permanent fund for its support, and is not maintained by the city. A few gentlemen who have perceived the need of the hospital have provided for its expenses, and several well-known physicians have given their services free of charge. The president of the board of trustees says that the experience of the past four months has shown that it will cost, in ordinary times, about \$2000 per year to run the Emergency Hospital, that is, barring any great accidents, railroad or otherwise. If such should occur the expense would necessarily increase.

—Marshall P. Wilder tells this story of a doctor and his patient. The patient wore an un-

happy look. "There is nothing particularly the matter with me," he said, "except that I am all out of sorts. I feel shaky all day long, and somehow I can't get in trim." "Of course not," said the doctor oracularly. "You eat too much, sleep too much, drink too much, and smoke too much. You should eat but two meals a day, drink nothing but red wines, and smoke one big cigar only after dinner." A month passed, and the doctor met the patient again. The marks of misery and gloom were upon the face of the patient. "I am about ten thousand per cent. worse," he said. "The eating was all right and the drinking was all right, but smoking that one cigar a day nearly killed me." "How so?" asked the doctor. "I never smoked before in my life."

—Cable despatches state, under date of November 29th, that at a council meeting of the British Medical Society a resolution was passed deprecating the publication of the details of the late Emperor Frederick's sickness, as a violation of professional confidence. The council accepted the regrets of the editor of the society's organ concerning the publication of them. As a possible corollary of the above action, we learn that Sir Morell Mackenzie has resigned his membership in the College of Physicians.

—The daily press contains the startling report that the Chinese lepers in British Columbia have communicated their terrible malady to the Indians, who in that province number fifty thousand. Senator McInnes, M.D., from British Columbia, is said to have stated that out of the total Indian population of the province, which he places at forty thousand, he believes there will not be five thousand living in a quarter of a century, as a result of the leprosy.

—The first prize offered last winter by the Medico-Legal Society of New York for the best essay on a medico-legal subject has been awarded to Mr. J. H. Wigmore, of Cambridge, Mass., the subject of whose article was "Circumstantial Evidence in Poisoning Cases." Among the members of the awarding committee were ex-Judge Dillon and ex-Judge Noah Davis. Mr. Wigmore has been invited by the president of the society to read his paper at the December meeting.

—The supposed remedial agency of the odor of cows and cow-stables in cases of consumption is to be tried at Reinickendorf, near Berlin, on a unique scale, says the *New York Analyst*. A vast circular building has been erected, in the basement of which several hundred cows will be kept, and the odor of the stables will be conducted to the rooms in the upper stories! In the centre of the

building is a large yard, for which a whey-cure, bathing rooms, etc., are planned.

—The St. Paul, Minnesota, *Press* says that physicians estimate that a hundred thousand Minneapolitans suffered from the winter cholera last winter. These hundred thousand people who have been through the mill are wondering, with feelings of horror, whether they are going to suffer again in the same way. A few cases have already appeared, or, at least, cases which are reported to be winter cholera. The water-supply is said to be at fault.

NEW YORK.

—The American Association for the Advancement of Physical Education held its fourth annual meeting at the Berkeley Lyceum, November 30th. Mr. William Blakie presided, and a number of delegates were present from various parts of the country. Among the papers read were the following: "The Training of Dullards," by Dr. H. D. Wey, of the New York State Reformatory at Elmira; "The use of the Sphygmograph in the Physical examination of Gymnastic Work," by Dr. J. G. Smith, of New York; "Some Fallacies in Anthropometry," by Dr. Edward Hitchcock, of Amherst College; "Physical Training of Women," by Dr. Mary T. Bissell, of New York; and "The New Athletics," by Dr. John S. White, president of the Berkeley Lyceum. The latter gentleman strongly advocated the advantages of the game of football, which he characterized as the noblest of all out-door sports. Dr. Sargent, of Harvard, was obliged to omit his address on "The Physical Test of Man," on account of illness. The following officers were elected: President, Wm. Blakie; Vice-Presidents, Dr. D. A. Sargent, H. M. Starkoff, and C. C. Todd; Secretary, Dr. W. G. Anderson; Treasurer, Dr. E. P. Thwing.

—The Gouverneur Hospital, one of the smaller city hospitals, has been closed by order of the Commissioners of Charities and Correction, and the patients removed to Bellevue in order to permit a thorough disinfection and fumigation of the building; though the house-staff will remain on duty to attend to out-patients and to ambulance calls. Dr. Chalmers, the ambulance surgeon, contracted diphtheria some weeks ago from a dispensary patient, and since that time other cases of the disease have developed in the hospital. The attack of diphtheria was followed by pneumonia and endocarditis in the case of Dr. Chalmers, and little hope is entertained of his recovery. There is a proposition under discussion by the commissioners to abandon the old building entirely, and erect a new reception hospital in the neighborhood.

—The fifth annual Medical Students' Missionary Conference was held at Association Hall, on Sunday, November 25th. Dr. D. B. St. John Roosa presided, and made the opening address. Among the other addresses was one by Dr. B. C. Atterbury, of Peking, who gave an interesting account of the work done by the medical missionary in China. In the course of it he said that one of the annoyances met with was that the Chinaman was not satisfied with moderate treatment. He thought that if a small dose would cure a little of his pain, a big dose would entirely eradicate it. Dr. Atterbury first found this fact out by learning of a patient who had made up powders that had been given him from time to time, and taken them all at once, with a nearly fatal result.

—Dr. Maximilian J. Reinfelder, consulting physician to St. John's Riverside Hospital, at Yonkers, died November 30th, of disease of the heart. His father was a surgeon in the Military Academy of Munich, and he was born in that city March 4, 1821. He was graduated from the university of Munich in 1844. In 1854 he came to the United States, and some time afterwards received a degree from the medical department of the University of the City of New York. He was a fellow of the New York Academy of Medicine and a member of the Westchester County Medical Society.

—The State Board of Health has applied, through its legal representative, to Judge Cullin, in a special term of the Supreme Court in Long Island City for a mandamus to compel an organization of a health board in that city. It seems that since the present mayor, Mr. Glikin, assumed office, Long Island City has been without one, the mayor and the board of aldermen being at loggerheads, and the latter refusing in every instance to confirm the appointments made by the mayor for health commissioners.

—Of late a number of physicians in Brooklyn have been swindled by a man whose plan of operations is to call during the absence of the physician, and, presenting a bogus check for \$35 in payment of an imaginary bill for professional services amounting to \$20, received \$15 in change from some member of the family. At last accounts the swindler was still at large.

Miscellany.

FEW DRUGS IN TREATING THE AGED.

The *Maryland Medical Journal* has a word of caution regarding the use of drugs in old people—say those over sixty years of age.

In the treatment of this class of persons it is in many cases advisable, after the acute symptoms have disappeared, to stop all drugs, except, perhaps, alcoholic stimulants, and such innocent remedies as pepsin, and to trust to time and diet for the clearing away of remaining symptoms. This is especially necessary when disorder of the stomach is present.

To illustrate: A woman, eighty years of age, suffers from a very slight evening fever, said to be somewhat worse every other day; she is treated with moderate doses of quinine, under which the appetite begins to fail while the feverishness continues; she is then treated simply by diet, rest, and perhaps small doses of pepsin, and contrary to all expectations she in time regains her health. A patient of seventy years is taken with a cough and slight fever, calls in a young doctor, who treats the cough with expectorants—minute doses of ipecac, etc.—and the fever with quinine; she becomes more and more ill; an old hand takes charge, stops all treatment save a very mild sleeping-draught at night, and the patient at once shows improvement in appetite, although the cough and fever persist for a time, and with gentle tonics regains gradually her wonted vigor.

OBITUARY.

THE LATE DR. R. K. JONES.

AT the annual meeting of the Penobscot Medical Association, Dr. W. C. Mason read the following obituary of the late Dr. R. K. Jones, of Bangor:—

Dr. Jones was born at Stockbridge, Mass., July 13, 1823. He prepared for an academic education at the schools in that place, but, after being admitted to Williams College, decided not to join his class, but to commence at once the study of medicine. He received private medical instruction from Dr. Lucius S. Adams of Stockbridge, and from the distinguished and now venerable Prof. Henry I. Bowditch, of Boston. He attended lectures at the Medical College at Pittsfield, Mass., and then entered the Medical Department of Harvard University, from which latter institution he received his degree in 1847. During the year next following he was at the Massachusetts General Hospital, as medical house officer, one of his colleagues being John C. Dalton, of New York, the celebrated physiologist. After having performed his hospital service, Dr. Jones practised first at West Needham, and then at Martha's Vineyard, where, in 1853, he married Miss Octavia Yale Norris, by whom he had six children, four of whom are now living. Of these, he educated two at Harvard University, and one at the Maine State College, the youngest now being a student at the Boston Latin School. In 1857 he removed to Bangor, where he filed the office of city physician in 1862, 1863, and 1866, and that of United States examining surgeon of pensioners from 1863 until 1885. He was a member of the Massachusetts Medical Society, the Maine Medical Association, and also of that association at the annual meeting of which we are now gathered. Dr. Jones joined this society in 1859, and until his death was one of its most valued and active members. He was president of the association in 1867 and 1874. He held the various offices connected with his profession here acceptably and creditably; and those of us who best know him as a member of this society and as an associate physician will never forget that in him we found a zealous promoter of the cause of medical science, an earnest upholder of accurate and honorable practice, a profound medical scholar, an intelligent and accomplished con-

sultant, and a sympathetic and painstaking friend. He was, also, in the direct line of practice, in the daily routine of professional business, as highly regarded. Those to whom he ministered came to thoroughly trust and love him. They felt that the best which human skill could accomplish would be exerted in their behalf, and rested with confidence in his care.

A life like his, full of care and labor, was not without its joys and pleasures. He was happy in his home, and devotedly attached to his family and the many friends who had been attracted by the consistency and beauty of his daily life. A lover of the beautiful, he gathered much enjoyment from the pleasant scenes which the natural world opened before him, and with reverent spirit "looked through Nature up to Nature's God." To such it is a happy thing to live, for each day reveals

new beauty, and as the poet has said, "'Tis bliss enough to breathe and be."

Whereas, By the death of Dr. Ralph Kneeland Jones, this association is deprived of the agreeable companionship and valuable services of one of its oldest and most esteemed members,

Resolved, That we hereby desire to express our recognition of his fidelity to the best interests of this society and to those of the profession at large; and that we unite in emphasizing the skill, perseverance, and energy with which, for so many years, he ministered to the mental and physical needs of humanity.

Resolved, That with his widow, his children, and with the community, we mourn his loss, and that we shall ever remember those admirable traits of character which we should all do well to imitate.

REPORTED MORTALITY FOR THE WEEK ENDING NOVEMBER 24, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Typhoid Fever.	Diph. & Croup.	Scarlet Fever.
New York.....	1,526,081	621	235	16.69	15.04	1.12	6.08	4.16
Philadelphia.....	1,016,758	354	110	13.72	11.20	2.52	6.72	1.40
Brooklyn.....	751,432	295	108	17.00	11.90	2.04	9.18	.68
Chicago.....	760,000	—	—	—	—	—	—	—
St. Louis.....	449,160	141	49	16.33	7.81	2.13	10.65	—
Baltimore.....	437,155	131	37	14.96	14.96	4.56	6.68	.76
Boston.....	407,024	170	60	19.25	10.25	1.14	10.26	—
Cincinnati.....	325,000	84	—	14.28	16.66	3.57	5.95	1.19
New Orleans.....	248,000	104	42	17.85	14.28	7.14	1.19	—
Buffalo.....	230,000	—	—	—	—	—	—	—
Washington.....	225,000	72	23	19.46	15.29	6.95	4.17	1.39
Pittsburgh.....	210,000	—	—	—	—	—	—	—
Milwaukee.....	200,000	—	—	—	—	—	—	—
Providence.....	123,000	—	—	—	—	—	—	—
New Haven.....	80,000	—	—	—	—	—	—	—
Nashville.....	65,153	19	5	21.04	10.52	—	—	—
Charleston.....	60,145	39	15	5.12	5.12	2.56	—	—
Portland.....	40,000	10	0	—	40.00	—	—	—
Worcester.....	76,328	9	7	11.11	22.22	—	—	—
Lowell.....	69,530	—	—	—	—	—	—	—
Cambridge.....	64,079	17	6	5.88	17.64	—	5.88	—
Fall River.....	61,203	22	10	4.55	9.10	—	4.55	—
Lynn.....	51,467	12	—	8.33	33.33	8.33	—	—
Lawrence.....	40,175	15	3	17.08	5.66	17.08	—	—
Springfield.....	39,952	—	—	—	—	—	—	—
New Bedford.....	36,298	17	2	11.67	17.64	5.88	5.88	—
Somerville.....	33,307	—	—	—	—	—	—	—
Holyoke.....	32,887	—	—	—	—	—	—	—
Salem.....	28,781	7	0	14.28	—	14.28	—	—
Chelsea.....	27,552	—	—	—	—	—	—	—
Haverhill.....	24,979	9	3	—	1.01	—	—	—
Taunton.....	24,796	7	1	14.28	14.28	14.28	—	—
Brocton.....	24,784	6	4	16.66	33.33	—	16.66	—
Gloucester.....	23,187	6	—	—	—	—	—	—
Newton.....	21,105	10	3	20.00	20.00	10.00	10.00	—
Malden.....	18,932	—	—	—	—	—	—	—
Fitchburg.....	17,534	—	—	—	—	—	—	—
Waltham.....	16,651	1	0	—	—	—	—	—
Newburyport.....	13,839	3	1	—	—	—	—	—
Northampton.....	13,419	—	—	—	—	—	—	—

Deaths reported 2,371; under five years of age 722; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 357, consumption 235, acute lung diseases 234, diphtheria and croup 146, typhoid fever 31, scarlet fever 38, diarrhoeal diseases 38, whooping-cough 25, measles eight, cerebro-spinal meningitis six, erysipelas three, typhus fever one. From diarrhoeal diseases, New York, eight, New Orleans six, Brooklyn five, Nashville four, Philadelphia, Baltimore, and Boston three each, St. Louis and Cincinnati two each, Washington and Charleston one each. From whooping-cough, New York 11, Brooklyn six, Philadelphia five, Baltimore two, Boston and Washington one each. From measles, New York seven, Worcester one. From cerebro-spinal meningitis, Washington three, New York, Boston, and Cincinnati one each. From erysipelas, New York two, Brooklyn one. From typhus fever, Philadelphia one.

In the 25 greater towns of England and Wales, with an estimated population of 9,208,273, for the week ending November 2nd, the death-rate was 19.6. Deaths reported 3531; infants under one year of

age 918; measles 160, diarrhoea 88, scarlet fever 62, whooping-cough 55, fever 54, diphtheria 47, small-pox (London) one.

The death-rate ranged from 10.6 in Brighton to 23.9 in Newcastle-on-Tyne; Birmingham 18.6; Bradford 19.2; Hull 17.0; Leeds 19.5; Leicester 19.9; Liverpool 19.1; London 19.7; Manchester 24.0; Sheffield 22.2; Sunderland 21.0.

In Edinburgh, 13.1; Glasgow, 19.8; Dublin, 24.4.

In the 25 greater towns of England and Wales, with an estimated population of 9,398,273, for the week ending November 10th, the death-rate was 19.0. Deaths reported 3430; infants under one year, 889; acute diseases of the respiratory organs (London) 373, measles 189, diarrhoea 37, scarlet fever 36, diphtheria 15, fever 44; whooping-cough 40; small-pox (Preston and Hull one each) two.

The death-rates ranged from 12.2 in Nottingham to 25.6; Newcastle-on-Tyne, 25.6; Birmingham, 18.6; Hull, 12.9; Leeds, 18.6; Leicester, 14.6; Liverpool, 21.5; London, 18.5; Manchester, 25.5; Sheffield, 16.1; Sunderland, 19.4.

In Edinburgh, 13.5; Glasgow, 22.4; Dublin, 27.5.

The meteorological record for the week ending November 17, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week end'g Saturday, Nov. 17, 1888	Barom- eter.	Thermometer.				Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean	Daily Mean.	Maximum.	Minimum	S. A. M	S. P. M.		Daily Mean	S. A. M.	S. P. M.		S. A. M.	S. P. M.		S. A. M.	S. P. M.		Duration, Hours & Min.	Amount in Inches.
Nov. 11	29.76	44.0	52.0	40.0	75	46		60.0	S. S. W.	W.		12	17		C. C.			1.00	.02
" 12	30.19	40.0	52.0	36.0	60	35		38.0	S. S. W.	W.		18	6		C. C.			0	0
" 13	30.55	34.0	49.0	26.0	61	63		02.0	S. S. W.	W.		8	12		C. C.			0	0
" 14	30.42	48.0	62.0	38.0	79	62		70.0	S. S. W.	W.		20	15		C. C.			0	0
" 15	29.85	52.0	54.0	38.0	81	33		87.0	S. S. W.	W.		8	12		C. C.			12.00	.47
" 16	29.85	46.0	62.0	42.0	80	85		82.0	S. S. W.	W.		8	12		C. C.			3.00	T. 70
" 17	30.34	33.0	46.0	34.0	81	45		63.0	W.	N. S. W.		12	18		C. C.			7.00	.11
Mens for the Week	30.14		53.0	36.0				66.0											

* O, cloudy; C, clear; F, fair; G, fog; II, bazy; S, smoky; R, rain; T, threatening; N, snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM NOVEMBER 21, 1888, to NOVEMBER 30, 1888.

McLELLAN, ELY, major, surgeon, having reported to the division commander, on the 23d inst., as requested in Par. 15, S. O. 261, current series, A. G. O., is assigned to duty as attending surgeon at these headquarters, and as examiner of recruits at Chicago, Ill., from that date. Headquarters Division of the Missouri, Chicago, Ill., November 24, 1888.

By direction of the Secretary of War, leave of absence for two months is granted Major Henry M. Cronkhite, surgeon, to take effect upon his being relieved from court-martial duty at Little Rock Barracks, Ark. Par. 7, S. O. 276, A. G. O., Washington, November 26, 1888.

By direction of the Secretary of War, the leave of absence granted Captain Edward B. Mosley, assistant surgeon, in Special Orders No. 67, November 12, 1888, Division of the Pacific, is extended three months. Par. 13, S. O. 275, A. G. O., November 24, 1888.

Leave of absence for one month is hereby granted Captain Robert B. Benham, assistant surgeon U. S. A., Fort Laramie, Wyoming. Par. 1, S. O. 111, headquarters Department of the Platte, November 24, 1888.

By direction of the Secretary of War the leave of absence granted Captain John Van R. Hoff, assistant surgeon, in S. O. No. 131, November 1, 1888, Department of the Missouri, is extended one month. Par. 3, S. O. 274, A. G. O., Washington, November 23, 1888.

Leave of absence for one month is granted Captain William F. Carter, assistant surgeon U. S. Army. Par. 3, S. O. 116, headquarters Department of Texas, San Antonio, November 12, 1888.

Leave of absence for fifteen days, to take effect December 4, 1888, is granted First Lieutenant Paul Cienfuegos, assistant surgeon U. S. Army. Par. 3, S. O. 116, headquarters Department of Texas, San Antonio, November 12, 1888.

OFFICIAL LIST OF CHANGES OF STATIONS AND DETAILS OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE, FOR THE FIVE WEEKS ENDING NOVEMBER 24, 1888.

WYMAN, WALTER, surgeon, from New York, N. Y., to Washington, D. C., November 16, 1888.

LONG, W. H., surgeon, from Detroit, Mich., to Cincinnati, Ohio, November 16, 1888.

FENSENDE, C. S. D., surgeon, from Norfolk, Va., to Louisville, Ky., November 16, 1888.

PERVANCE, GEORGE, surgeon, from Cincinnati, Ohio, to Baltimore, Md., November 16, 1888.

AUSTIN, H. W., surgeon, from Chicago, Ill., to Milwaukee, Wis., November 17, 1888.

GODFREY, JOHN, surgeon, from Louisville, Ky., to Milwaukee, Wis., November 14, 1888.

GODFREY, JOHN, surgeon, from Louisville, Ky., to New York, N. Y., November 16, 1888.

MEAD, F. W., passed assistant surgeon, from Baltimore, Md., to Norfolk, Va., November 16, 1888.

GITTERACK, JOHN, passed assistant surgeon, from Camp Perry, Fla., to Charleston, S. C., November 15, 1888.

DEVAN, S. C., passed assistant surgeon, from Savannah, Ga., to Washington, D. C., November 15, 1888.

CHURCHART, F. M., passed assistant surgeon, from Live Oak, Fla., to Dupont, Ga., November 3, 1888.

BROOKS, S. D., passed assistant surgeon, from Wilmington, N. C., to Savannah, Ga., November 15, 1888.

STONER, J. B., assistant surgeon, from Charleston, S. C., to Wilmington, N. C., November 5, 1888.

LEAVES OF ABSENCE.

OFFICERS.	PERIOD.	DATE.
Bailhache, P. H., surgeon,	20 days,	November 24, 1888.
Long, W. H., "	16 "	" 21, "
Nichols, W. P., assistant surgeon,	30 "	" October 24, "
Magruder, G. M., "	30 "	" November 23, 1888
Cobb, J. O., "	20 "	" 20, "
Geddings, H. D., "	30 "	" 7, "

Representatives at meeting of American Public Health Association: Walter Wyman, surgeon, H. W. Austin, surgeon, John Godfrey, surgeon.

PROMOTIONS.

McINTOSH, W. P., passed assistant surgeon. Promoted and appointed passed assistant surgeon November 21, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING DECEMBER 1, 1888.

GAINES, J. H., surgeon, detached from the "Dolphin" and ordered home.

ANDERSON, FRANK, passed assistant surgeon, detached from the "Pensacola" and to the "Dolphin."

JONES, W. H., surgeon, detached from the "Richmond" and to the "Pensacola."

RUSSELL, A. C. H., passed assistant surgeon, detached from the Naval Academy and to the "Valash."

DEAKAY, W. H., passed assistant surgeon, detached from the "St. Mary's" and to the Coast Survey.

WHITAKER, H. W., passed assistant surgeon, ordered to the Naval School ship "St. Mary's."

LEWIS, D. O., passed assistant surgeon, detached from the Coast Survey and to the Naval Academy.

WENTWORTH, A. K., assistant surgeon, ordered for examination preliminary to promotion.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held Monday, December 10, 1888, at the Medical Library, 19 Joynton Place. Reader, Dr. A. T. Cabot, subject, "Cases of Laparotomy." Dr. W. W. Gannett and Dr. S. J. Mixer will report a case of "Chronic Ulcer of the Pylorus, with Fatal Hemorrhage from Erosion of the Pancreaticoduodenal Artery," with specimen.

F. B. HARRINGTON, M. D., Secretary.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.—The Section for Clinical Medicine, Pathology, and Hygiene, will meet at 19 Joynton Place, on Wednesday, December 12, at 7.45 o'clock.

Paper, by Dr. John A. Jeffries: "A Good Bread for Invalids, containing less than 5 per cent. of Starch," with samples. Dr. Joseph Price, of Philadelphia: "The Sequelae of Gonorrhea in Women."

Dr. E. W. Cushing: "The Pathology and Diagnosis of so-called Pelvic Cystitis, with specimens of Pyo-salpinx." Dr. W. H. Baker, J. P. Reynolds, Professor M. Rosenwasser of Woonsocket University, Cleveland, Ohio, Dr. A. D. Sinclair, Dr. S. C. Whitler, President of New Hampshire State Medical Society, and others, are expected to take part in the discussion.

A. L. MASON, M. D., Chairman.

ALBERT N. BLODGETT, Secretary.

GYNÆCOLOGICAL SOCIETY OF BOSTON.—Regular December meeting. The Society will meet at No. 19 Joynton Place, on Thursday, December 13, 1888, at 4 o'clock P. M. Paper: "Chronic Cystitis in Women," by W. Symington Brown, M. D.

THORACE C. WHITE, M. D., President.

SAMUEL N. NELSON, M. D., Secretary, 17 St. James Avenue.

APPOINTMENTS.

A. L. MASON, M. D., has been appointed Instructor in Clinical Medicine in the Harvard Medical School.

HENRY SEARS, M. D., has been appointed Assistant Pathologist at the Boston City Hospital.

Original Articles.

MESSAGE IN WRITER'S CRAMP AND ALLIED AFFECTIONS.¹

BY DOUGLAS GRAHAM, M. D.

Of all the vexatious cases that have come to me for massage in an experience of twenty years of this treatment there have been none more trying than confirmed cases of writers' cramp and allied affections. It was not with regret on my part when they gave up a conflict, the result of which was so doubtful. The history of these refractory cases in my hands has, in general, been improvement after a few massages, soon followed by relapse, abandonment of treatment, and resignation to their fate. Did I graduate the massage and exercises in quality and quantity to meet the indications of different cases? was a question that often occurred to me, and which was as difficult to answer as experts in diseases of the nervous system doubtless find in formulating the best methods of applying electricity in such cases. It was with feelings of satisfaction to me when at last a case came that was by no means indifferent to his fate, whose penmanship was his livelihood and that of his family, and whose faith had not yet been shaken by the croakings of wiseacres, and who had not been deceived by amateur rubbing dignified with the name of massage.

This case was Mr. A. J., thirty-one years of age, who was referred to me by Dr. Geo. W. Gay on the fourteenth of January of this year. He was in good general health, and his muscles were well developed. It was two years before this that he first observed that he was not writing with his usual ease and accuracy, as if out of practice. He is a professor of writing in a commercial college. He gradually grew worse, so that he had to use a larger pen-holder, and grip it harder and harder. Occasionally there were days when he could write well and easy. It was just after doing some very fine writing that had to be reproduced, and which he first outlined in pencil, that his difficulty began. When he first came to me he could write a few lines well and naturally, then the hand and arm became tired, the hand jumped and trembled, he grasped the pen more firmly, and as the fingers contracted he lost his grip altogether; so that he presented three phases of writers' cramp—tremulous, spastic, and paralytic—in one or more of which it usually occurs. When well, he wrote with his hand in the so-called regulation position, resting on the tips of the little and ring fingers, but gradually he had to let his hand descend so as to write while resting it on the whole of the middle phalanx of the little finger, and using the muscles of the forearm rather than those of the hand and fingers. At times the forefinger alone would jump from the pen-holder, and then he would hold it down with the thumb and endeavor to continue writing.

Examination of the hand revealed almost nothing—apparently slight stiffness of motion in the interossei between the metacarpal bones of the index and middle finger, but not more than is often met with in those not troubled with writers' cramp.

There was, however, not full strength in extending the fingers, which would point to over-use of the flexors, and the need of exercise of the extensors to counteract this.

It was not till after I had seen our patient a few times that he told me that nine years before he had sprained his back by attempting to shut a heavy trap-door in a steam-boat. He was beneath it, with his hands and arms extended over his head, when the boat gave a lurch, and he was suddenly thrown backwards. For this he had constantly worn a corset which enveloped his whole trunk, in order to support his back. With this he was comfortable, and did not require to lie down to rest during the day, but without it he drooped and sagged down, and soon a burning spot appeared about the middle of the dorsal region. Examination proved that there was nothing at all the matter with his back, unless it were muscular weakness, due to having worn the corset too long. After two massages the patient felt as if he had a new back, and could go for half a day without his support, and in the course of two or three weeks it was laid aside entirely. If the condition of his back had anything to do with his trouble in writing, the latter ought to have appeared much sooner. Neither do I think that imagination had anything to do with his writing, for he did not know what was the matter with him until the day he was sent to me.

To keep the patient at his work, and at the same time attempt to get him well, was the problem to be solved. For home exercises I prescribed at first active extension and separation of the fingers, and later the same against resistance by means of rubber bands and tubes, so many movements at stated times, in order to bring into greater action the less used extensors, and also to give a change of exercise to the interossei, and thus help to restore the lost equilibrium of will, nerve and muscle. But to prescribe writing exercises for a patient whose chirography was like copper-plate did not seem so easy a matter. However, I had no difficulty, for it was evident that he was painfully slow and particular, and when fatigue came on after a few lines he had hitches in rounding the backs or left lower curves of his P's and e's, and in making the upward stroke of the leg of his g's. Therefore, for home exercises in writing I directed large P's made quickly and continuously, followed by the reverse of these, making m's, so as to make him write from the upper arm and shoulder. As time went on, we gradually reduced these in size, so as to bring more into play the muscles of the forearm and hand. When he had become proficient in these, the next exercise was a little more difficult, and consisted of *lelelele*, large and rapid at first, then gradually diminishing, and later the exercise was *legleg*, practised in the same manner many lines at a time, and in this way he soon got over his hitches and halts.

But calisthenics and elementary writing exercises, though helpful, have never been known to cure a case of writer's cramp without other assistance. And for this purpose I gave the fingers, hand, and arm massage, deep manipulation, almost daily for four weeks. After the first two massages the patient wrote with unusual facility, but tired as soon as usual. After the third massage he was fatigued at the end of the first line, and it is a wonder he

¹ Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Suffolk District Medical Society, October 10, 1888.

did not give up treatment then, as these cases are apt to do. After four massages he wrote with greater ease, and made delicate movements of fingers and thumb which he had not been in the habit of doing, and he was but slightly fatigued with ten lines. After the third massage, which included the back, he was almost faint with hunger, though he had just had dinner before coming to me. I have observed the same effect in other cases, in one a physician, from percussion alone for a few minutes on the back. At the fifth visit there was some lameness of the muscles of hands and arms from the manipulation, which had not been rough, and this is generally a good omen. He thought the writing exercises which I prescribed for him were excellent practice to train his boys at the commercial college to write a free, easy, and rapid hand, so he used them for that purpose. After the fifth and sixth massages, wrote still more easy and for an hour and a half each time, stopping occasionally to explain to his students. At the end of nineteen days he had no difficulty in grasping his pen-holder, and he could write with ease for three hours, and at the end of twenty-eight days he wrote with ease and fluency and animation. And thus he improved, with variations, but all the time making a better average.

At times we had to call a complete halt for a few days in his home exercises, when it was evident that he was overdoing and getting his nerves and muscles into an irritable condition, which was relieved by massage alone. But when this condition has arisen of its own accord or from writing, in other cases, it might be an indication to urge them on with exercises in order to tire out the affected nerves and muscles and their central connections, and thus allay over-excitability. The same means incites nerves and muscles that are inactive, but here, in order to be of benefit, must stop short of over-exciting them.

Our patient might have been discharged at the end of four weeks, but this was not in accordance with his wishes, for he did not then feel safe without the aid of massage, so he continued to visit me two or three times weekly for several weeks longer. At the end of six weeks, though he was generally fatigued from sickness and death in his family, yet he had not the slightest difficulty in giving his writing classes full instruction from nine to twelve o'clock, and it was during the last ten days of this time that I thought it well for him to have a tonic consisting of five minims of tincture of nuxvomica, twenty minims of caseara cordia, with thirty-five drops of elixir of calisaya, three times daily. He called upon me again ten weeks from the time I first saw him to report that he had attained perpetual motion, for the longer he wrote and the more he exercised, the easier they became and the better he felt. I have heard from him recently, and he has continued well. Without this patient's hearty co-operation, he would doubtless have sunk into the slough of despond.

The two following cases are the kind not likely to be benefited by massage nor anything else:—

Mr. W.W. was forty years of age, well nourished, and had good strong muscles. When eight years of age he had scarlet fever, which left him with general neuralgia, from which he has never fully

recovered. He was a clear-headed man of business, though he suffered from dull headache all the time, slept poorly, and woke up tired. He was not so well when on a vacation for a few days as at business. He had general feelings of burning, fatigue, and stiffness, and also heaviness of the legs. There was literally too much tension of both mind and body. He was evidently a pronounced case of neurasthenia. From the time he learned to write until he was eighteen years of age he wrote a large free hand, but at this time he became a clerk, and wrote a small careful hand, slowly, and with increasing difficulty. In January, 1883, he was much run down, and work was hard for him, and during the following month he had to stay at home with indefinite symptoms of prostration and fever. When he returned to business he could not write at all in the usual way, but took the pen between the index and middle fingers. At first there was flexor spasm of the fingers and thumb, accompanied with extensor spasm, in dorsal flexion of the hand. After a time he was obliged to give up writing nearly altogether, so that by September of the same year he had to limit himself to the signing of his name. More than this caused the hand to tremble, the fingers and thumb to flex, then the hand would curl up in the wrist, and the cramp became so painful that he had to desist. Counting coin produced the same symptoms in the left hand. He suffered most from discomfort and tension throughout the whole of the right side of his body; his right eye was incorrigibly astigmatic, and he had catarrh of the middle ear as long as he could remember.

He went to Europe and visited an eminent specialist twice a day for a month for massage, writing exercises, and calisthenics. He came home labelled "cured," but he could not write any better. As he had previously been to me for his general troubles, my method of doing massage stood still higher in his estimation for his visit to Europe. So he came to me for a special trial at his writers' cramp. Under a month of daily massage with the use of Jacoby's wristlet and elastic tubes to exercise the extensors of his thumb and fingers at home, and practice with Nussbaum's writing apparatus, no benefit ensued. His business was in a bad state, and he was under constant worry. This is one of the cases not likely to be improved by massage, or if so, only temporarily.

Mrs. F. H. was forty-nine years of age, and for the previous twenty years had written much. Three years before coming to me she first noticed that it troubled her to hold her pen. There was nothing peculiar about her handwriting, but after a few lines the thumb slipped off the pen-holder by gradually extending itself (chronic spasm), and this was attended with pain in the metacarpal space between the thumb and index finger, and at the outer aspect of the insertion of the biceps, in the region of the musculo-spinal nerve, as well as in the anterior fibres of the trapezius and at the base of the skull. With the pen between the fore and middle fingers she could write fairly well for ten minutes, but more than this caused pain in the places just mentioned. The whole arm felt lame and heavy. Housework, such as dusting or ironing, was difficult, and every motion of the arm caused pain. The left arm had been similarly affected for

three months. After I had seen her a few times, she admitted that she felt somewhat ashamed of the unusual but natural prominence of the metacarpal phalangeal joints of the thumbs, and in order to partly conceal this, she had been in the habit for many years of moving this part of the right thumb into the palm of the hand. Hence, no doubt, had arisen spasm of the adductor pollicis, and on examination it was found that this muscle was sore and tender. Her general health had always been delicate. She slept poorly, was dyspeptic, constipated, had uterine catarrh and various other ailments. She had been utterly proof against all sorts of medication in the hands of the most skillful gynecologists and neurologists. Massage had no better result, but with a Nussbaum's apparatus she gets along very well.

I might weary you with such doleful accounts of unsuccessful cases. Suffice it to speak of a few of them briefly. Of three obstinate ones that were reasonably persistent in treatment, the results of massage and movements, and subsequently the use of electricity and subcutaneous injections of strychnia were unsatisfactory, though the affected members became stronger and disagreeable feelings disappeared. They all arose from over use. One was inability to write, another could not play on the piano, and the third experienced great difficulty in telegraphing. They presented the usual symptoms of such affections, without spasm and tremor. So far as I have had access to Wolff's numerous cases, treated by massage and exercises, spasm and tremor were the prominent features of his successful ones.

But with quite recent or incipient cases of writer's cramp and similar troubles, my experience has been much more cheerful, the patients recovering safely, quickly, and pleasantly with a very few massages, so that they remained in blissful ignorance of how near the rocks and shoals of disability they had been sailing. In 1877 I reported several such cases in the *New York Medical Record*, which need not be repeated here, but I will only mention one of more recent date. It was that of Miss E. P., twenty-eight years of age, of slight frame but tolerably firm muscles. The previous winter her arms and hands would frequently get tired from playing the piano, but would recover by resting for a day. She had the same experience the following winter before she came to me. Three days before her appearance she had played the piano for three and one-half hours, too long for her, with the result that the hands and arms were greatly fatigued, and there was twitching of the muscles, and rapid slight contractions of the fingers, alternating with a dull ache, and the whole arms felt lame to the shoulders. Under two days of rest alone her symptoms had become worse, and on the morning of the third day, when she first came to me, she could not turn a newspaper nor play a single note on the piano, and there was slight swelling of the affected members. Thirty minutes of stroking or *effleurage*, alternating with deep massage, at 10.45 A. M., was accompanied and followed by perfect comfort for six hours, and the slight discomfort which then returned was forgotten in the social enjoyment of the evening. Next morning slight return of the symptoms below the elbows, none above. Massage at 3 P. M., with greater effect. She returned again after two days'

interval and reported that she had played the piano for fifteen minutes the previous evening, and thirty minutes next morning, with but little uneasiness. Massage of one arm, she said, relieved the other before it had been *masséed*. After the third massage she regarded herself as cured, and said that she would certainly return if she were not. As I have not heard from her, she probably fully recovered, for eighteen months have elapsed.

In this last case the advantages to be gained by months of rest were evidently made much more secure by three massages in a few days. Zabloudenski has made some interesting experiments, showing how fatigued muscles are influenced by massage. After severe exercise a rest of fifteen minutes made no essential difference in the fatigued muscles, but after massage for the same period the exercise could be more than doubled over what it was at first. One person experimented upon lifted a weight of one kilogramme (two pounds eight ounces) eight hundred and forty times from a table on which the arm rested horizontally, by extreme flexion of the elbow-joint, at intervals of one second, and after this he could do no more. When the arm had been *masséed* for five minutes it lifted the weight more than 1100 times in the same manner as before, but without fatigue. The difference in muscular sensation was very striking after rest alone from work in comparison with that after massage. After six hundred lifts of two kilogrammes, the feeling was that of unchanging stiffness during and after a pause of five minutes for rest, but after five minutes of massage the muscles felt supple and pliable.

The effects of massage in these cases are much the same as in others,—pre-eminently tonic and sedative. Gentle stroking may be used for its soothing impression upon the cutaneous nerves, as well as to push along the superficial lymph and venous currents; deep kneading for its anæsthetic effect, and to hasten absorption of effete products in all the accessible tissues, to bring a rapid supply of fresh blood while hurrying on that which is laden with asphyxiated juices. Percussion may be used to stimulate a languid skin and muscles deficient in contractility.

The suggestion which I published eleven years ago, with regard to these cases, has not suffered with the lapse of time. It was that when sufficient time for rest has been allowed, and in the absence of spasm, or spasm alone of the flexors being present, it might be useful to add resistive motion, so as to bring into more powerful action the opposing and less-used extensors, as this would tend to restore harmony of action by a counterbalancing distribution of will, nerve, and muscular effort. Numerous claimants for priority in the use of massage in writer's cramp have sprung up since then.

— The largest professional fee for limited service is said to have been paid to Surgeon-Major Freyer, of the Indian medical service, for treating the nawab of Rampoor for three months' suffering from rheumatic fever. The nawab gave him a lac of rupees, \$50,000.

A CASE OF CHRONIC BRIGHT'S DISEASE.

COMPLICATED WITH HEMORRHAGE INTO THE
PONS VAROLII, WITH AUTOPSY.¹

BY D. E. BAKER, M.D., NEWTON, MASS.

THE patient, a married woman at the age of forty-three, first came under my care May 23, 1886. For some months previous she had been under the care of a homœopathic ophthalmologist, who had told her that inflammation existed about the left optic nerve and yellow spot, with partial paralysis of one of the muscles in the eye. The urine had been examined with negative results. For a number of years she had slept considerably each day in addition to sound slumber at night. For a year menstruation had been irregular.

After attending church twice on the above date and entertaining guests in the evening, she suddenly felt faint and dizzy, and ineffectually tried to fan herself. Consciousness remained unimpaired. There were no convulsive symptoms. She felt severe pain with a peculiar bad feeling in the temples, while simultaneously the left side became nearly powerless. I found her pale, bathed in cool perspiration, with but slight control of the left side. The speech was thick and inarticulate. She could swallow with difficulty, choking meanwhile. The mouth was somewhat drawn to the right; the tongue protruded to the left; the left cheek was flattened. I did not then note strabismus or inequality of the pupils. The pressure clasp of the left hand was barely perceptible. The left thumb could be moved over the palm, but the fingers seemed incapable of separate motion, and the left leg and foot were powerless. The entire side was anæsthetic. Temperature 98°, pulse 104.

The next day the patient tried constantly to talk, but could not be understood. There was no apparent dulling of the intellectual faculties or failure of the mental grasp of words. After a few days the speech became plainer at times, when the patient was startled or especially eager to be understood. There was great restlessness, which was allayed by the bromide of sodium. The eyes were bright. The right pupil was smaller than the left. The fundus could not be examined to my full satisfaction, but later I detected white streaks in the neighborhood of the macula.

Three days after the attack retention of urine occurred, and for nearly a week the catheter was necessary. Subsequently there was at times incontinence during sleep at night. When first examined the urine gave a spec. grav. 1010; the quantity per diem was thirty-eight ounces; the color light, turbidity and sediment considerable, reaction faintly acid, albumen one-eighth per cent., urea diminished. The microscope revealed hyaline and granular casts.

The left side remained more moist and cool than the right, and showed œdema, which increased for two weeks, then gradually declined. Early in June the articulation began to improve slowly, but varied in clearness from day to day. The tongue was put out straight. There was a feeling of numbness or thickness on its left side. The left arm and leg felt lifeless to her, according to the

rule in such cases; sensation and motion first reappeared in the paralyzed leg, which the patient could slowly draw up by the third week of her illness.

Dr. S. G. Webber saw the case in consultation on June 5th, and finding the right eye crippled in its movements, with failure of the pupil to dilate when the lids were closed, thought that these facts, in connection with the left paralysis and other symptoms pointed to a hemorrhage into the upper part of the pons.

The first signs of returning sensation were numbness, formication, and tingling in the disabled side. Sensibility to heat and cold was at first slight. She could not at first discriminate the two, the touch of ice on the left hand giving the sensation of a hot iron. The reflexes were from the first feeble, and no marked contrast on the two sides could be obtained in reference thereto.

For several weeks the right pupil remained smaller than its fellow, but the responsive power to light gradually improved. The eyeball on this side was turned to the left. There was a slight inclination of the head in the same direction. During the first month of the disease the patient suffered from catarrh in the left naris. There was a similar trouble in the corresponding eye. The temperature after the first week did not rise above 100° F., but the pulse remained high throughout, averaging 120. Cathartics were in frequent requisition to relieve an abiding tendency to constipation. After the 1st of August there was constant complaint of pressure, weight, and pain about the bowels, partly due to tympanitis, perhaps not a little resulting from dropsical effusion, which, appearing first about the feet and legs, soon involved the abdominal parietes and cavity.

The patient had at times a fair appetite. The diet consisted largely of milk, but meats and fruit were not withheld. The chlorides of iron and arsenic were given three times a day, with improvement in respect of the color and blood-condition of patient. I alternated cum above. Her vision did not become clear. She could read only the coarsest print of the daily advertisements. The handwriting was a trembling, zigzag scrawl. Diplopia was at times quite troublesome. At first the second object was seen above its mate, but later at its right hand. Ultimately, the crippled eyeball largely recovered its power. About the middle of August hyperæsthesia developed. Pain was caused by a light touch on arm or leg; for some time her nurse had to omit the daily bath. The patient occasionally asked to have her "graveyard leg" moved. Almost simultaneously she had begun to complain of a terrible constriction about the temples and occiput, as though a ribbon was drawn tight around the head. Strength had returned to the left upper extremity in so far that she could raise the hand eight inches from the arm of her chair, and by much fumbling could move it up to her chin. These movements were attended by tremor.

Digitalis for a time diminished the œdema of the extremities and relieved the dyspnoea incident to her disease, but its use was not persisted in for any length of time, as after a few days no further gain could be noted.

¹ Read at a meeting of the Middlesex South District Medical Society, in Lexington, October 12, 1887.

Several severe attacks of faintness and dyspnoea occurred during August and September, and twice I detected signs of pulmonary oedema. Stimulants and cupping brought relief. The cardiac area of dulness was somewhat enlarged to the left. There was no evidence of valvular trouble. Breathing was free only when the sitting posture was retained. After August 1st the woman slept in her chair, saying she knew she would suffocate if she lay down. During July the urine had increased in quantity to between four and five pints daily, and was of lower specific gravity. She had recovered strength so far as to take a few uncertain wavering steps from her chair, with the support of one person. If she attempted to even stand alone she swayed from side to side; the gait was unsteady at best. In early autumn, nausea and vomiting were prominent symptoms, and often accompanied by great restlessness and mental depression. The urine diminished in quantity again. The albumen had increased to one per cent.

The legs began to ulcerate in November. From these openings, as well as from fresh holes previously made, several pints of serum discharged daily. This outflow did not give much relief. The dyspnoea increased, whistling râles could be heard on inspiration. Hot-air baths had been tried a month before, but gave no relief and proved depressing. Cathartics afforded more comfort than any other line of treatment. Cupping gave some relief to the dyspnoea. Patient at times leaned forward and braced her shoulders up in her struggle for breath.

At four o'clock, December 23, patient waked in her chair with severe lancinating pain in the precordia and left side. I found on examination a marked increase of the area of precordial dulness. There was flatness over the left base, front and back, below the third interspace. The heart sounds were very feeble at the apex, but slightly intensified by pressure with the stethoscope. On auscultation a loud friction murmur, reduplicated on the cardiac impulse, was heard over the left side below the second rib, having a maximum intensity and a musical quality over the base of the heart.

Above the fifth rib, voice and respiration were bronchial. Below that limit there was absence of respiration. Sibilant and subcrepitant râles could be detected over other parts of the chest. The cheeks were flushed, but temperature and pulse were not much increased.

Pain was relieved by painting with tr. iodine. Stimulants and milk constituted the internal treatment. The family were warned of the end, which came abruptly twenty-four hours later.

The autopsy, thirty hours after death, disclosed an abundance of serum in the cellular tissue and large cavities. The brain was pale and oedematous. Nothing abnormal was detected in hemispheres, ventricles, and ganglia. An oval, softened blood-clot, the size of a cherry, occupied the right anterior portion of the pons, encroaching slightly on the corresponding crus cerebri. A wavy reddish-brown cyst wall separated the yellow fluid contents from the surrounding tissues. The pericardium contained five ounces of turbid fluid holding flakes of lymph in suspension. The base of the left ventricle was roughened by patches of recent lymph deposit. The heart weighed seventeen ounces. The wall of the

left ventricle was four-fifths of an inch thick. Both lungs were oedematous. The left lower lobe was of the color and consistency of the spleen, and non-crepitant. Bloody serum exuded from the cut surface.

Both liver and spleen were increased in size and firmness.

The kidneys weighed three ounces each. The capsule was readily detached, exposing a smooth, mottled surface and showing yellow patches of varying size.

On section the pyramids stood out from the cut surface and were much darker in color than the cortex. Streaks of a yellow color extended outward from the bases of the pyramids. The zone of the glomeruli presented translucent points and lines which turned mahogany brown on the addition of iodine.

The case illustrates an interesting variety of pathological processes, the sequence of which may not be fully unravelled. The primary cause of death may be differently estimated. Was amyloid degeneration or the nephritis the prior affection? and was either or neither the cause of the vascular degeneration that induced the brain lesion? The history of the habitual abuse of alcohol by the father, and of death by phthisis of a brother, of the patient may be interpreted as establishing a tendency toward the first-named disease. Is it conclusive against a tendency to the last-named disease?

The kidney process seems to me to have been responsible for the steady march of symptoms to a fatal issue, for the enlargement of the heart and the consequent increase of arterial tension, for the degeneration of the cerebral vessels that ruptured when that tension had augmented during a day of unwonted activity and excitement.

Of the marked symptoms of the pontine hemorrhage, all but the lack of co-ordinating power gradually abated.

REPORT ON DISEASES OF CHILDREN.

BY T. M. ROTCH, M. D.

GLYCERINE ENEMATA IN CHILDREN.¹

GLYCERINE enemata have of late attracted so much attention in the various periodicals, that a series of experiments with them on children, by G. A. Carpenter, of the Evelina Hospital for Children, Southwark, may be of interest. Carpenter says that a large number of children treated in the hospital require a laxative, constipation being more or less marked, in some due perhaps to defective maternal training in that respect; in others to the sedentary existence consequent on hospital régime, or to a combination of both causes. At the Evelina Hospital children are not allowed to pass more than two days without an action of the bowels. The results of two hundred and fourteen enemata given to sixty-three children during four months are tabulated according to sex, age, disease, quantity of glycerine used in drachms, time taken to act, and number of movements. An analysis of this table shows that an action of the bowels followed in five minutes or under in ninety-five instances, in ninety in thirty minutes or less, and in four the time was not recorded. In the cases where the enemata failed

¹ *Lancet*, Nov. 10, 1885.

to produce the desired effect, it was noted that the failure was only temporary, and that in these children the bowels responded to the glycerine at one time or another, and in no case was there a complete failure.

As regards the quantity of glycerine used, one drachm was given to one hundred and fifty-six cases, a drachm and a half to forty-eight cases, two drachms to seven, and on two occasions three drachms were injected. In one hundred and fifty-four instances the injections were followed by normal movements, in twenty-six the movements were loose, in eighteen they were of more than the natural consistency, in six the enemata were followed by scybala, and in ten they were returned or failed to act.

In no instance were the enemata attended by unpleasant symptoms either locally or constitutionally. Reviewing shortly these results, Carpenter says that he is very favorably impressed with glycerine enemata as compared with the laxatives and purgatives usually employed; he finds that they are easy of application, unattended by the slightest pain or discomfort, quick and natural in action, and seldom fail.

RAPIDLY FATAL CHOREA.²

Cook and Beale report a fatal case occurring in a girl of nine years, in whom the choreic movements constantly became worse; delirium developed with slight fever, rapid and feeble pulse, and rapid and interrupted respiration. Death suddenly occurred one hundred and thirty hours after the onset of the disease.

The autopsy revealed extreme anæmia of the pons and medulla, but no other changes of note in other parts of the body.

INTUSSUSCEPTION.

The recent valuable paper on intestinal obstruction, read by Professor Fitz before the Congress of American Physicians and Surgeons, directs our attention to the large proportion (32%) of cases of intussusception occurring in the series of two hundred and ninety-five cases of obstruction which he has so carefully analyzed. When from this series the cases of least clinical importance were excluded, it was found that out of two hundred and thirty-six well-authenticated cases of the more practically important forms of obstruction, ninety-three were represented by intussusception, and of these ninety-three cases a large proportion, thirty-one, were under the age of one year.

Intussusception is then more common in the first year than at any other period of life, and it would seem, from the clear clinical picture which it usually presents after the first forty-eight hours of the disease, that its diagnosis would be a simple matter and not attended by any great degree of difficulty or uncertainty. In practice, however, it is found that, as a rule, the diagnosis of infantile intussusception is not made until the disease is well established. In almost every case the early hours of the disease present symptoms which are mistaken for those of simple indigestion, and remedies are administered, which when thought of in the later stages of the invagination, cannot but cause a feel-

ing of regret that the correct diagnosis had not been arrived at earlier. When we consider what a purely mechanical condition an intussusception presents to us for treatment, and how every hour of delay increases the difficulty of successfully reducing the invaginated intestine, it is well to report those cases which, by being treated early, have recovered without the aid of laparotomy. In this connection the two cases reported by F. R. Humphreys, in the *Lancet* for October 27, 1888, are of great value and well worthy of record, Humphreys' remarks on the mechanical treatment by the rectum being of especial interest and practical importance.

Case 1. Male, two years and a half old, taken ill January 21st, 11 A.M., after a good breakfast at 8.30 A.M. Sickness, followed by diarrhoea (with a streak of blood in it) and abdominal pain, were the first symptoms. The pain was intermittent, but very frequently repeated, and the child turned over on to his stomach on each recurrence, seeming to be in considerable distress. He was first seen early in the afternoon. He was then vomiting everything that he took, while at the same time he was complaining of hunger. The pulse was 118; respirations, thoracic, 32; temperature 99.2. The abdomen on the right side was rigid and dull, and there was a lump to be felt about two inches to the right and one inch below the umbilicus. Considerable blood had been passed by the rectum. At 9.30 P.M., about two and a half ounces of pure blood, not clotted, had come from the rectum. On examination of the abdominal tumor, previously noted, distinct peristaltic movement was detected in it; it did not appear to have altered its position; it was about the size of a large walnut. An examination of the urine showed plenty of phosphates but no albumen. A No. 8 gum-elastic catheter was attached to a Higginson's enema syringe, and about eight ounces of warm water were injected into the rectum, the catheter being passed about three inches. After a little difficulty, with the injection of the last half-ounce something seemed to give, and the child moving, the catheter slipped out. Only slight force was used. On examination of the abdomen the lump had disappeared and the colon appeared to be full of water. Chloroform was unnecessary, the child being very good. A pad and bandage were then placed on the abdomen, the pad being over the right iliac fossa. A few minutes later, on being placed on a chair, the child passed about four ounces of water tinged with blood. The next day, after having passed a good night, without sickness, pain, or passage of blood, the bowels were easily and naturally opened. The abdomen was rather tender, but no lump was to be felt, and the child appeared to have nearly recovered. Later in the day, however, pain came on again, the right knee being drawn up and the head and body being thrown back during the paroxysms, but, unlike the first attack, the child was not restless. There was dulness and tenderness at the spot where the tumor had originally been noticed. The temperature was 99°. There was sickness on the 25th and 26th.

The pain continued with short intervals until February 9th. On the evening of the 27th there was a constant gurgling in the right iliac fossa, and opium was given for the pain, but without any effect. On February 3rd a glycerine enema seemed to act

² British Medical Journal, 1888, 1: 795; American Journal Medical Science, Nov., 1888.

well, both in emptying the rectum and relieving the pain. By February 8th the child had lost considerably in weight and had become very pale and weak. On the 10th the pain had left him, and by the 3rd of March he appeared quite well. The unusual feature in this case was the persistence of pain after the reduction. This pain, moreover, was situated just at a point where the lump was observed to have disappeared, and was periodic in character, being evidently determined by peristaltic action. It appeared possible that the intussusception had been incompletely reduced, as the caput caeci when congested has a tendency to retain the depression. As opposed to this view was the absence of gurgling or the rising of a coil when the pain occurred. The only other suggestion in explanation of the prolonged symptoms was the injury inflicted by the strangulation. That this injury was severe was proved by the escape of so large a quantity of blood. It is probable, therefore, that the continued pain must, according to Humphreys, be attributed to the remaining swollen condition of the intestine, with its accompanying local enteritis, or rather, colitis.

Case 2. An infant eight and a half months old, was first seen August 9th. It had apparently been in perfect health up to 3 A.M. on the 8th. At this hour it was seized with vomiting and pain, and a few minutes later passed a bloody stool. From that time up to 11 P.M. on the 9th, there was incessant vomiting and constant flow of blood-stained mucus and serum. Once a little solid darkish material passed. When seen, the condition was as follows. The infant was a fine one and breast-fed. It lay on its back with its knees drawn up, but every now and then put itself in the opisthotonos position, or one approaching it. It looked drawn and anxious. The pulse was full, the tongue red. Examination of the abdomen showed no change apparent to the eye; to the touch there was resistance under the right rectus, midway between the umbilicus and pubes, and dullness on percussion. The abdomen was tender everywhere, but especially so over the region of dullness. Under chloroform nothing further was detected. Rectal examination showed the bowel to be empty as far as the sigmoid flexure. Nothing like a tumor was to be found anywhere.

In spite of this, as the symptoms pointed to intussusception, the infant was first allowed to come out of its chloroform, and then a pint of water was injected with a Higginson's syringe, though a No. 8 catheter passed well into the rectum. The water was not retained, but a second attempt was more successful, and after injecting slowly sixteen ounces, the infant suddenly stopped crying and appeared to watch attentively the sensations it was experiencing in its abdomen, and its expression became one of relief. Four more ounces were then injected to make sure of the reduction. The blood ceased to flow at once. The vomiting went on for twenty-four hours longer, the temperature rising to 101.2° F., but most of this disturbance was accounted for by the child being in the act of cutting its teeth, as it made a rapid and perfect recovery.

These cases, provided that the diagnosis of intussusception was correct, illustrate the ease with which certain forms of invagination can be managed

if the treatment is early and prompt. (The case of invagination in an infant six months old, reported March 9th, 1882, by Rotch, presented conditions which, as shown by the post-mortem examination, would not only have received no relief from an injection of water, but from the twisted position of the retained caecum would have become still more tightly fixed by the water.) Humphreys considers that the mechanical problems involved in the process of reduction of an intussusception seem to show the following results. If we take the invaginated portion of the intestine as wedge-shaped, it is evident that the base of the wedge may be considered as pointing upwards in the direction of the stomach or downwards towards the rectum, according as the invaginated part is swollen sufficiently to dilate the intestine outside it, or as it is smaller than its own neck where the compression takes place. If the wedge's base be directed downwards, then, since the intestine is fully dilated, and since a force applied to a mass of liquid under such circumstances acts equally in all directions, then a considerable part of the forces which act on the sides of the wedge tends to drive it downwards. This resultant will, at any rate, tend to retard, to a considerable degree, the reduction of the bowel. If, on the other hand, we have previously emptied the oedematous parts by pressure, either from within or from without, then we have the wedge's base directed upwards, and all the force applied at the rectal end tends to drive the invaginated bowel in the desired direction. As regards the other forces called into play, we need only consider that one which acts at the neck of the invagination in an upward direction, and half of whose power acting on the outer intestinal wall is at once lost, and that one which dilates the intestine. The former it is unnecessary to consider further; the latter, brought into play, as it is, on the same principle as is employed in a Bramah's press, may be enormous, and quite capable of rupturing the intestine if not kept carefully under proper control.

(To be continued.)

Clinical Memorandum.

SYPHILIS OR TUBERCULOSIS? ¹

BY F. W. STUART, M. D.

A. B., twenty-six years old, born in Germany, came to this country in 1884. His father and his mother, respectively fifty-eight and fifty-three years old, are both living in good health. His paternal grandparents died, the one at eighty-two, the other at seventy-nine, from causes unknown to him, or, as he expresses it, from old age. His maternal grandfather died at sixty from "old age," and his maternal grandmother at forty-five from intestinal obstruction. His uncles and his aunts were all living when he left Germany, and, so far as he knew, were all in good health. His only brother died at twelve from "dropsy," which was attributed to a blow on the chest resulting from a fall. He had no sisters. The patient claims that up to 1886 he always enjoyed good health. He says he never had any form of venereal disease, though he admits occasional

¹ Read before the Section for Clinical Medicine, Pathology, and Hygiene, of the Suffolk District Medical Society, Oct. 30, 1888.

intercourse with prostitutes before marriage. He denies loss of hair, headache, lumps or spots of any kind, sore throat, or any of the usual symptoms of syphilis.

He was married in 1885, and an annual baby has been the result. The one born in 1886 lived to be six weeks, the one in 1887 to be fifteen days old. The mother could nurse neither of these owing to entire absence of milk. I have been unable to ascertain any facts about them that have any special bearing on the father's case. The third child, born in August, is still living, and seems to be in good health. This time the supply of milk was at first ample, but is already scant.

As stated above, until 1886 A. B. enjoyed good health, but then he suffered from attacks of acute pain, which were attributed by the attending physician to a movable kidney.

In June, 1887, he crushed the index finger of his right hand in some machinery, but the injury was so slight that he attached but little importance to it. In about one week he noticed a swelling over the metacarpal bone corresponding to this finger, and later similar swellings on the ulnar side and flexor surface of the wrist. These and other abscesses on his hands, wrists, and head were opened after four to five weeks of painless growth, but all failed to heal promptly. In November the right elbow began to swell, and at the same time he complained of short, shooting pains in his left knee, which were worse in wet weather, and prevented walking.

About the end of November the middle phalanx of the finger was removed, and two openings were made in the swelling on the under and outer side of the elbow and a drainage-tube was put through. The tube was removed at the end of twelve days, but the openings still discharge. In January the index finger was amputated at the first joint. He was now continually confined to the bed, and on March 31st entered one of the charitable institutions of the city. Through the kindness of the resident physician I have been able to consult the hospital records of the case. At the time of entering there were noted several crusts on the wrists and hands, a small fluctuating swelling between the knuckles of the third and fourth fingers of the left hand, cicatrices behind the right ear, on the brow, near the internal canthus of the right eye, and the external canthus of the left. The right elbow was enlarged, and stiff with two openings discharging pus. The left knee was enlarged, with a fluctuating swelling on the inner and the outer side. The knee was bent and could not be extended.

He was given ten grains of iodide of potassium three times daily, and appropriate local treatment was carried out.

On April 28th the knee was aspirated and four ounces of mucopurulent fluid were removed. On May 14th the amount of iodide was increased to fifteen grains three times daily.

On May 18th a free incision into the joint was made and considerable turbid fluid evacuated. The joint was filled with "tubercular" material, and some erosion of the cartilages was noted.

On June 12th the knee was amputated. The stump healed by first intention.

Towards the end of June the patient insisted on leaving the hospital.

He next was cared for by Dr. Thompson, who prescribed the "Mistura L." of the Boston Dispensary formula. This mixture gives about one-third of a grain of the red iodide of mercury and eleven of the iodide of potassium to a teaspoonful.

In August I was asked by some of his German friends to take charge of the patient solely because I could speak German to him. He told me he thought he was improving slightly. I found him emaciated, unable to sit up in bed, and the physical conditions practically the same as when he entered the hospital. In particular I noticed that the right knee was now swollen, and there was also an abscess on the stump of the left knee. There was a very large swelling on the inner side of the right elbow, which was markedly fluctuating.

The heart and the lungs presented nothing abnormal. Though a diagnosis of general tuberculosis had been made, I determined to push antisyphilitic treatment, and ordered twenty grains of the iodide of potassium before meals, in addition to the mixture L. after meals.

Improvement was now rapid: the swelling of the right knee disappeared entirely, and that of the elbow was much reduced, the joint becoming freely movable. By the middle of September the patient was able to walk three miles, and complained only of the pain in the shoulders which the crutches caused him.

During the last week in September he failed to retain his medicines, and complained that merely looking at the bottle served to nauseate him. I accordingly told him to omit it for two weeks. The improvement in his general condition was so great that he expected to begin work as a cigar maker October 1st. No position being open, October 3rd he worked for ten hours at fret sawing, which required constant motion of the affected elbow. The next morning he complained of great pain in the joint, and on removing the bandage a considerable quantity of pus was discharged from the openings already spoken of. The joint was swollen considerably, and deep furrows marked the upper and lower edges of the bandage. I now renewed the antisyphilitic treatment, giving the iodide of potassium in tr. gent. co. before meals, and the mercury in pills after meals.

Present condition. Patient has gained greatly in strength and weight, and yesterday walked to the city. All of the ulcers on his hands have healed, and the swelling between the knuckles of the left hand has disappeared. The swelling on the flexor surface of the right wrist has almost disappeared. The elbow joint is greatly reduced in size. The swelling on the inner side is reduced to the size of a walnut, and that on the outer side is not marked, though the openings still discharge pus. The ulcer on the stump has healed, while that on the ulnar side of the wrist is about one half as large as when I first saw him.

In making the diagnosis I think only two diseases need be consulted, namely, tuberculosis and syphilis. It seems to me that the history of the case does not point in either direction. The family history is good and the lungs are healthy. He denies syphilis, but, where it is suspected, I think it unwise to give

any weight to the patient's denials. I do not see how we could differentiate between these two affections, except by noting the results of careful and persistent treatment.

If the lesions be due to syphilis there is moderate hope for complete recovery, whereas if they be of a tubercular nature the prognosis, it seems to me, is bad, even as regards time. Therefore, to facilitate making a diagnosis, and to give the patient his better chance, it seems to me antispecific treatment is indicated.

This was begun at the hospital, but in my opinion not so thoroughly as could be desired. Personally I should hardly be satisfied with the exhibition of fifteen grains of iodide three times daily, and, indeed, would give certainly double that dose.

Moreover, I believe that a mixed treatment is indicated in these cases. I have formed an opinion, based on an insufficient number of cases, it is true, that the treatment of the tertiary lesions of syphilis is to be based on the previous treatment. Where the patient has received at the outset of his syphilis a thorough course of mercurial treatment, I believe that the tertiary lesions yield readily to the exhibition of iodine alone. Where there has been little or no treatment during the early manifestations, I believe the tertiary lesions are more persistent and difficult of treatment, and in my experience only a mixed treatment, that is, the exhibition of both mercury and iodine, gives anything like rapid results. Whether this view be correct or not, I think it wise never to despair of antispecific treatment until these drugs be given together.

Has the improvement in the patient's condition under the treatment indicated been sufficient to warrant a diagnosis of tertiary syphilis? I think it has. Were the lesions of tubercular origin, considering their number and extent, I should not expect so much improvement under any mode of treatment, least of all under that followed. I certainly feel encouraged, and shall continue in the hope that I may soon see my patient again the support of wife and family.

Dec. 8. Patient has continued to improve, and considers himself so well that he neglects to take his medicine regularly. F. W. S.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY, AND HYGIENE.¹

ALBERT N. BLODGETT, M.D., SECRETARY.

DR. E. W. CUSHING² said: I desire to call to your attention certain changes in the uterine mucous membrane, with reference to the diagnosis of a class of cases which I have no doubt most of the gentlemen in active practice see repeatedly: An elderly woman, past the menopause, has intractable hemorrhages, finally requiring curetting. After operation, for a few weeks there is some discharge, and the woman

gets better. She goes three or four or five months, and the curetting has to be done again, and perhaps, after three or four months, again. Finally, some fine day, you find the uterus fixed immovably, the symptoms of cancer develop, and the woman eventually perishes. These cases can be recognized by microscopic examination of the mucous membrane at an early stage, before there is any infiltration of the broad ligament, and before there is any systemic infection, and while the uterus can yet be removed with a very good chance of recovery. If done in time, before the uterus becomes too much involved, it is not a particularly difficult operation — not so difficult as where there is a cancer of the cervix, which is very apt to involve a part of the vagina or of the floor of the pelvis. In the beginning, this condition is strictly limited to the uterine mucous membrane, does not go through the uterine wall, does not affect the broad ligament, and should be removed.

I may here remind you of the difference in the structure of the mucous membrane of the canal in the cervix and in the vaginal portion. The latter has a layer of flat epithelium, but the cervical canal, as well as the cavity of the corpus uteri, is lined with cylindrical epithelium, and is studded with glands, more or less deeply burrowing into the mucous membrane. Therefore, the epithelial covering of the vaginal portion and that of the cavity of the uterus are to be considered as distinct in their function. Although the glandular formation is much more abundant at the fundus, and the functions of the glands of the cervix and of the fundus are different, yet the whole cavity of the uterus can be compared to one great gland, to which these other little glands are branches. Epithelioma or flat-celled cancer has its home in the portio vaginalis, especially at the margin of a lacerated and everted cervical canal. The cervix itself is more liable to the invasion of a carcino-sarcoma or glandular cancer. The glandular development of the fundus is of a different order and function, and liable to adenoma and cylindrical-celled carcinoma. This is a picture from "Martin's Handbook" (Fig. 1), in which he shows diagrammatically at the top the mucous membrane (*m*) of

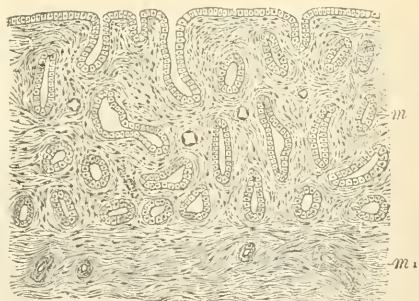


FIG. 1. — Normal mucous membrane of uterus, perpendicular section. *m*, Mucosa; *m¹*, muscularis (Orthmann).

the uterine body lined with cylindrical epithelium, and then the glands burrowing in every direction down to the thick muscular layer (*m¹*) of the uterus

¹ Concluded from page 257.

² Dr. Cushing's paper was illustrated by some forty photomicrographs, projected on the screen by the stereopticon. As it is obviously impossible to reproduce these here, much of the paper, explanatory of the pictures, has been omitted. The outline here given is illustrated by the beautiful drawings of C. Ruge and Orthmann, from Martin's "Pathology and Therapeutics of Diseases of Women." These were also exhibited with the stereopticon and contrasted with the photomicrographs made by Dr. Cushing from his specimens.

and in that way the whole cavity of the body of the uterus is surrounded by this mass of branching glands, with the normal amount of intercellular substance, an excess or diminution of which represents disease. Here in cross section (Fig. 2) you

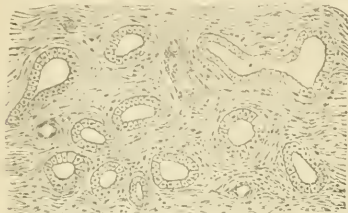


FIG. 2. — Normal uterine mucous membrane, cross-section (Hartnack, Oc. 2, Obj. 4). Orthmann.

see the normal amount of glands and interglandular substance. All glands are lined with the layer of cylindrical epithelium. Below these glands are the long nuclei of the muscular tissue of the uterus. In order to call attention to the diagnosis of adenoma, I shall have to show what we usually get by curetting in cases of endometritis. What we get by curetting when adenoma is present is usually enough to warrant us in doing the operation of extirpation. The photographs that I shall show to-night were made by me from sections kindly prepared by Dr. S. L. Nelson, Dr. C. W. Haddock, and Dr. F. L. Burt.

Where there is only a slight increase in the amount of intercellular tissue, there is not a very pronounced stage of endometritis. In other cases of the same character, which are farther from normal (Figs. 3 and 4), the glands are natural in their size; they are perfectly lined with cylindrical epithelium; they

do not come close together; there is a wide space between them. The whole tissue is infiltrated and packed with little, small cells, which have wandered in through, and account for the symptoms and sufferings. This is seen better when highly magnified. There is no sign of the long myomatous cell nor of the connective tissue which should be found between the glands.

In other cases of endometritis the glands seem to be solid. There may be some confusion between these and the processes of cancer, but the glands are regular, while cancerous processes are irregular in outline. It is not to be considered that these were hollow glands, which have been filled up, but that they are sprouts which are rapidly growing, and, therefore, are solid. The interglandular tissue is filled with small inflammatory corpuscles. The glands in these cases may not possess their normal cylindrical epithelium. It is gone, and replaced by smaller cells. That is probably connected with

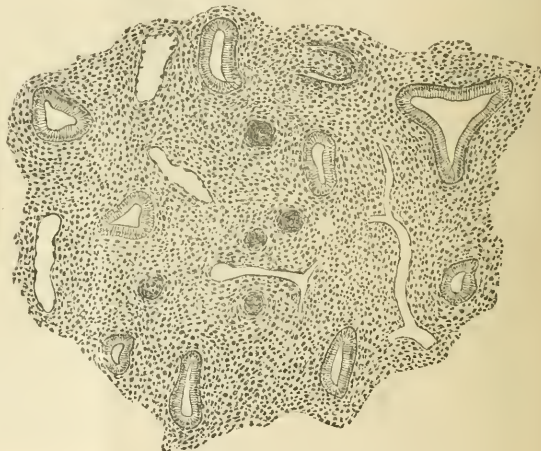


FIG. 4. — Interstitial Endometritis, cross section (250 times enlarged).

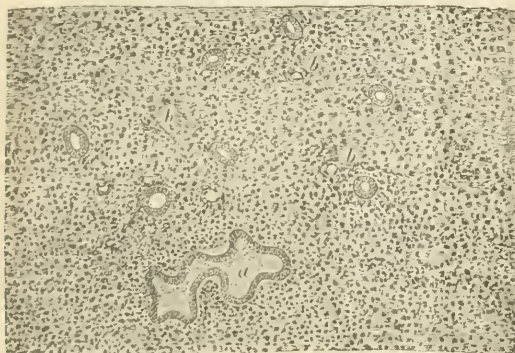


FIG. 3. — Interstitial Endometritis. a, Glands, b, vessels. Orthmann. Hartnack, Oc. 2, Obj. 4.

menstruation or with the inflammatory process, and is of no particular importance here. Another figure from Martin (Fig. 5) shows enlargement of the glands. In the same section there may be specimens of both the glandular and the interglandular enlargement (Fig. 6). The glands do not tend to come close together. They are separated by a fairly homogeneous tissue, which is present everywhere.

Now, both the glands and interglandular tissue may be increased so much that we shall have the same condition of folding that is seen in the brain, and we have the lining membrane rising in convolutions. That makes a fungous endometritis; but the fungous endometritis still remains just the same, even when it rises in the form of polypi.

It is entirely different from adenoma. In endometritis after abortion (Fig. 7), large numbers of large cells, similar to

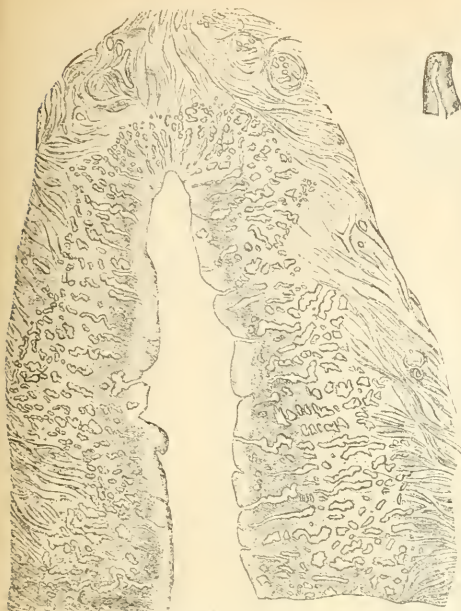


FIG. 5.—Mucous membrane, newly formed, after curettement. Duevelius, *loc. cit.* The small figure shows the natural size of the section.

those of a decidual membrane may be seen. These make all the different forms of endometritis. A section from a mucous polyp as large as the little finger, being a part of the general endometritis, shows that in its structure it is precisely like the curetting from the case of endometritis, and is not like the adenomas figured below. The distinction between the fungous endometritis and the adenoma is to be made accurately. Figs. 8 and 9 are plates from Martin, giving the general appearances of adenoma. I have contrasted them with the others, in order that you might see the difference as it appears in the books. You can compare it with the appearances as photographed from nature. The essential feature of an adenoma is the fact that it is all

glands, with just enough interglandular substance to hold it together. What Schröder first described as adenoma is now called glandular endometritis or hyperplasia, and the present definition of adenoma uteri involves the multiplication of glands, with just enough substance to hold them together.

Here is a photograph from a case about which I was consulted by Dr. Welles, of Chelsea, giving this bit of tissue, and the glands running off on each side. There is almost nothing between the glands. There was repeated hemorrhage, recurring in spite of curetting in an elderly woman.

This is from a case in the practice of Dr. C. W. Haddock, of Beverly, with the same history. It is third curetting. Is it malignant? Should it come out? It is malignant, although it is not technically a carcinoma. You might call it a villous cancer and come pretty near it. It is malignant, in that it will eventually destroy life. The glands arrange themselves into pockets or meshes. It does not need a great deal more change for that to become a cancer, for finally the growth of large cells which fill the glands will break through into the interglandular spaces, and then you will have a cancer.

This is a picture from a very interesting specimen from a woman sixty-eight years old. It is all glands, and just enough tissue between to hold it together, and that is all. The glands are perfect. They do not differ, as glands, from those which are seen in other healthy women. It is the right thing at the wrong time. It is unnatural for her to be having hemorrhages, or to be having glandular



FIG. 7.—Endometritis after abortion (after Schröder). *d, d*, Decidual "islands."

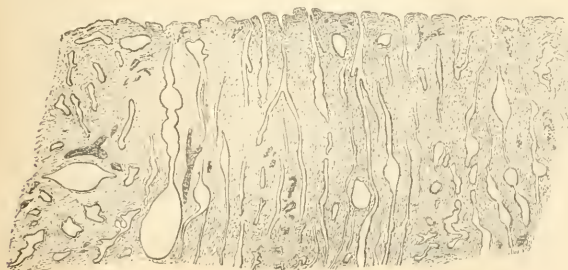


FIG. 6.—Fungous Endometritis, with preponderance on the left of the glandular, and on the right of the interstitial, form, according to C. Ruge.

growth in the uterus. To-day I extirpated the uterus, which I have here, and will show you. (For history of case and operation, *vide infra*.)

This is from another interesting case, the history of which has been published.¹ I suggested that it would probably come to hysterectomy. It was at that time considered by another authority that this was only a case of fungous endometritis, and that a hysterectomy would never be called for. Nevertheless it was called for after the fourth

¹ *Annals of Gynecology*, Nov. 1887, p. 93.

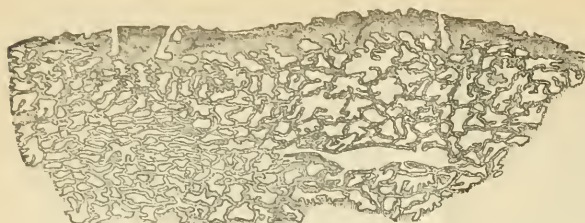


FIG. 8.—Adenoma of the uterus. Drawn by C. Ruge from one of Martin's specimens.



FIG. 9.—The above specimen magnified 400 times.

curetting, when only the shell of the uterus was sound. In September, 1887, Dr. Martin, of Berlin, successfully removed the uterus by vaginal extirpation. In 1885, the thing had begun to have a semi-solid appearance.

Here is a fine plate from Martin's work, showing the transition of hyperplastic glands into cancer of the corpus uteri. In the cervix I have not found such a change, but in the fundus I think the case is pretty well proven. Presently the basement membrane of the gland is broken through, and the cells grow into the intercellular substance, and they form large alveoli, with more or less traces of cylindrical cells. They pass right over from the condition of glands through that of adenoma to the solid masses of carcinoma. Of course, we must believe those who have found such changes to occur also in the cervix, even though we have not found them ourselves.

Another case is that of an elderly lady, where for several years there had been a history of uterine disease. It was called a cancer. She delayed and

suffered, until now it is too late to do anything. The piece which I scraped out shows this picture. The uterus is large, it is partly fixed, and nobody would be willing to try to remove it. The thing is solid. There are large alveoli divided off with connective tissue, and in places you can find the cylindrical epithelium.

Another lady was curetted by me eight months ago. It was declared to be malignant. She was somewhat over sixty. She had had hemorrhages. The alternative of hysterectomy was offered, and she thought that she would not. Presently she wanted to have it done, and then it was too late.

The only deduction I wish to draw from the foregoing is very simple. There are a good many of these elderly women who are beginning to flow, where the diagnosis could be made by taking a little pains, where a vaginal hysterectomy can be done with a very good prospect of success, where leaving them alone is going to be absolutely fatal. Vaginal hysterectomy here has not the disadvantages which it has in cases of cancer of the cervix, where the broad ligament is very apt to be infiltrated. The former has everything in its favor if done early enough.

UTERINE HÆMORRHAGES: CURETTING, FOLLOWED AT EACH OPERATION BY RELIEF; RECURRENCE; VAGINAL HYSTERECTOMY; CURE.

DR. F. L. BURT reported the following case:—

Mrs. X. is a widow of sixty-eight years, whose history of interest is as follows: The menses appeared at fifteen and one-half years, and continued till patient was fifty-two. There was considerable irregularity of periods before marriage, and as a girl she complained of dysmenorrhœal pains, but none since. She has given birth to seven children, since which period she has suffered three miscarriages. There is no history or evidence of any difficulty during accouchement, no lacerated cervix or ruptured perineum, nor stated cause of miscarriage. Complaints of considerable constipation and of some slight bladder trouble. There has been much very annoying vaginal discharge in the past, of late much less in quantity.

Up to the time of menopause, at fifty-two years, the flowing was considered to be normal, and the change of life was natural. There was cessation for five years, during which time she was perfectly healthy. Then flowing began by degrees and she

sought the advice of a surgeon. The uterus was curetted, this being ten years ago, with the result that she was much improved, and remained so for nine months following. At this time she was working very hard and brought on flowing of considerable amount. Rest improved her, and there followed a period of two years of comparative comfort. After another attack of hæmorrhage the same surgeon was again consulted, and the same operation repeated. No benefit followed, a fact for which she did not blame the operation, but rather that the after-treatment was not so satisfactory as after the first time. From this she went on from bad to worse, but would have periods when she would go two or even three months without very much suffering, but most of the time she could not keep about at all. During the following three years five physicians were consulted, and at their hands she received internal medication and injections with only temporary relief. Four years ago another Boston surgeon was consulted, and he advised and performed another curetting. A relief of between four and five months followed. Her case was then diagnosed as carcinoma, and the prognosis for life was only six months. Hæmorrhages still continued at intervals until the summer of 1887, when there was a considerable flow. Three months later, November 14, 1887, she entered the hospital seeking relief, although she had flowed scarcely any during this time.

Examination showed her condition to be extremely good, considering her past history. The vagina was found short, somewhat small in upper portion, the parts having atrophied to a degree. There was no cervix perceptible, and the vagina terminated at an opening large enough to admit a sound easily entering the uterus. Depth of uterus, using no force, about four and one-half inches. No hæmorrhage was noticed at time of examination, but instruments used internally would produce a show of blood no matter how carefully they might be handled. Although the symptoms were not momentarily urgent, the disease was considered far enough advanced to require operation for removal of the mucous membrane, and she was curetted November 17th. The curette passed easily into the cavity and to the depth above mentioned. Nothing but soft tissue could be felt on all sides, as if among masses of villous growths, a condition which can only be appreciated by feeling. The uterine walls were apparently very thin, and the curette moved about as if in a large, empty space. Only very slight force was necessary to remove the softened diseased tissues, but to those witnessing it, it seemed as if a very extraordinary amount of tissue was being removed. About three gills of debris was removed and only very little hæmorrhage followed. Uterus was irrigated, swabbed, and a little subsulphate of iron applied to cavity. An application of iodoform wool was made to vagina. No treatment except irrigation followed, and the recovery was perfect. Examination showed the disease to be adenoma. She left the hospital, enjoyed five months of comfort and freedom from hæmorrhages, when they again recurred, and she re-entered the hospital May 2nd, when the same operation was again performed with the same result, but this time there was found to be carcinomatous degeneration

in some of the tissues removed. After recovering, the operation for total extirpation was advised and accepted, and performed by Dr. Cushing, June 13th, before a number of members of the State Society then in session.

The operation was essentially after Martin's method. The post cul-de-sac was opened, the peritoneal and mucous surfaces of the vagina being stitched through. The uterus could be drawn down only with great difficulty owing to extensive adhesion; these were next broken up by the fingers. The floor of the pelvis was then sewed firmly to the vagina on each side and separated from the uterus, hæmorrhage being controlled by ligatures, and for greater safety by forceps also. The uterus was then retroverted, and dragged down by Martin's hooks and vulsella. In spite of every care it tore badly, and a sponge was put above it into Douglas's pouch to prevent infection. Finally it was brought down and the broad ligament tied, clamped, and cut. One ovary was removed, the other was not seen. The cervix had already been separated from the anterior vagina, which was similarly stitched through to prevent hæmorrhage; the separation from the bladder was easily made and the whole removed, leaving five pairs of pressure forceps on the stumps of the broad ligaments and pelvic floor.

The field of operation was irrigated with a weak sublimate solution, the sponge removed, and patient put to bed. There was no shock nor hæmorrhage. The forceps secured excellent drainage and were removed on the third day. There was no interruption to an easy convalescence, and the patient left the hospital well on July 17th.

NEW YORK NEUROLOGICAL SOCIETY.

MEETING held October 2nd, the PRESIDENT, DR. GEO. W. JACOBY, in the chair.

DR. B. SACHS presented three cases of

MUSCULAR DYSTROPHIES,

referred to in his paper before the American Neurological Association in Washington. The author referred to the relation between pseudo-muscular hypertrophy, and other forms of muscular dystrophies, particularly Erb's form. Erb had stated that the two were identical. Erb's juvenile form consisted in atrophy attacking the upper extremity, particularly the deltoids, the infraspinatus, and sometimes the latissimus, the lower extremity being intact. The question was whether pseudo-hypertrophy and Erb's atrophy were distinct or merging types.

Case 1 was twelve and a half years old. The child had suffered from severe fright at ten months. She had never walked well. She had diphtheria when four years old, and after this her gait had been worse. When six and a half years old increased size of the legs had been first noticed. The characteristic difficulty in getting up from the floor had been present. There was atrophy commencing in the palmar interossei, and affecting the arm and forearm. The thenar and hypothenar eminences had not been involved. There was hypertrophy of the whole lower extremity, but the hypertrophy of the legs had not kept pace with that of the thighs. It was apparent that atrophy

of the legs would soon supervene. The atrophy of the hands had not been present two years ago. The case proved that in the atrophy associated with pseudo-hypertrophy, it was not necessary that the shoulder should be first affected as in Erb's form. For the interossei to be attacked first was rare, but only proved that any muscle could be affected by the disease, while in Erb's form the hand was exempt to the last.

Case 2 was that of a boy of ten years. There was no history of heredity, and no constitutional taint. The patient was a newsboy. He had walked late, and had been treated for rickets. He had never been able to run, and had been always easily fatigued. The hypertrophy in this case was most marked in the thighs. A peculiarity of the case was the fact that the boy could rise from the floor without climbing upon himself as was customary in the disease, and considered by Gowers a differential test. There was some atrophy of the serratus anticus of the right side. The upper extremities were not affected.

DR. BIRDSALL suggested that the face had a peculiar appearance.

DR. SACHS had not referred to this peculiar puffiness, because, while suggestive, it was not sufficiently characteristic of the Landouzy-Dejerine type. It was possible that it might develop into this appearance.

Case 3 was that of a girl of twelve years. She had walked at nine months. At the age of ten months she had fallen, and later had had something the matter with the knee. This was treated with the plaster splint in St. Petersburg and recovered. The circumstance was mentioned because it had been denied that so young a child could be successfully treated with this instrument. At the age of three the child had measles, at four small-pox, at six scarlet fever, and at six and a half typhoid fever. The loss of power in the limbs was not preceded by fever or convulsions. Five months ago it was noticed that motion was impaired in the toes, there was a modified gait, fatigue and difficulty in mounting the stairs. There was no pain. There had been at times a creeping sensation in the skin, and once fibrillar contractions had been noted. The atrophy affected the right leg, thigh, and gluteal region. The electrical reactions were normal. For four months the knee-jerk had been absent upon both sides, but now it was exaggerated upon the left side, while upon the right side it was still absent. The gait was that of poliomyelitis affecting the anterior group, while the history was one of progressive muscular atrophy of the peroneal form. The gradual onset without convulsions or fever, and the progressive character of the affection, and the atrophy, which was not so profound, distinguished it from atrophies of spinal origin. On the other hand, however, the exaggerated knee-jerk suggested a substratum of spinal or neuro-spinal inflammation. The case was an anomalous one of a type seldom seen. The author made the diagnosis of peroneal form of progressive muscular atrophy.

DR. BIRDSALL had been interested in the types shown, and was not inclined to question the doctor's diagnosis. The last case was, he thought, allied to the progressive muscular atrophy type, rather than to that of an acute poliomyelitis; he thought, how-

ever, that there might be grades between the two, that there was no sharp line of demarcation between them. The former presented the characters of a degeneration, while the latter was an acute inflammatory condition which might involve, not only the gray matter, but extend to the neighboring tracts. The speaker had a case in mind diagnosed acute inflammatory poliomyelitis. There was involvement of the muscles of the anterior and posterior aspects of the thigh, slight affection of the anterior tibial group, and exaggerated reflex, showing extension to the lateral column. In the speaker's opinion the different varieties of atrophy represented grades rather than distinct pathological entities. The fact that the atrophy in one case had affected an arm, a leg, in one was hemiplegic and in another paraplegic, should not blind one to the possibility that the pathological processes might be the same. In the present stage of our histological knowledge, he thought that we were not even able to separate cases into those of myopathic and myopathic origin. The number of the cases was meagre, and our methods of examination were not calculated to reveal minor degrees of atrophy. In the muscles, nerves, and cord it might be possible to have a gradual destruction and regeneration going on, which would escape detection. The value of the electric reaction was equally open to doubt. If fibres degenerated one by one it was probable that the reaction would remain normal until the number of atrophied fibres had attained a certain grade. The degeneration reaction would be in any case interfered with by the normal reaction of the healthy fibres. The question was whether there was great uniformity in these various types, or great diversity; he predicted the latter, the types running into each other.

DR. PUTNAM JACOBI suggested that the gluteal muscles were unaffected in the second case presented. This accounted for the lack of the usual difficulty in getting up from the floor.

DR. SACHS accepted this explanation. He had referred to the point because DR. GOWERS had mentioned the symptom as pathognomonic.

DR. DANA referred to a case of pseudo-hypertrophy in which the disease had advanced from the calves to the thighs, and thence to the shoulder-girdle. There was slight hypertrophy of the forearm, the part said to be unaffected in Erb's form.

The fundamental distinction between the symptoms of chronic anterior poliomyelitis and progressive muscular atrophy, was the retrogressive or stationary character of the former, and the progressive character of the latter.

It was difficult to criticize the diagnosis in DR. SACHS' last case. He would prefer to postpone his decision, but would suggest that a careful examination of the urine be made for lead. A number of cases of anterior poliomyelitis in children had been recently ascribed to lead.

DR. GRAY would, upon *à priori* reasoning, decide the case as one of chronic anterior poliomyelitis, but that anterior horn myelitis was, as had been suggested, retrogressive. Muscular atrophy could be, he thought, divided into that of spinal and peripheral origin; of the latter, however, we must distinguish between that arising in the muscles and that due to peripheral neuritis.

The results of treatment varied. There were cases which, with rest in bed, faradism, and gentle massage improved, while other cases were unaffected by treatment. He thought that the former were of spinal, while the lateral were peripheral, either neural or muscular in origin.

Formerly the diagnosis of a central or peripheral origin was determined by the presence or absence of the reaction of degeneration. Now confusion surrounded this test also. The doctor inquired in regard to opinion upon this point. Was the degeneration reaction present only where the muscles were degenerated?

DR. SACHS closed the discussion. He was pleased that Dr. Birdsall, who had not heard his paper in Washington, had been in substantial agreement with it. While there was diversity of types, there was no anatomical distinction between pseudo-hypertrophy and atrophy. The primary and secondary affections were distinguished by their symptoms. The primary affection occurred early; there was absence of fibrillary contractions, and absence of the reaction of degeneration. This group included pseudo-hypertrophy, Erb's type, and that of Landouzy and Dérjérine.

DR. GRAY begged to refer to a case recorded by Schultze, which had been assumed to be primary, but in which there had been found changes in the cord.

DR. SACHS explained that the change referred to was independent and unconnected with the muscular symptoms. It was in a part of the cord unconnected with the muscular tract. He suggested that in Dr. Dana's case the atrophy in the left arm might have given rise to a fictitious appearance of hypertrophy in the forearm.

DR. DANA added that the muscles had also the peculiar feel of pseudo-hypertrophy.

DR. SACHS did not question the doctor's diagnosis. He believed that all present had agreed upon the desirability of getting rid of the present classification upon anatomical distribution of the hypertrophy or atrophy. He had retained the term peroneal form for convenience only.

DR. M. D. FIELD followed with a paper entitled

OTHÆMATOMA, OR INSANE EAR.

The title referred to a shrunken, shrivelled condition, preceded by a period of active congestion during which the organ was swollen, hot, and very painful. Between the cartilage and the perichondrium there was effused a sero-sanguinolent fluid, which might become purulent. This was absorbed, or rupture occurred with healing and the deformity described. The deformity was not uncommon among the insane. It had been attributed to trophic change. The most general opinion had been that othæmatoma was characteristic only of chronic cases, and usually indicated an incurable condition.

The question of a traumatic origin had received some attention. It had been remarked that a Greek statue represented a boxer with this deformity. The author could not recall the reference. It had been said to result in boys, from the violence of a game of football. It had also been observed among soldiers.

The author had had under his care the case of a

professional pugilist who had presented the deformity in question. Upon directing his attention to it, the man had remarked that it had resulted from a blow upon the head, and that it was common in his profession, that he knew as many as a hundred men similarly injured. Arrangements were made with this man to be present at the meeting. He had been unable to come, but had sent substitutes. Several undersized, meek-looking, professional men, pugilists, here appeared, all presenting the deformity. It could be added that only one had ever been in an asylum. This one had been in for delirium tremens. It was evident that the insane ear could proceed from traumatism, also that it was more common than was commonly supposed.

DR. PETERSON felt indebted to Dr. Field for the opportunity of examining the cases. He had seen the condition frequently in the insane, and believed that it was always due to traumatism. It was more frequent among the insane, probably on account of the necessity for restraint, also because the insane were apt to injure themselves in many ways. He also believed that the changes in the walls of the vessels in insanity predisposed to the result. Retrograde metamorphosis of the cartilage and perichondrium, like that of senility, was common in general paresis and other varieties of chronic insanity.

DR. PARSONS exhibited a cast of othæmatoma in the recent state, taken some years ago. He had always considered the condition a result of nerve degeneration. The exhibition this evening had, however, demonstrated that it could result from traumatism alone.

DR. DOUGLAS had seen a considerable number of instances of the insane ear, and thought that it had been due to violence in every instance, either from the attendants, other patients, or the sufferer himself.

DR. INGRAM could corroborate this statement. The insane had the habit of rubbing the ears, which might account for some cases. He could add to Dr. Field's record that of a case of recovery after double othæmatoma during an active maniacal attack. With improvement of the mental condition there was improvement in the ear. Upon recovery there was diminution in the size of the ear, but no deformity.

DR. PETERSON added that the reference to the Greek statue had been by Fuerstner, *Arch. f. Psych.*, iii.

DR. FIELD, in closing the discussion, referred to the case reported by Dr. Hun. After the patient had been struck with a broomstick, the hematoma appeared upon the opposite ear. Dr. Hun cited the case as an instance in which traumatism could not have been the direct cause.

MEETING held Tuesday evening, November 6th.
DR. W. H. THOMSEN read a paper entitled

PARENCHYMATOUS NEURITIS,

including the history of a number of cases.

Case I. was that of a man of fifty-six years, formerly engaged in the lumber business, and obliged to stand in water containing floating ice for hours at a time. This patient's symptoms had first

pointed to central spinal trouble, but later had been those of a multiple neuritis. They had, however, been gradual in their onset, and there had been no evidences of pressure. There had been no shooting nor lancinating pains. The actual canthary had been applied over the spine, and the hot glass rod over the sensitive nerve trunks. Nitro-glycerine had given the greatest relief from pain in this case.

Case II. was that of a man of thirty-five years, convalescing from diphtheria. There was no pain, but the laryngeal and pharyngeal paralysis was so profound that the general health suffered.

Case III. was that of a boy convalescing from typhoid fever. There were pains in the legs and feet, with dropping of the feet.

Case IV. was that of a woman confined to her bed for three months in the course of phthisis. There were pains in this case in the feet, extending to the knees, and in the hands, with dropping of the ankles and wrists, which progressed steadily till death, when extensive nerve degeneration was found, without any evidences of inflammatory action. The case was presented as a typical example of a wide-spread, non-inflammatory degeneration of the nerves. It was a parenchymatous neuritis analogous to that which could be produced by a ligature. The origin and history differed from that of an inflammatory neuritis, however much it might resemble this condition in its ultimate results. In the case of typhoid fever and phthisis the degeneration may have been due to a mechanical cause—pressure from the loss of the surrounding fat. The fact that the vagus was implicated in the latter disease did not disprove the theory, as no statement had been advanced in regard to the condition of the bronchial glands.

The theory of a non-inflammatory parenchymatous nerve degeneration was important, as the treatment of such cases would differ from that of cases of inflammatory origin. In the latter antiphlogistic and soothing treatment was indicated, while in the former stimulating applications were required.

It was questionable whether the term neuritis could be correctly applied to this type of the disease.

DR. L. C. GRAY had not heard the commencement of the paper, and did not understand why Dr. Thomsen objected to the term neuritis. He thought that the symptoms could be scarcely classed under any other name. There had been, as he understood, downright pain in the course of the nerves, and eventually paralysis and atrophy. These were the clinical symptoms of neuritis, and measured the severity of the neuritic lesion.

The treatment of neuritis was, he believed, excepting traumatic neuritis, still *sub judice*. Since attention had been called to the disease, all had probably met with cases in which no local measures seemed to do any good. Quinine, the salicylates, and iron had been most beneficial in his own cases. Change of air was to be recommended. Even in the paralytic stage it was his custom to move the patient to another part of the city, or even from a lower floor to a higher floor in the house. Change of location was especially indicated in the cases arising in our somewhat malarial suburbs.

DR. STARR applied powdered menthol diluted

with starch under a flannel bandage for the relief of the pains of neuritis.

DR. JACOBV did not find the diagnosis of neuritis so easy as Dr. Thomsen had represented it, especially in typhoid fever. Myositis was a more probable lesion in typhoid fever. Zenker had even stated that neuritis was never found in this disease. As to the distinction made between the inflammatory and degenerative process, both might be found in the same case. Which process was primary, and which secondary, was still a question.

DR. THOMSEN closed the discussion. He had intended to call attention to only a single point, and necessarily had neglected many others touched upon by the gentlemen in the discussion. He had intended to call attention simply to the impropriety of the term neuritis, as applied to the process in the cases which he had described. There was no reason to suppose that the process in the case of phthisis had been inflammatory. The inflammatory process had certain definite characteristics. These were vascular disturbance, infiltration with serum, and leucocytes or living matter. In the neuritis of alcoholism, both in private and in hospital practice, he had observed circulatory and nutritive changes; there had been the same tendency as in the inflammatory processes in other parts of the body. There was evidently inflammation of the sheath of Schwann, and constriction of the nerve. These conditions contrasted with those in the cases which he had described. In the treatment of true neuritis he had used an application of equal parts of the oil of peppermint and olive oil, a preparation similar in action to that which Dr. Starr had recommended.

DR. GRAY enquired whether Dr. Thomsen recognized no inflammatory process within the sheath of Schwann.

DR. THOMSEN replied that he knew of no changes within the sheath of Schwann which could be called inflammatory.

AMERICAN PUBLIC HEALTH ASSOCIATION,

MILWAUKEE, WISCONSIN, NOVEMBER 21, 1888.

SECOND DAY. — AFTERNOON SESSION.

BEFORE the opening of the afternoon session the members of the Association were conveyed in carriages along the beautiful lake drive to the station of the new flushing tunnel, which has been devised to create a current in the sluggish waters of the Milwaukee river. By means of a screw revolving in this tunnel, about five hundred million gallons of the lake water can be forced into the river daily, thus acting as a purifying current to wash the sewage of the city out into Lake Michigan. How long the rapidly increasing cities of the western lakes can safely pour their sewage into these basins, and at the same time use them as water-supplies, is an important sanitary question.

At some distance north of the flushing station, the water-works were visited. The supply of water to Milwaukee is unusually liberal, amounting to about one hundred and twenty-five gallons daily to each inhabitant. For greater security it is intended to extend the crib, or intake, a mile

or more out into the lake, after the manner now being adopted at Chicago.

On returning to the hall, the remainder of the afternoon was occupied with a detailed account of the methods adopted for conducting the quarantine stations at Quebec, New Orleans, and Boston. These papers were presented by Dr. F. Montizambert, the quarantine officer at Quebec, Dr. L. N. Salomon, the Secretary of the State Board of Health of Louisiana, and Dr. S. H. Durgin, chairman of the Board of Health of Boston.

Dr. Montizambert's paper was amply illustrated with stereoscopic views of the station at Grosse Isle, below Quebec, and of the appliances there employed for disinfecting ships and their cargoes.

Dr. L. S. Kilvington, of Minneapolis, read an instructive paper upon

GARBAGE FURNACES AND THE DESTRUCTION OF ORGANIC MATTER BY FIRE,

in which he gave at first a historical account of the subject of garbage cremation, including the results of experiments in England, and the principal establishments now in operation in the United States and Canada. These are principally at Chicago, Des Moines, Minneapolis, Pittsburg, Wheeling, Montreal, and at Coney Island, and are constructed upon different principles.

The furnace in use at Minneapolis is an Engel crematory, consisting of an elongated chamber of fire-brick, having an upper and lower grate, the garbage being dumped upon this upper grate through openings in the top of the furnace. Fires are built at each end of the mass, and by means of valves the fire can be conducted either over, or under, or between the grates in such manner as to thoroughly burn the garbage deposited in the furnace.

(On the following day a similar furnace was completed at Milwaukee, and was visited and examined by the members of the Association while it was in operation for the first time.)

Dr. DE WOLF, health officer of Chicago, referred briefly to the operation of the new crematory at Chicago, stating that its work was thoroughly done, that he believed that better work might be accomplished, from an economical standpoint, by an apparatus which would return a portion of the material, as a product of definite value, in return for the cost of management.

Dr. CLARKE, health officer of Buffalo, stated that such a plant was maintained in that city, consisting of a driver, or separator, in which the valuable parts of the garbage, chiefly the oil, were extracted, and were sufficient to pay the cost of fuel and maintenance.

In other cities the cost of cremating garbage varied from fifteen to twenty-four cents per ton.

In the evening a hospitable reception was given to the Association at the Athenæum, by the Women's Club of Milwaukee.

THIRD DAY, THURSDAY, NOVEMBER 22.

The morning session was mainly devoted to a consideration of yellow fever and its sanitary management and prevention.

The first paper, by Dr. A. N. BELL, of New York, treated mainly of the experience of the writer in earlier years with this disease in tropical climates.

Dr. RUTHERFORD, health officer of Texas, gave a historical sketch of yellow fever as it had prevailed in that State, followed by an account of the measures which he had taken to prevent its introduction into Texas, either from other States of the Union or from places beyond their limits.

Decidedly one of the best papers presented at this meeting of the Association was that of Dr. JEROME COCHRAN, of Mobile, Ala., entitled

PROBLEMS OF YELLOW FEVER EPIDEMICS.

The paper was comprehensive, intelligible, and well suited to the occasion. The writer considered the sanitary management of yellow fever to be one of the most important questions affecting the interests of the Southern States. The conveyance of the specific poison of the disease is now more readily facilitated by the rapidity of railroad travel, by which distances are abolished, and the interior brought down to the sea-coast. Yellow fever may find an abiding home in Southern Florida.

As results of extended personal observation, Dr. Cochran believes that the pathogenic principle of yellow fever is propagated both in the body and in its environment; that it does not enter by the skin or lungs, but by the alimentary canal, and probably through the mucous membranes of the mouth and pharynx; that it passes out by means of the dejections; that a ptomaine generated by these micro-organisms in the alimentary canal is the direct source of the disease; that it resembles typhoid fever and cholera in its method of transmission; that it infects localities; that it does not ordinarily spread from single cases, and not often from two or three cases; that human intercourse is its greatest factor; that it is not ordinarily transmissible by air currents, nor over high walls; that it is more communicable by night than by day; that in infected places all become infected, but not all are susceptible to the disease; that whites are more susceptible than blacks, and men more than women.

With reference to its sanitary management, density of population is an important element, and makes its management more complex and difficult. The golden rule must be *non-intercourse and isolation*. For the purpose of disinfection, Dr. Cochran recommends heat, bichloride of mercury, and sulphur fumigation, and believes that the dejecta should be disinfected. With reference to depopulation, he thought its disadvantages outweighed the advantages, and condemned refugee camps as failures, which were good in theory, but bad in practice. Thoroughly equipped health departments were commended, as the most efficient preventives both of disease and of panic.

COL. D. P. HADDEN, of Memphis, Tenn., heartily approved Dr. Cochran's paper, and urged its publication. He also commended the efforts of the association in its attempts to bring before Congress the necessity of a national sanitary organization. He gave a humorous account of the recent panic at Memphis on account of a supposed case of yellow fever.

Dr. H. F. HOYT, of St. Paul, Minn., gave an account of the methods adopted in that city for general sanitation, especially with reference to the disposal of sewage and offal.

PROF. W. W. PAYNE, director of the observatory at Northfield, Minn., presented a paper entitled METEOROLOGICAL OBSERVATIONS RESPECTING DISEASE PREVALENCE,

urging the importance of co-operation between signal offices and sanitary organizations, and a more careful study of the relations of weather conditions to health.

EVENING SESSION, NOVEMBER 22.

Papers were read by DRs. D. E. SALMON and THEOBALD SMITH, of the Bureau of Animal Industry at Washington, D. C. The first on

TUBERCULOSIS: ITS ORIGIN, DETECTION, AND CONTROL,

and the second on

THE ORIGIN AND SOURCES OF DISEASE GERMS IN GENERAL.

Both papers were fully illustrated by the stereopticon.

MR. DANIEL DOTY, of Pullman, Illinois, followed with an entertaining description of that remarkable industrial city, having especial reference to the sanitary features which it presents, such as its ventilated workshops, its method of sewage-disposal, its well-planned tenement houses, and many other excellent features of similar character, many of which the writer verified by personal inspection on the following day.

The chairman then announced that the Lomb prize, for the best essay on hygienic cooking, had been awarded by the committee to Mrs. John J. Abel of Strasburg, Germany, for an essay entitled "Five food products, illustrated by practical receipts."

FOURTH DAY. FRIDAY MORNING, NOV. 23.

The last day's session was mainly for the transaction of routine business. The following papers were read by title:—

"Hygiene of the Eye and Ear," by Dr. J. Felton, of St. Paul, Minn.

"Difficulties and Successes of Public Health Service in Large Cities," by Dr. O. C. De Wolf, of Chicago, Ill.

"Organization of a National Health Service," by Dr. S. W. Latta, of Trenton, N. J.

It was voted to hold the next meeting at Brooklyn, N. Y. The following officers were elected for the ensuing year:—

President, Dr. H. A. Johnson of Chicago, Ill.; first vice-president, Dr. J. Cochran, of Mobile, Ala.; second vice-president, Dr. T. Montizambert, of Quebec; secretary, Dr. J. A. Watson, of Concord, N. H.; treasurer, Dr. J. B. Lindsley, of Nashville, Tenn.

A vote of thanks was tendered to the Women's Club of Milwaukee, in recognition of their courteous attention and hospitality to the Association.

—Dr. J. Adams Allen has presented to the Presbyterian Hospital of the city of Chicago his medical library, one of the most valuable in the Northwest, containing some 2,000 volumes, which have been selected with great care. The Board of Managers will make provision for its accommodation in the elegant new fire-proof building now nearing completion on the corner of Wood and Congress streets.

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MOVEMENTS OF THE STOMACH.

PHYSIOLOGISTS have long taught the existence of certain peristaltic movements of the stomach which go on during digestion, and have for their object to agitate the alimentary mass and impregnate it with gastric juice, as well as to expel the chyme. Leven even affirms that these movements go on during fasting, though more active during the digestive process. Much, moreover, has been learned of late years with respect to the effects of atony of the muscular coat,—an atony, the advanced stage of which constitutes gastrectasia with its formidable array of dyspeptic symptoms.

The older physiologists taught that the chemical activity of the stomach is in intimate correlation with the muscular activity, the secretion of gastric juice being the more abundant the more completely all parts of the stomach are brought in contact with the alimentary bolus, the latter reflexly stimulating this secretion. This as a general rule is undoubtedly true, being in accordance both with known laws and careful observations, such as those of Beaumont on Alexis St. Martin.

It is true that some recent physiologists have inverted the process, and claimed that the energy of the movements of the stomach is closely related to the richness in acid of its contents. To test this, Klemperer, who recently addressed the Society of Internal Medicine of Berlin,¹ "On the Motor Functions of the Stomach," has experimented with alkalies, as magnesia, a sufficient quantity of which was introduced into the stomach to neutralize every trace of acid; in these conditions the movements of that organ were found just as energetic as ever. These were, however, healthy subjects, and it would be interesting to note in such subjects the effects of a continuance of these experiments. Certain it is that in another series of experiments,

on thirteen patients affected with gastric catarrh, Klemperer noticed that with a diminution of hydrochloric acid and an augmentation of mucus there was a notable diminution in the movements of the stomach. It is probable that the view of Ewald expressed at the same meeting is the correct one, that all the functions of the stomach—secretory, motor, absorbent—constitute a unity or solidarity; that no one of these functions taken separately has the principal part either in the physiological or pathological processes of the organ, while derangement of any one of them sooner or later breaks the harmony and results in disease.

In Klemperer's experiments he made use of olive oil. It is known that a neutral fat is decomposed at the end of one or two hours in the stomach, and furnishes sebatic acids. By an œsophageal sound Klemperer introduces one hundred grammes of olive oil into the stomach of his subject. At the end of two hours he aspirates the contents of the stomach (injecting in a little warm water to aid the process); the oil is separated by ether and weighed. In this manner he determines the quantity of oil which in two hours has passed into the intestine, and in repeating the experiment on a great number of subjects he has a basis for a comparative estimate of the rapidity of the gastric peristalsis. In this way he has found that certain neuroses are accompanied by a pronounced motor enfeeblement; that in chronic gastritis and in cancer there is, as a rule, a similar enfeeblement; that alcohol in moderate quantities, and certain bitters, as quassia and strychnine, and not unfrequently alkalis, as bicarbonate of soda and Vichy and Carlsbad waters, have a favorable influence on the motor activity of the stomach.

Another question which had not been definitely solved is whether the pylorus opens and shuts alternately on the solid contents of the stomach, so that the latter pass little by little by fragments into the intestine, as Beaumont and subsequent experimenters have taught, or whether they pass in a mass and all at once. Klemperer's experiments seem to favor the latter hypothesis, though in contradiction to the observations of Leven and others.

At the meeting above alluded to, all the speakers agreed in attributing to alcohol, when taken in excess, the property of arresting the peristaltic movements of the stomach; it also suspends the secretion of gastric juice. Acute febrile attacks, mucous catarrh, etc., do the same thing. It was moreover agreed that an excess of hydrochloric acid in the stomach also slows the peristaltic movements and the passage of the contents of the stomach into the duodenum, whether by determining

an energetic contraction of the pylorus, as Rosenheim supposes, or by some other mechanism. Rosenheim was inclined to think that what is true for hydrochloric acid is also true for the organic acids, and he suggested that in Klemperer's experiments the fatty acids of the oil may have acted in the same way on the pylorus. He would explain in this way, and not by a diminution of motor force, a great number of cases of retarded peristalsis noticed by Klemperer.

In the discussion, attention was called to the fact that a normal state of the chemical activity (gastric juice secretion) and the motor activity do not always go together, it being proved that, in both the normal and pathological state, aliments may pass into the intestine and be digested without having undergone any transformation in the stomach; this passage into the intestine takes place only in virtue of the mechanical movements of the stomach. Allusion was also made to that augmentation of peristalsis which characterizes certain morbid conditions, as *boulimia*, where the stomach is found empty within an hour or two after the ingestion of a full meal. This acceleration of the peristaltic movements of the stomach is generally associated with some hyper-excitation of the nervous system.

SECONDARY DEMENTIA.

In his presidential address before the British Medico-psychological Association this year, Dr. J. S. Clouston gave the results of his long experience and close clinical observation upon a subject of vast importance to society, namely, secondary dementia, which he considers the end to which all kinds of mental disease tend. Indeed, he defines mental disease as a tendency to dementia. He finds 22 per cent. of the inmates of insane asylums to be cases of pure uncomplicated dementia, 28 per cent. secondary dementia complicated with maniacal symptoms, 16 per cent. congenital and epileptic dementias, or 66 per cent. in all. The typical examples of secondary dementia were nearly all primarily cases of insanity of adolescence, and out of one hundred new cases sent to asylums about forty sink into dementia.

Dr. Clouston differs with many Continental, especially German, writers in regarding his pure cases of dementia as primarily due to a failure in the dynamical mind-evolving function of the cortex of the brain, to which the final atrophic and degenerative cortical lesions owe their origin, rather than to a failure in the nutritional and reparative power of the brain. Beginning with brain-health, implying fairly sound mind, normal sensibility and inhibition, good morals, stable motor functions, and a good trophic and organic state, he finds the initial de-

parture from this when a man and woman marry whose nervous developments on the whole are more marked than the trophic, commonly as follows:—

1. Extra mental activity, irritability, sleeplessness, and want of fat.

2. Hypersensitiveness, pronounced manners, strong artistic and poetic feeling, reproductive *visus* strong and uncontrollable in youth, acute emotional religiousness, thinness of habit and premature senility preceded by hypochondriasis and mental inactivity.

3. Eccentricity, fitful brilliance, instability, hysteria, neuralgia, and asceticism in the women, drunkenness in the men, with few children and early dotage in both sexes. The so-called neuropathic diathesis or *neurosis insana* has begun, and more than this, for sporadic cases of epilepsy appear in this generation. This is the stage of "moral insanity" too.

4. The fourth step in the descent takes us to the first commonly recognized insanity, melancholia, with mental breakdown in the climacteric — a true reversion to a law of nature, very prevalent, that when reproductive power ceases death occurs.

5. *Polie circulaire* and maniacal attacks. The normal stability of brain-working has so disappeared that the periodicity of nervous and mental action have become exaggerated into a marked disease, the chief characteristic of which is that the individual leads two or three lives, is almost two or three distinct personalities, according to the phase of nervous action he is in. The curable insanities of full development occur here, namely, puerperal, lactational, and such like insanities. Secondary dementia does not readily supervene after these — in only 25 per cent., — and when it does occur it is incomplete and complicated. When the insanities of this stage become incurable, they tend to become chronic delusional states rather than pure dementia.

6. The last phase is that of being subject to severe developmental nervous diseases of all sorts, epilepsy, chorea, bad hysteria, and, above all, adolescent insanity, ending after a few periodic recoveries in secondary dementia, nature's typical mode of bringing a mentally bad stock to an end. All the great functions and organs are liable to characteristic diseases in adolescence, but when it is mental tissue whose function succumbs at that time of life, it can have only one meaning. The stock has exhausted its inherent hereditarily energizing vigor in that which distinguishes man from all else in creation, high mentalization.

Pathologically, Dr. Clouston says that all brains may be upset in their mental working by certain poisons, but that few can be thrown into secondary dementia. For its production an original tendency

is necessary. We must fall back on the original qualities of the cortex-protoplasm as derived from ancestry, just as we have to fall back on this to explain why the dog's cortex develops in a year and dies in ten. The brain cortex of two generations of men and women can carry insanity as a mere potentiality from a great-grandfather to his great-grandchildren, with no sign of it in the children and grandchildren!

This is a side of the question too often neglected and well worth careful study; but a less depressing view comes from looking upon the various forms of insanity as definite diseases, like pulmonary consumption and certain fevers, in which heredity plays only one part. Like his predecessor, Skae, Dr. Clouston seems to us to incline too exclusively to the developmental or metaphysical basis of insanity, and not to regard it sufficiently as disease engrafted, as the case may be, upon a sound or an unsound brain.

His prophylaxis as regards marriage must have some practical difficulties in old communities where few families can go back two or three generations without finding cases of insanity; but so far as our patients are concerned, that is undoubtedly the safer side for error when we are consulted as to marrying. Over-education, lack of sufficient brain stimulus, too sudden adaptation to new environments and new conditions, as causes, and physiological modes of training, out-door life and selection of suitable employments as preventives, are insisted upon with Dr. Clouston's usual clearness and force.

MEDICAL NOTES.

— A new building has been erected in connection with the German Hospital on 77th street and 4th avenue, New York.

— Dr. F. N. Otis, who for a long time has been on the staff of visiting surgeons of the Charity Hospital on Blackwell's Island, resigned that place, and was appointed consulting surgeon of the hospital.

— At the meeting of the trustees of the University of Pennsylvania, December 4th, the resignation of Dr. D. Hayes Agnew from the chair of Surgery, to take effect at the end of the current session, was accepted with expressions of regret, as was also the resignation of Prof. William Osler from the chair of Clinical Medicine. John Ashhurst, Jr., the present professor of Clinical Surgery, was nominated for the position to be vacated by Dr. Agnew's resignation.

— The epidemic of typhoid fever, which became noticeable in Providence, R. I., in the latter part of November has now assumed increased proportions, and cases are reported to Superintendent of Health

Chapin from all over the city. No part of the municipality seems clear of the disease. Up to December 6th one hundred and fifty cases had been reported, of which number no less than eighty-one have been reported within a week, or more than twenty a day. The disease is ascribed to the Pawtuxet river, from which source the city takes its supply of water. The pumping station is at Sockanossett, in the town of Cranston, about four miles from the city. Below the pumping station there are but one or two mills, and both are small, so that the stream is comparatively clear of any pollution, either from mills or houses; but above the pumping station there are cotton and woollen mills, dyehouses, and several well-populated villages. The houses in many of the latter being on either side of the stream. The mills have been in the habit, not only of discharging scourings, greasy water, and dyestuffs into the river, but they have maintained privies along and overhanging the river, and the villagers have been using vaults that have emptied into the stream.

It is said that there is typhoid fever among the French-Canadians living in the factory villages along the Pawtuxet, who have been in the habit of depositing faecal matter from the typhoid-fever-stricken patients in the river.

—The *Medical Press and Circular* notes a case, recorded by Diamant, of a young child who began to menstruate regularly from the age of two years. The menses have taken place up to a short time ago without intermission, and last for five days. The child was born in 1882, and at the end of twelve months had cut all its teeth. In 1886 it weighed fifty-nine pounds, and now in its sixth year it weighs seventy-nine. Till a short time ago it was robust and well. The head and upper extremities are similar to children of its age, but the buttocks and thighs are remarkably developed. The breasts are prominent, and the pubes and axillæ are furnished with hair. The child speaks in a bass voice. Up to January of the current year the health of the child continued good, but since then menstruation has ceased; at each menstrual period the child is seized with epileptiform attacks, and the latter have tended to become more serious both in number and severity.

—Superintendent Weir, of the Bureau of Police of Pittsburg, Pa., has received one of the medicine chests which are to be placed in each of the patrol wagons. They will be placed under the seat of the wagons, and will be carried at all times.

The interior is arranged very neatly, and there are compartments for the following articles. One

bottle aromatic spirits of ammonia, one bottle of brandy, one box of mustard, marked "for poisons," one box of bicarbonate of soda, marked "for burns," spools of adhesive plaster, large roll of adhesive plaster, patent lint, antiseptic gauze, splints, bandages, pillow, tourniquet or rubber strap, blanket, and absorbent cotton.

It is expected that the rest of the boxes will be ready for distribution in a few days, and then, the officials think, the value of the patrol wagon when called to the scenes of accidents will be increased considerably. The manuals issued by the police surgeon a short time ago have proven of great value, and nearly every officer has acquainted himself with the proper treatment to give to an injured person.

—The Board of Health of Cleveland, Ohio, is taking energetic steps to put a stop to the use of impure ice in that city, of which there has been much complaint.

—The female medical students of Edinburgh, at least some of them, think they know their rights; so thinking "dare maintain" them. Two young women were dropped from the school of medicine without reason assigned, and have consulted a solicitor, who was informed by the dean that the expulsion was for staying in a hospital later than 5 P. M., when the rules require them to go. They said they stayed to see an "accident," and have sued the medical school for £500 damages.

—Dr. Joseph Warrington, who died at the age of eighty-three years in Moorestown, N. J., recently, was, before he gave up his practice in 1875, one of the most distinguished physicians in Philadelphia. He was one of the founders of the Philadelphia County Medical Society, and of the State Medical Society of the State of Pennsylvania, and he was delegated by the Philadelphia Medical Society one of its representatives to organize the American Medical Association at a meeting called for that purpose in New York city.

Dr. Warrington was the founder of an obstetric institute, now called the Lying-in and Nurse Society," in 1839, the home of which is located at Eleventh and Cherry streets, and he was one of the original charter members of the Philadelphia Lying-in Charity, in 1832, in which he established a lectureship.

—The following edifying advice was very recently given by a Methodist Episcopal doctor of divinity to the graduating class of an eclectic medical school as an accompaniment of the diplomas. He advised the young doctors to keep their shelves filled with

good, new books, even though they might not get time to read them, not only for the inspiring effect upon themselves of looking at the backs, but for the effect on people who happened to drop into their offices.

As a bit of parting advice he urged them to beware how they admitted ministers of the Gospel into sick-rooms, as ministers, the devil, and the undertakers all wear long, black coats, and generally have a depressing effect on the sick. The minister's work, he thought, was with the living, and not with the dying, except in rare instances.

—The Philadelphia Crematorium advertised in the daily press for bodies to incinerate. The secretary of the corporation is thus reported in explanation: We are advertising because we want business. We have made a rather heavy investment in this property. It is there, ready for business, and we want the public to know it. We have a fixed price of \$50 for the incineration of a body. We cremated the first body on May 1st of this year. It was that of a well-known Spiritualist. Since then we have burned thirteen more bodies, four of which were Spiritualists while in the flesh. We have had no Catholic remains to dispose of yet. There are about one hundred and seventy-five shareholders, most of whom believe in cremation. For the \$50 charged we burn the body and furnish a tin can as a receptacle for the ashes of the consumed body. We keep the coffins in which the remains are brought to us, and destroy them by breaking them up and burning them.

NEW YORK.

—At a meeting of the Academy of Medicine held December 6th, Dr. James R. Leaning read a paper on "Acoustics Applied to the Human Chest in Physical Diagnosis," and the following officers were nominated: president, Dr. A. L. Loomis; vice-presidents, Drs. E. G. Janeway, Francis Delafield, and D. B. St. John Roosa; recording secretaries, Drs. Jacobus and Hepburn; corresponding secretaries, Drs. Starr, Kinnicutt, and Garrigues; treasurers, Drs. Cushman, Lewis, and O. B. Douglas; trustees, Drs. Jacobi, Janvrin, Knapp, Noyes, and Lawrence Johnson.

—Dr. Robert H. Sabin, a prominent physician of West Troy, died December 4th. He was a highly esteemed fellow of the New York State Medical Association from its organization, and always took an active part in its annual sessions, as well as in the meetings of the branch association to which he belonged. His contributions, whether in the form of separate papers or of discussions, were full of practical value, and showed a large and varied experience.

Correspondence.

A JAPANESE HIS OWN SURGEON.

TOKIO, November 13, 1888.

MR. EDITOR:—I enclose a letter from a young army surgeon, twenty-two years old and just out of the medical school, which strikes me as good in its way. I never heard of another such a case, except that of the traditional Western trapper who amputated his leg with a bowie and a wood-saw, and cauterized the stump with a poker. I believe Mark Twain is the authority for the tale. I cross out irrelevant matter, in case you think the letter is worth publishing.

The last word—*itai*—is literally "pain," just equivalent to "Oa weh!" as used by children.

Very truly yours,

B.

TOKIO, 4, 10 21.

MY DEAR SIR:—I have received your note to-day. It was addressed to the Military Hospital, and now I do not go there. So it came to my hand so late. Namely I had since some years a mild form of prolapsus recti—the protrusion of a ring of mucous membrane through the anus. It became suddenly very worse since about two weeks, probably because I have to stand up very long in the military manner. It became so bad that I could not go to the hospital, and I made mind to have operated. The day before yesterday (the 2nd inst.) I called a practising physician of my neighborhood to my house, and I operated my anus myself with cocaine and mirror. I burnt five good-sized folds of mucous membrane with the thermo-cautery, and am taking opium internally to avoid the passage of the dirt through the anus. To-day my pain is nearly gone. But I am not able to go out for a week or ten days more. I been in bed at my house. Hoping to see you at any rate very soon. Yours very truly.

The operation of my anus lasted from 4 P. M. till 9 P. M., five hours, very painful.—*itai*.

HOW TO CONSTRUCT A PRESCRIPTION.

SEATTLE, WASHINGTON TERRITORY,

Nov. 28, 1888.

MR. EDITOR,—Instead of the useless $\frac{1}{2}$ as a symbol, I use one composed of figures which have a meaning. If I want a four-ounce mixture of thirty-two teaspoonful doses, I use for a symbol $\frac{32}{12}$ (or 32—12). I then write the names of the different medicines I want in the prescription. If I want ten grains of A medicine to each dose, I write one half of ten, calling for drams, written just as we write dollars and cents, thus: 5.00. If I want twelve grains or minims of B medicine, I write one half of twelve, calling for drams as before. This shows the meaning of the $\frac{1}{2}$ in the symbol. Suppose I want the fourth of a grain of C medicine to each dose. The 32 of the symbol is a dividend for fractions of a grain. I say, mentally, 4 in 32 equal 8 times, and write .08 or eight grains for the druggist to furnish. Certainly no further illustration of the use of the upper figures of the symbol is necessary. These rules apply to all sizes of prescriptions, the symbols for two, four, six, and eight ounce prescriptions are respectively 16—14, 32—12, 48—34, and 64—1.

In an eight-ounce prescription the figures calling for drams are the same that is given in each teaspoonful dose; thus,—in an eight-ounce mixture, if I want five grains or minims to each teaspoonful dose, I write 5.00 for the druggist to furnish. Of course this assumes that the dram contains sixty-four grains, which is near enough for all practical purposes.

Now let me construct a six-ounce mixture. I want of A sixteen grains, of B eight minims, of C the fourth

of a grain, and of D the sixth of a grain. I write as follows:—

For		Date.	Dr
$\frac{49}{24}$	A		1200
	B		6.00
	C		.12
	D		

A.p.v.q.s. Take a teaspoonful every four hours.

A.p.v.q.s. means any proper vehicle, enough to make a mixture the size indicated by the symbol. I believe physicians should order medicines only, and let the druggist exercise his skill in making the prescription as pleasant as possible. I discard all signs of grain, minims, scruples, drams, and ounces. I see no use in writing "fluid," when the medicine is known to be fluid. As well might one call for a fluid dram of water. I see no use of "M." "S." Surely the druggist knows enough to mix and write without being ordered every time. I seldom mix more than two or three medicines in one prescription. It is better to order not larger than an eight-ounce mixture; two, four, or six are much better, as then a change can be made, if necessary, without much expense to the patient. In case tablespoonful doses are wanted, calculate for teaspoonful doses, and then take one fourth. Look at the prescription given. If I want tablespoonful doses I write one fourth of twelve, equal to three (3.00), one fourth of six, equal one and a half (1.50), etc. Another way is, when

tablespoonful doses are wanted, to change the symbol, dividing the figures by four, in this case making the symbol 12—3.16 instead of 48—3.4. It will be noted that a two-ounce prescription with teaspoonful doses is the same as an eight-ounce prescription with tablespoonful doses. I call attention to these simple facts, not because I think physicians too stupid to see them, but to illustrate the principle of the dram-grain plan of writing prescriptions. Look at the prescription given once more. See how easy it is to calculate the amount of medicine of each kind in each dose. Of A twelve drams are called for. Multiply twelve by the fraction of the symbol, thus: 4 times 12 are 48, 3 in 48 = 16 times, the number of grains to each dose. Again, of B six drams are called for; 4 times 6 = 24, 3 in 24 = 8, the number of minims wanted. I think the rule is already self-evident to your readers, namely, divide the amount wanted by the fraction of the symbol, and write the result for the druggist to furnish. In a two-ounce prescription write one fourth, that is to say, if four grains are wanted, write one dram. In a four-ounce prescription write one half, in a six-ounce prescription write three fourths, in an eight-ounce prescription write the same.

I shall be pleased to send to any address a condensed statement of both the "dram-grain plan" and the "gram plan" of writing prescriptions.

Very truly yours,

C. H. MERRICK, M.D

REPORTED MORTALITY FOR THE WEEK ENDING DECEMBER 1, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infections Diseases.	Acute Lung Diseases.	Diarrheal Diseases.	Typhoid Fever.	Diph. & Croup.
New York.....	1,526,081	691	242	18.48	16.38	2.38	.84	7.00
Philadelphia.....	1,016,758	302	106	8.91	10.23	.33	1.65	3.63
Brooklyn.....	751,432	306	117	19.80	19.14	—	1.32	13.53
Chicago.....	760,000	245	97	25.66	9.90	90	6.30	17.05
St. Louis.....	449,160	134	55	16.28	12.58	1.48	2.22	11.20
Baltimore.....	437,155	167	61	15.60	7.80	2.40	3.60	2.40
Boston.....	407,024	172	51	19.78	8.62	.86	4.30	12.90
Cincinnati.....	325,000	110	—	—	—	—	—	—
New Orleans.....	248,000	114	49	14.96	7.92	7.04	.88	6.16
Buffalo.....	230,000	—	—	—	—	—	—	—
Washington.....	225,000	98	32	8.16	11.22	1.02	2.04	1.02
Pittsburg.....	210,000	—	—	—	—	—	—	—
Milwaukee.....	200,000	—	—	—	—	—	—	—
Providence.....	123,000	—	—	—	—	—	—	—
New Haven.....	80,000	—	—	—	—	—	—	—
Nashville.....	65,153	17	3	23.52	11.76	—	11.76	—
Charleston.....	60,145	42	13	4.76	2.38	2.38	—	2.38
Portland.....	40,000	11	3	—	18.18	—	—	—
Worcester.....	76,328	24	10	—	—	—	—	—
Lowell.....	69,530	—	—	—	—	—	—	—
Cambridge.....	64,079	22	4	11.11	22.22	4.55	4.55	—
Fall River.....	61,203	20	8	15.00	20.00	5.00	5.00	5.00
Lynn.....	51,467	11	—	18.18	—	—	9.09	9.09
Lawrence.....	40,175	15	7	—	12.50	—	—	—
Springfield.....	39,952	17	2	23.52	11.76	—	1.76	—
New Bedford.....	36,298	12	2	16.66	—	8.33	8.33	—
Somerville.....	33,307	—	—	—	—	—	—	—
Holyoke.....	32,887	—	—	—	—	—	—	—
Salem.....	28,781	9	—	—	—	—	—	—
Chelsea.....	27,552	6	1	—	—	—	—	—
Haverhill.....	24,979	5	—	—	40.00	—	—	—
Taunton.....	24,796	—	—	—	—	—	—	—
Brockton.....	24,784	11	5	—	18.18	—	—	—
Gloucester.....	23,187	—	—	—	—	—	—	—
Newton.....	21,105	4	1	25.00	—	25.00	—	—
Malden.....	18,932	5	2	40.00	40.00	—	—	40.00
Fitchburg.....	17,534	7	4	42.84	—	14.28	14.28	14.28
Waltham.....	16,651	5	1	—	20.00	—	—	—
Newburyport.....	13,839	7	2	—	14.28	—	—	—
Northampton.....	13,419	—	—	—	—	—	—	—

Deaths reported 230 under five years of age 878; principal infectious diseases small pox, measles, diphtheria and croup, diarrhoea diseases, whooping-cough, erysipelas, and fevers 428, consumption 368, acute meningitis 32, diphtheria and croup 188, typhoid fever 60, scarlet fever 50, diarrhoea diseases 48, whooping-cough 24, measles 18, malarial fever 15, erysipelas eight, cerebro-spinal meningitis seven. From scarlet fever, New York 25, Philadelphia none, Baltimore five, Chicago four, Brooklyn three, St. Louis, Cincinnati, New York, and Fall River one each. From whooping-cough, New York and Brooklyn nine each, Chicago and Washington two each, Philadelphia and Baltimore one each, From measles, New York 12, Chicago five, Baltimore one, From malarial fever, New York six, Baltimore four, Brooklyn three,

Cincinnati and New Orleans one each. From erysipelas, New York four, Chicago, St. Louis, and Washington one each. From cerebro-spinal meningitis, New York three, Baltimore, Washington, Nashville, and Brooklyn one each.

In the 28 greater towns of England and Wales, with an estimated population of 9,398,254, for the week ending November 17th, the death-rate was 19.7. Deaths reported 3,571. Infants under one year 82; measles 212; scarlet fever 62; diphtheria 62; whooping-cough 55; diarrhoea 52; fever 51; small pox (1 child) one.

The death-rate ranged from 12.5 in Brighton to 29.3 in Cardiff, Birmingham 16.4; Blackburn 23.3; Hull 21.1; Leeds 31.1; Liverpool 22.2; London 19.7; Manchester 24.7; Norwich 17.3; Nottingham 16.3; Sheffield 20.1; Sunderland 21.4.

In Edinburgh 15.1; Glasgow 18.3.

The meteorological record for the week ending November 21, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, at the United States Signal Corps:—

Week end'g	Barometer.		Thermometer.		Relative Humidity.		Direction of Wind.		Velocity of Wind.		State of Weather.*		Rainfall.
	Daily Mean	Daily Maximum	Daily Minimum	S. A. M.	S. P. M.	Daily Mean	S. A. M.	S. P. M.	S. A. M.	S. P. M.	S. A. M.	S. P. M.	
Saturday, Nov. 21, 1888.													
	Daily Mean	Daily Maximum	Daily Minimum	S. A. M.	S. P. M.	Daily Mean	S. A. M.	S. P. M.	S. A. M.	S. P. M.	S. A. M.	S. P. M.	Duration, Hours & Mins. Amount, in Inches.
Nov. 18	32.50	32.0	33.0	26.0	45	81	63.0	N. S.	9	6	F. O.		.00
" 19	30.36	45.0	56.0	34.0	78	92	85.0	E. W.	14	10	R. R.	12.45	.30
" 20	30.40	32.0	39.0	28.0	65	51	58.0	N. W.	24	21	C. C.	2.15	.01
" 21	30.58	30.0	31.0	25.0	55	40	52.0	N. W.	12	3	C. C.		.00
" 22	30.52	24.0	33.0	21.0	62	52	52.0	N. W.	8	17	C. C.	0.06	T.
" 23	30.70	20.0	25.0	13.0	68	58	58.0	N. W.	20	5	N. O.	5.23	T.
" 24	30.55	32.0	34.0	22.0	58	81	70.0	N. W.	10	15	O. O.		.00
Means for the Week	30.51	36.0	22.0			70.0							

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM NOVEMBER 30, 1888, to DECEMBER 7, 1888.

WILLIAMS, JOHN W., major, surgeon United States Army. Is hereby relieved from further duty with the battalion of the Second Artillery at Fort Warren, Mass., N. Y. H., and will proceed to his permanent station, Jackson Barracks, La. Par. 3, S. O. 258, Headquarters Division of the Atlantic, Governor's Island, N. Y. City, Dec. 5, 1888.

By direction of the Secretary of War the leave of absence granted First Lieutenant ROBERT E. BALL, assistant surgeon, in special orders No. 129, Oct. 15, 1888, Department of the Missouri, is extended one month. Par. 11, S. O. 219, A. G. O., Washington, Nov. 30, 1888.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING DECEMBER 6, 1888.

STONER, G. W., surgeon. When relieved, to proceed to Detroit, Mich., and assume charge of the service. November 26, 1888. Granted leave of absence for thirty days. November 28, 1888.

CARMICHAEL, D. A., passed assistant surgeon. Granted leave of absence for thirty days. November 27, 1888. Relieved from duty at Washington, D. C., ordered to marine hospital, Wilmington, N. C. December 3, 1888.

DEVAN, S. C., passed assistant surgeon. Detailed as attending surgeon and acting chief clerk Marine Hospital Bureau. December 3, 1888. Granted leave of absence for eight days. December 6, 1888.

TRICHAULT, F. M., passed assistant surgeon. To proceed to Evansville, Ind., for temporary duty. November 30, 1888.

BROOKS, S. P., passed assistant surgeon. Granted leave of absence for thirty days. December 8, 1888.

NORMAN, SEATON, assistant surgeon. Ordered to examination for promotion. November 27, 1888. Granted leave of absence for twenty-five days. December 8, 1888.

FATIG, J. B., assistant surgeon. Ordered to examination for promotion. December 7, 1888.

MADEITER, G. M., assistant surgeon. Relieved from special duty at Way Cross, Ga. December 8, 1888.

KINYO, J. J., assistant surgeon. Granted leave of absence for ten days. December 8, 1888.

VAUGHAN, G. T., assistant surgeon. Granted leave of absence for twenty-three days. December 8, 1888.

GUTHRIE, G. M., assistant surgeon. To proceed to Savannah, Ga., for temporary duty. December 3, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING DECEMBER 8, 1888.

BRANSON, J. F., surgeon, detached from Smithsonian Institution, and granted six months leave, with permission to go abroad.

SOCIETY NOTICE.

NORFOLK DISTRICT MEDICAL SOCIETY.—A meeting for selection of the improvement will be held at the hall of the Roxbury City Guard, 67 Warren St., Roxbury, December 18, 1888, at 7.45 P. M. Communications: "The Treatment of Fever," by F. W. Vogel, M. D.; "Antipyrexin," by E. E. Burdett, M. D.

S. ALLEN POTTER, M. D., Secretary.

BOOKS AND PAMPHLETS RECEIVED.

The Radicle Cure of Varicose, attended with Redundancy or Septum, demonstrated by Time. By Morris H. Henry, M. A., M. D., LL. D., of New York, officer of the Royal Order of the Savior of Greece; commander of the Imperial Orders of the Medjidie and of L'Osmanie, of Turkey, formerly surgeon-in-chief of the State Emigrant Hospitals of New York, etc. Announced, but not read, before the Section on Surgery, at the thirty-ninth annual meeting of the American Medical Association, May, 1888.

Funtes Therapeutiques et Pathologiques sur le Furuncle De L'oreille. Par Le Docteur Lowenberg. Paris: 1888.

Publications du Progrès Médical. La Mort par la Dépendance Par Le Dr. Paul Logy. Préface de M. le Dr. F. Brouardel. Paris: 1888.

The University of Minnesota. Catalogue for the year 1887-88; and Announcement for the year 1889.

The Yellow Fever Pamc. By J. C. Lefland, M. D.

Sixth Biennial Report of the Board of Trustees of the State (charitable Institutions of the State of Kansas, for the two years ending June 30, 1888. Topeka, Kan.: 1888.

The Contagiousness of Phthisis (Tubercular Pulmonitis). By Lawrence F. Flick, M. D., of Philadelphia. Reprint. Philadelphia: 1888.

The Catalogue of the Tokyo Medical Library. Se-i-Kwai, No. 6 Shin Sakaguchi, Kyobashi Ku, Tokyo. Tokyo: 1888.

The Constitution and By-Laws, with the Officers and Members for 1888-89, of the American Pediatric Society, organized in Washington, D. C., September 18, 1888. Philadelphia: 1888.

The Chemical Factor in Disease. By Hugh Hamilton, M. Sc., M. D., of Harrisburg. Reprint.

Transactions of the Colorado State Medical Society. Eighteenth Annual Convention, Colorado Springs, June, 1888.

The Annual Report of the Health of the Imperial Japanese Navy for the 20th year of Meiji (1887).

Incurable Asylums and their work. By T. D. Crothers, M. D.

Why Electrolytic Treatment of Stricture does not succeed in all hands. By C. C. H. Meier, M. D., Member of the New York State Medical Association. New York: 1888.

Double Ovariotomy during Pregnancy; subsequent delivery at term. By William Warren Potter, M. D. Reprint.

Treatment of Heart Disease. By James Barr, M. D. Mitral Stenosis. Reprint.

Original Articles.

TREATMENT IN CASES WHERE SYMPTOMS
POINT TO INFLAMMATION IN THE MAS-
TOID ANTRUM AND MASTOID CELLS;BUT WHICH DO NOT CALL FOR AN ARTIFICIAL OPEN-
ING INTO THE MASTOID PROCESS.¹

BY H. L. MOISE, M. D.

I MUST call your attention for a moment to the anatomical relation of the mastoid antrum and mastoid cells to the tympanic cavity.

In a very large proportion of cases the antrum is really a part of the tympanic cavity, or is separated from it only by a thin membrane. The cells also usually have direct communication with the antrum, or if they do not, they are divided from it by thin, bony septa, which open into each other, thus keeping up a communication with the antrum. The mucous membrane lining these cavities is a prolongation of that lining the middle ear, so that one may say that the tympanic cavity, mastoid antrum, and mastoid cells are all parts of one large cavity, more or less completely separated from each other by membranous, or thin, bony septa, and lined by a continuous mucous membrane.

I will also ask you to notice that the three bone specimens exemplify three characteristic forms of the mastoid process. In the specimen marked No. IV. the cells are normal in size and number. In No. II. the whole mastoid is divided into four or five large cells and its walls are very thin indeed; and in No. V. you see a very thick outer wall, and at the lower portion what is known as a sclerosed condition of the cells, they being filled up, and the bone becoming almost solid. This condition, which is here confined to the lower part of the specimen, is often found extending all through the mastoid process, and greatly complicates matters in case an opening has to be made into the bone by a surgeon.

On each of the specimens the groove which in life contains the lateral sinus is painted blue, and you will notice how near it approaches to the mastoid antrum, and how low down and far forward it extends in No. II. and IV., in fact, how little room the surgeon would have in case he was making an opening into the mastoid process at the point of election.

From the free communication which you see exists between the tympanic cavity, the antrum, and the cells, we should expect that any inflammation which attacked the mucous membrane of the former of these cavities would be likely to spread to the others, and this is what takes place; the antrum and cells are involved to a greater or less extent in almost all inflammation of the tympanic cavity.

It is my purpose to speak of the methods of treating these cavities in cases where they are involved to the extent of causing pain, tenderness, redness, and swelling behind the ear, but where the symptoms are not sufficiently severe and alarming to force us to make an opening into the mastoid process, until all other measures for relief have been tried without success.

¹Read before the Boston Society for Medical Improvement, November 26, 1888.

Roughly speaking, we may class the methods of treatment under three headings:—

First, free outlet for the discharge, whatever its character, by way of the external auditory canal; and the application of either dry heat or dry cold to the surface of the mastoid.

Second, blood-letting by live leeches or the artificial leech, behind the ear.

Third, an incision behind the auricle about one quarter of an inch from it, carried down to the bone, and dividing the periosteum which covers the surface of the mastoid—Wilde's incision. Often, especially in acute cases, one or more of these procedures is sufficient to relieve the symptoms mentioned.

In simple acute inflammations of the tympanic cavity, before rupture of the membrana tympani has taken place, and especially if the membrane has become thickened by previous inflammatory processes, or where the perforation is a very small one, it is not uncommon to have pain and tenderness behind the ear. The mucous membrane lining the middle ear, and usually that lining the entrance, being acutely inflamed, swells, and by so doing diminishes the size of these cavities; at the same time it secretes very rapidly a profuse serous discharge, which soon fills the tympanic cavity, backs up into the antrum and even into the cells, presses upon the bony walls, and until an outlet is found for it causes pain in the ear and over the mastoid, which is often severe, and may cause such serious symptoms that one can scarcely believe that they are due to a simple inflammation of the middle ear. In these cases, if seen soon enough, paracentesis of the membrana tympani, and gentle inflation of the ear by Politzer's air douche or the eustachian catheter, is usually all that is necessary to cause the pain and other symptoms to disappear. But the opening in the membrana must be kept free until the height of the inflammatory process is passed. Together with the paracentesis it is well to apply dry heat or dry cold to the surface of the mastoid. Heat is best applied by means of a flannel bag about seven inches long and three inches broad, shaped like a kidney; fill this two-thirds full of salt, heat it in the oven, and lay it behind the ear; never place it over the meatus, or, instead of heat you may employ cold, and this is often more effectual, using ice wrapped up in rubber cloth or Leiter's apparatus.

The next class of cases which I will speak of is acute inflammation with a thick purulent or mucopurulent discharge and a small perforation of the membrane, and together with these, what are often called nipple cases, where the perforation is so small and the discharge so profuse and so thick, that in its effort to get out it pushes before it the edges of the perforation, and you have a narrow canal, often as much as one eighth of an inch in length, projecting outward from the surface of the membrana tympani, and shaped like a nipple. Through this canal the discharge makes its way slowly and with difficulty, and it frequently becomes blocked altogether by mucus.

In these latter cases you almost always have the symptoms of pain, redness, and tenderness behind the ear. The treatment consists in passing a paracentesis needle, or, better still, a very small

knife (made for the purpose), through the nipple, or small perforation as the case may be, and make a large incision (much larger than you would ordinarily make) through the membrana. It is frequently necessary to repeat this in a day or two, as the wound made by the operation very often heals, and you have a repetition of the nipple on the membrana, and of the pain and tenderness behind the ear. The ear is to be gently inflated by the air douche or catheter, hot or cold applications are to be made to the mastoid process, and in addition it is often well to syringe through the eustachian tube by means of a catheter, warm water with a little bicarbonate of soda in it; this thins the discharge, clears out the middle ear, and dissolves or washes out the mucus, which in so many of these cases clogs the free flow of the discharge.

In another class of cases, usually where the discharge from the middle ear has been established for some time, and the case has been treated at home without calling in a doctor, the external auditory canal is swollen to such an extent that it is impossible to get a view of the membrana. The mastoid is red, very tender, and often edematous. The first thing to be done is to douche the external canal, frequently and gently, with warm water, to endeavor to reduce the swelling somewhat. If we succeed in this, we almost always find that there is an insufficient opening in the membrana, which has to be enlarged as in the preceding cases, we also find that the discharge, in its efforts to make an outlet for itself, has forced the posterior superior portion of the membrana tympani away from its attachment to the bony wall of external auditory canal, and that the pus has dissected its way outward between the skin and the bony wall, causing the soft parts to bulge downward into the lumen of the canal, and to materially diminish its calibre. A very free incision should be made into this fluctuating mass, both to give free exit to the pus already collected there, and to serve as an additional outlet for the discharge from the middle ear, beside the opening in the membrana. In these cases also, syringing through the eustachian tube is very often useful, to wash out the swollen and obstructed tympanic cavity. If the pain, tenderness, and swelling over the mastoid are marked, it is usually necessary, in addition to what I have already mentioned, to apply leeches just behind the auricle, and close to it; I prefer the live leeches, and put on from two to four. In case the doctor does not personally attend to the leeching, it is well to mark on the skin the spots where he wishes them to be applied, otherwise they are very apt to be put on so far away from the auricle as to be of little or no use. In case the artificial leech is used, Dr. Bacon's instrument, which I have here, is, I think, the best and most convenient. It has the advantages that it is possible to take the blood from the exact spot desired, that the exact amount of blood necessary can be extracted, and that it is much quicker and more convenient. I do not think, however, that it draws the blood from the deeper tissues so well as the live leeches do. At a later stage in these cases we have the same bagging downward of the posterior superior wall of the external canal, and pain, tenderness, swelling, and doubtful fluctuation behind the ear. Here the pus,

besides dissecting the soft parts of the external auditory canal away from its bony wall, has forced its way through one of the fissures of Santorini in the posterior wall of the cartilaginous portion of the external canal, and has formed a more or less well defined abscess either under the periosteum covering the external surface of the mastoid, or in the soft parts outside of the periosteum. In these cases the treatment would be the same as given above, except that instead of leeching we should etherize the patient, and make an incision about an inch long behind the auricle and parallel to it, down to the bone, being careful to divide the periosteum by the cut. This operation serves two purposes: it lets the blood freely at the exact spot where it is advisable to do so, and if there is a collection of pus it gives it free outlet. The wound must be probed daily, and kept freely open down to the bone, as long as bare bone can be felt in the wound, or a swollen bulging condition of the posterior wall of the external canal can be seen. All the cases of which I have spoken up to this point come under the head of acute cases, and it is usually in acute cases that the symptoms of pain, tenderness, and swelling over the mastoid will yield to the methods I have described. In a certain number of chronic cases, however, it is possible to relieve the symptoms without having recourse to the operation behind the ear.

In old neglected cases of otorrhea, we often find the external auditory canal blocked completely up by polypi, which cause retention of pus, backing up, and pain and tenderness behind the ear, all of which vanish when the polypi are removed by the snare, the drainage of the tympanic cavity and mastoid antrum by way of the external auditory canal made good, and the masses of foul and cheesy pus with which these cavities have been filled washed out. In washing out the antrum, the middle-ear syringe plays a very important part. It consists of a very fine tube about four inches long, with the tip either straight or bent upward; it is attached to a syringe; and it is extraordinary what masses of cheesy pus and epithelium can be washed out of the upper portion of the tympanic cavity and mastoid antrum, by the help of this little instrument, after the tympanic cavity was apparently perfectly clean to one examining it through the external auditory canal.

Considerable care has to be exercised in using this instrument. The tip is passed into the tympanic cavity through the perforation in the membrana, and a stream of warm water is directed upward, or upward and backward, thus washing out the attic of the tympanic cavity and the mastoid antrum. The patient is cautioned not to move the head suddenly, even if in pain, but to tell the doctor, for if he did move suddenly the curved tip of the instrument might catch on the ossicles or the edge of the perforation and a serious accident be the result. The middle-ear syringe, therefore, is generally used on old patients who are accustomed to manipulations about the ear. Sometimes a patient who has had a discharge from the ear at some previous time, but whose ear has long been dry, will begin to have pain and tenderness over the mastoid. On looking into the ear you see a dry perforation of the membrana, and what looks like

a small dry scab in the neighborhood of the opening into the mastoid antrum. On removing this scab, you will find that it is only the outer layer of a mass of epithelium and dried pus which fills the antrum, and which by its presence as a foreign body has irritated its mucous lining; this irritation has set up a discharge which, soaking into the mass, has caused it to swell, and it has become so tightly wedged that the discharge cannot get out, and we have backing up, and the consequent pain and tenderness. Often the situation is complicated by the presence of granulations and small polypi.

Treatment consists in filling the ear with warm water with a little bicarbonate of soda in it, and allowing this to remain in the ear ten or fifteen minutes, to try and soften the mass; pulling the mass out or breaking it in pieces by the straight or curved forceps; syringing the ear with the ordinary and the middle-ear syringe; pulling off with the forceps the polypi and granulation tissue, and repeating these processes several times if necessary. Usually we succeed in removing the mass, thus clearing out the antrum, and setting free the imprisoned discharge, with relief to the symptoms; sometimes we do not, and it becomes necessary to make an opening into the mastoid cells, but it is always well, unless the symptoms are very urgent, to try what can be done by the forceps and syringe before resorting to the operation.

These are the methods of treatment to which I wished to call your attention, and these are the cases in which it is appropriate to employ them. Often it is best to try them in a different order from that in which I have spoken of them; each case has to be judged by itself, and there can be no hard and fast rule laid down.

Let me briefly recapitulate them. In acute inflammation with imperforate membrana: paracentesis; inflation; and hot or cold applications behind the ear. Acute inflammations, with purulent or muco-purulent discharge, and an inadequate opening in the membrana, and also nipple cases: large incision in the membrana; inflation; syringing through the eustachian tube; hot or cold applications over the mastoid.

Inflammation with purulent discharge, where the external auditory canal is almost closed by swelling, and the downward bulging of its posterior superior wall: frequent and prolonged douching with warm water; free incision into the wall of the canal, enlarging the opening in the membrana as soon as the swelling has subsided sufficiently for us to get at it; leeching behind the auricle; and in the more severe cases, especially if fluctuation be detected, Wilde's incision.

In chronic inflammations, where polypi are present: the snare; and, after their removal, the middle-ear syringe. For cholesteatomatous masses in the attic and antrum, soaking the ear with a solution of bicarbonate of soda; the middle-ear syringe; the use of the straight or curved forceps.

Many of these forms of treatment require the specially trained hand of the aurist; most of them can be best accomplished by him; but, on the other hand, some of them can be performed perfectly well by the general practitioner, and if it so happen that he cannot call an aurist in consultation, it is far better, in my opinion, for him to try some of

the methods which I have mentioned rather than to feel that, if a patient has pain, tenderness, and swelling behind the ear, there is but one thing to be done, namely, to make an opening into the mastoid cells.

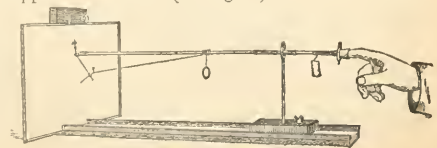
You noticed in the bone specimens Nos. II. and IV. how close the lateral sinus came to the mastoid antrum; by an anomalous position of the sinus it sometimes happens that a person operating exactly according to the rules laid down, as to where the opening into the mastoid cells should be made, can not avoid laying bare the sinus. This, fortunately, does not occur frequently, and usually is not attended by any very great danger when the operation is being performed by one who is accustomed to it, and knows exactly what the possibilities are, but it certainly is not an operation to be undertaken by a general practitioner, unless he is unable to procure the assistance of an aurist, and has tried the other methods which I have endeavored to describe to you, without relieving the symptoms. I have purposely confined myself to those cases where the symptoms are not so severe and alarming as to leave no doubt but that the mastoid cells must be laid open.

OBSERVATIONS ON THE STEADINESS OF THE HAND AND ON STATIC EQUILIBRIUM.

BY W. N. BULLARD, M. D., AND E. G. BRACKETT, M. D.

IN the spring of 1886, in conversation with Dr. H. P. Bowditch, one of us suggested the advisability of some contrivance by means of which the steadiness of the hand could be readily determined. Dr. Bowditch thought well of the matter, and kindly invented the instrument used, and had it made at the physiological laboratory of the Harvard Medical School. For this instrument we suggest the name of tremograph.

It consists essentially of a long, light, wooden rod, which runs through a closely fitting brass cylinder so hung in a vertical compass-joint on the top of a firm upright as to permit of movement both vertically and horizontally in all directions. One end of this rod is furnished with a thimble or some other contrivance for holding the finger, while to the other is attached a Pflüger's pen. Various weights may be attached to the rod at various distances from its point of support, which of course can be varied at will, so as to keep it when unmoved in an absolutely horizontal position. The upright, made of brass, is placed in the centre of a rectangular wooden base, which can be moved backward or forward on a wooden platform with low, grooved sides, into which it fits closely. At one end of this platform is a transverse groove behind which rises a transverse board. This groove serves to hold the glass plate over which the paper for the tracings is stretched, while the board supports it behind (see figure). To the contriv-



ance holding the pen is attached a string by which the whole can be pulled backwards when not in use, and this string may be fastened to a little hook on the rod. When in use this string is loosened, the penholder hangs vertically, and the pen, projecting horizontally, comes into contact with a sheet of paper, which is placed over a layer of glass so as to offer a surface both smooth and firm for writing. The finger of the person to be tested is then placed in the thimble, which is connected with the rod by a compass-joint, and the motions of the finger will be accurately recorded on the paper. According as the point of support of the rod is at its middle or nearer one or the other end, so will the lines on the paper be of the same size as the actual movement or proportionately greater or less. As a matter of fact the tracings were magnified four times, that is, they were to the movements of the hand as four to one.

The first experiments with this instrument were made in the spring of 1886, but they were too few to be of any positive value. The work was resumed in the winter and spring of 1887, and has been continued more or less steadily ever since.

In order to give our investigations a positive value, it was thought best to first determine what position of the hand was most favorable for the tracing of the tremors or movements to be studied. For this purpose the first series of tracings were made. They were used only to compare the results obtained according as the hand was held in different positions. The tracings in this series were taken from eighty-five patients at the Boston Dispensary, and six tracings were taken from each patient.

It is evident that from such subjects it would be impossible to obtain a normal standard of steadiness; for although all due care was taken not to make use of any whose disease would directly affect them in this regard, yet any person suffering from an ailment severe enough to cause him to seek medical advice could hardly be expected to produce as firm a tracing as in perfect health. Besides, not only did the ordinary nervousness of patients at such a time affect the subjects, but this was greatly increased by their apprehension at the sight of a new and unknown instrument, which was frequently regarded as some modification of the electric battery, and momentarily expected to break out in some startling way.

For this reason it was early determined to use these tracings only to determine the relative value of the different positions of the hand for our purpose. The hand was tested in three positions in every case—pronation, supination, and midway between the two, both with the eyes open and with the eyes closed. This makes six differ-ences in each case, which for convenience have been numbered in the diagrams as follows:—

- I. Pronation, eyes open.
- II. Pronation, eyes closed.
- III. Supination, eyes open.
- IV. Supination, eyes closed.
- V. Midway, eyes open.
- VI. Midway, eyes closed.

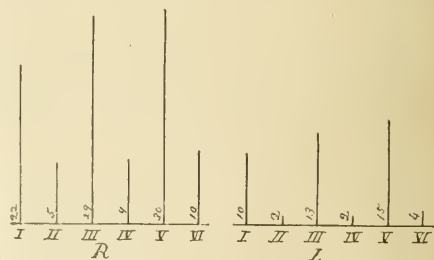
All the tracings taken have been divided into two groups, I. Stable, II. Mobile.

In a certain proportion of cases no definite direction was taken, but the hand remained approximately

at the point of starting. The tracing then appeared as an aggregation of many intercrossing lines, and was not developed in any special direction, its size, of course, varying directly with the steadiness of the subject. These cases have been designated as *stable*. In all the others the hand moved in some general direction from the starting point, and these have been grouped according to the direction taken by the hand (the opposite of that taken by the pen), under the headings Up, Down, Right, and Left.

Group I. *Stable*. The hand was held more or less firmly in the original position. It may or may not have been steady, but what movement there was was confined within very narrow limits, and there was no definite continuous movement in any one special direction.

The relative number of tracings of this character obtained under each of the six conditions is represented by the diagrams below. The two series represent respectively the numbers obtained when the right hand of the subject was tested, and when the left hand was used. In each series the height of the lines corresponds more or less roughly with the actual number of tracings in said series, and this number is noted by the Arabic figures, while the Roman numerals below each vertical line denote the special condition under which the tracing was taken.



Comparing the lines in each diagram, which represent the number of the tracings in which the subject's eyes were open (Nos. I, III, V), it is seen that the lines increase in height in the order named, and again, in these representing the number of tracings in which the eyes were closed (Nos. II, IV, VI), a similar increase in the same order is observed. Thus the number holding the hand approximately in the original place is smallest in the position of pronation, and greatest when the hand is held midway between supination and pronation. Moreover, if we compare the average excursion, in both vertical and horizontal directions, of tracings in this group in which the eyes were open, with those in which the eyes were closed, the hand being held in each case in the same position, we find that the loss of the control of sight is felt more in the position of pronation than in either of the others, except in that of supination with the eyes closed, when the lateral movement predominated.

The following are the figures:—

Right hand.	Pronation, eyes open (I) 22; eyes closed (II) 5.
	Supination, eyes open (III) 29; eyes closed (IV) 9.
Left hand.	Midway, eyes open (V) 30; eyes closed (VI) 10.
	(I) 10. (II) 2. (III) 15. (IV) 13. (V) 15. (VI) 4.
Being approximately	
R.	1-4 1-3 1-3
L.	1-5 1-4 1-3

Group II. consists of those tracings in which some decided movement of the lines in some particular direction from the starting point is evident. In these the hand has not been held more or less approximately in the same position, but has moved gradually in one direction or another. This is entirely independent of its general steadiness or tremulousness (shown by the firmness of the line).

In order to obtain the amount of movement of the hand from the starting point in each direction, that is, the total excursion, the length and breadth of all the tracings were carefully measured. As before stated, the rod was so arranged that the tracing was in each case four times the size of the actual movement.



The average excursion in each position for all tracings (Groups I. and II.) is seen in above diagram. The measurements were taken between the extremes in the vertical and horizontal planes. In series I, III, and V., that is, those with eyes open, the height of the lines diminishes in the order named in both planes and with either hand. The same holds good in series II., IV., and VI., where the eyes were closed, except that with the left hand VI. is six mm. longer than IV.; but if we add the averages of both dimensions VI. is less than IV. in all cases.

The average excursion in both planes in millimetres is as follows:—

	I.	II.	III.	IV	V.	VI.
Eyes open,	9.8		9.09	9.7	7.6	10.5
Eyes shut,		17.8				

Now, if we compare the relative stability, as thus shown, with that obtained in our previous consideration of Group I., we find it also to be least in pronation. Thus the position of pronation gives the greatest excursion both when all the tracings are considered, and likewise when only those of Group I. are measured.

No attempt has been made to draw any conclusions in regard to direction in these tracings, as the second series was much more valuable for that purpose.

As to the amount of tremor in the various positions, no difference was detected between pronation and supination. In the midway position less tremor is observed.

For these reasons the position of pronation was considered the most favorable for our purpose, and another point which influenced us in this selection is that this is the position into which the hand most naturally falls when the arm is extended. It

is rare that any one, when extending the arm to place the finger in the thumb, holds it in any other position than that of pronation.

The second series of tracings, one hundred and eighty-five in number, were taken from men between the ages of twenty and thirty, who were undergoing a competitive physical examination and were hence presumably as healthy a set of individuals as could well be found. Nearly every form of ordinary occupation and trade was represented, the liberal professions, of course, excepted. The tests were made previous to the physical examination, when the men were fresh and in good condition. The position used was pronation, and each hand was tested separately and with eyes both open and closed. Each test lasted thirty seconds.

In the study of these tracings the same classification is used as in the previous series. They too are divided into the two groups of the stable and unstable (stationary and mobile).

In considering the direction of the movement, it is evident that the tracings of Group I. can afford us no information; they have therefore been placed in the table under the heading "stationary."

This group is of interest mainly in reference to the relation between the results obtained with the eyes open and with the eyes closed.

Of tracings with the right hand and with the eyes open it is seen that one hundred and forty-one (76.21 per cent.) are in this group, while of those with the same hand while the eyes are closed only twenty-six (44.05 per cent.) belong here. With the left hand and the eyes open one hundred and sixty (86.44 per cent.) belong in this group, but of those taken with the eyes closed but thirty-six (19.45 per cent.).

Hence with the right hand there is a little more and with the left hand a little less than five times the control with the sight than without it. (This of course does not mean to imply that a given tracing with sight is five times more "stable" than a similar tracing when the eyes are closed, but only that five times as many "stationary" tracings are made when the hand is aided by vision as when not thus aided.)

In all the tracings of Group II. the movement assumes a definite direction, and in the table before us the direction of this movement is shown. The table is arranged so as to give the number and percentage of tracings in each direction in each of the four conditions. The conditions of the tracings are noted by the Roman numerals at the beginning of each line: I. right hand with eyes open; II. right hand, eyes closed; III. left hand, eyes open; IV. left hand, eyes closed. The remarks at the top of the columns show the direction. Thus, of tracings with the right hand and with the eyes open, in nine the hand moved to the right and in sixteen to the left, in nineteen downwards, in no case upwards. Of those which moved to the right, six moved downwards in addition and three horizontally only. The total in which the general direction of the movement of the hand was downward was thirty-three, upwards was three.

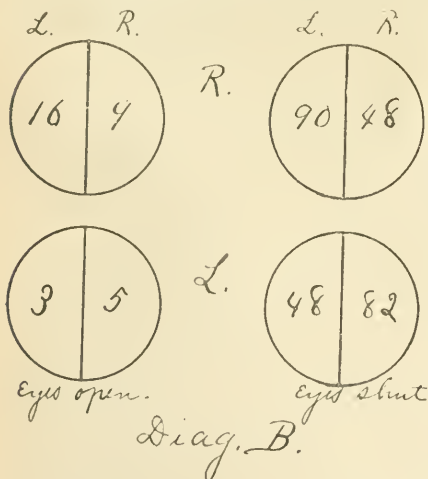
In a very few cases it may be seen that the hand rose, but so small is their number that they are probably due to accidental causes or to an over-estimated effort to prevent the hand from falling. The per-

centage in which the hand falls is large, especially when the eyes were closed. In the latter case, with the right hand, it is nearly four times as large as when the eyes were open, and with the left hand nearly five times as large.

Position.	Stationary.	R.	L.	Down.	Up.	R. & Up.	L. & Up.	R. & Down.	L. & Down.	Horizontal & R.	Horizontal & L.	Total Down.	Total Up.
I.	141	9	16	19	0	0	3	6	8	3	5	33	3
	76.21	4.30	8.64	10.27	—	—	1.62	3.24	4.3	1.62	2.70	17.8	1.62
II.	26	48	90	19	2	10	7	26	66	12	16	112	19
	14.05	25.94	48.64	10.26	1.07	54	3.77	14.05	35.67	6.43	8.64	69.54	10.27
III.	160	5	3	14	9	0	0	3	3	2	0	20	3
	86.44	2.70	1.62	7.56	1.62	—	—	1.62	1.62	1.07	—	10.81	1.62
IV.	36	82	48	16	3	7	12	55	25	20	11	96	22
	19.45	44.52	25.94	8.64	1.62	3.77	6.43	29.72	13.51	10.81	5.94	51.89	11.89

When the lateral direction is considered, a more interesting result is observed, namely, that the tendency of the hand is to move toward the median line of the body, and this is so whether the eyes be open or shut.

The following figures show the number of cases in which the hand moved in each direction:—

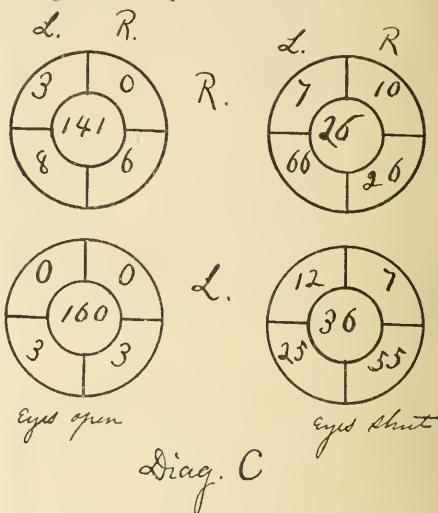


These have reference to the lateral movement only. In a large proportion the direction was obliquely downward, but in a very few it was obliquely upward. With the eyes open only three moved obliquely upward, with the eyes closed thirty-six. When the eyes are closed and the hand is governed only by muscular sense, a large percentage fall toward the middle line of the body, in the proportion of a little more than two to one.

The number of tracings in which the hand moved

obliquely upward when the eyes were closed is too small to enable us to form any definite conclusion in this regard, but in the larger number the tendency is to move in the same plane as the majority of those moving downwards, but in an opposite direction.

The figures, Diagram C, express these results diagrammatically, giving in the centre the number of stationary tracings, and in the circumference those moving in each oblique direction.



The amount of deviation from the starting point was also considered in order to determine the relative steadiness (stability) under the different conditions. For this purpose the greatest height and width of each tracing was measured.

These measurements were as follows. Averages of Group I. (stable tracings):—

I.	Right hand, eyes open.	Length 6.57 mm.	Breadth 5.76 mm.
II.	" eyes closed.	" 5.43 mm.	" 8.01 mm.
III.	Left hand, eyes open.	" 6.24 mm.	" 7.22 mm.
IV.	" eyes closed.	" 7.93 mm.	" 7.43 mm.

Group II. The tracings vary considerably in size, as will be seen by comparison of the extremes:—

Position I.	Length.	Greatest 12.76 mm.	Least 2.60 mm.
	Breadth.	" 15.00 mm.	" 2.75 mm.
II.	Length.	" 20.60 mm.	" 3.75 mm.
	Breadth.	" 16.20 mm.	" 4.00 mm.
III.	Length.	" 12.90 mm.	" 2.50 mm.
	Breadth.	" 9.50 mm.	" 1.50 mm.
IV.	Length.	" 16.20 mm.	" 3.25 mm.
	Breadth.	" 15.70 mm.	" 1.50 mm.

If we compare now the average measurements of the tracings in both groups according as they were drawn with the eyes open or closed, we find a decided loss of control when the aid of sight is removed.

Averages, Groups I. and II.

Right hand, eyes open.	Length 7.70 mm.	Breadth 6.90 mm.
" eyes closed.	" 12.85 mm.	" 14.10 mm.
Left hand, eyes open.	" 8.42 mm.	" 5.26 mm.
" eyes closed.	" 11.42 mm.	" 12.99 mm.

RESUME.

In a very large proportion of cases with the eyes open the hand is kept approximately in the original position. With the eyes closed this number is

comparatively small, being about one fifth of the preceding. The average excursion of the hand in these cases, which is a measurement of its steadiness (stability) is 2.37 mm. for the right and 2.00 mm. for the left with the eyes open, and 3.87 mm. for the right and 2.37 mm. for the left with the eyes closed, the steadiness of the left hand being in each case greater than that of the right. The tracings, however, vary very considerably, the extremes being 2 mm. and 20 mm. in the vertical, and 1.50 mm. and 16.20 mm. in the horizontal planes.

Occupation or training exerts more or less influence on the power to hold the hands in a fixed position (steadily), clerks and those accustomed to use the hands for fine work showing more power in this respect than men accustomed to rough physical work, as laborers, teamsters, etc. A number of records of professional men, not included in those under consideration here, show as a rule much more control than those of any other class examined. The power of control of muscular effort seems to keep pace with mental development. The method of various persons in attempting to control their hands during this test shows this strikingly. Persons accustomed only to rough and unskilled labor are, as a rule, unable to perform the more delicate motions, and are likewise less able to co-ordinate for unusual movements.

The number of tracings in which the hands moved upwards are too few to enable us to draw useful deductions. In the greater number the elevation was but slight, and may have been due to an over-estimated effort to prevent the hand from falling.

When, however, the hand descends a strong tendency to fall towards the median line is observed.

When the hand deviated considerably from the starting point with the eyes shut, the subject had as a rule no knowledge that it had done so, and was much surprised on opening his eyes to discover what had occurred.

As far as could be judged the functional disturbance arising from nervousness had no influence

PLATE I.

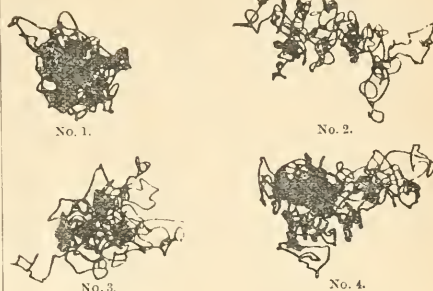


PLATE II.



Finger Tracings (natural size).

Figures I. 1, 2, 3, 4, show an ordinary series of finger tracings, all taken from the same person under one of the four conditions. 1, 1. Right hand, eyes opened. 2, Right hand, eyes closed. 3, Left hand, eyes open. 4, Left hand, eyes closed. This is a typical series of the "regular" type. There is very little variation in the extent of the movement under the four conditions. The direction, however, varies: 1 is indeterminate, 2 upwards and to the left, 3 and 4 upwards and to the right. Figures II. 1, 2, 3, 4, show another series of finger tracings taken in like manner (all from one person). They show well the contrast which often occurs when the eyes are open and when they are closed. 1 and 3 eyes open, 2 and 4 eyes closed. Control of vision apparent.

to increase the deviation from the starting point in any special direction, though it sometimes increased the size of the tracings of Group I. The disturbance from this cause, however, was much less than might at first sight be expected, the unsteadiness in great measure disappearing with the voluntary effort. In two cases, however, the disturbance from this cause was so great that all efforts to comply with the test were futile. With the attempt at muscular fixation the hand was thrown into so severe a spasmodic action that no control was possible. So far as could be determined in these cases no alcoholic influence and no organic disease existed. One of these subjects was a man who passed the physical examination for the police force, the other a woman debilitated by hard work and care.

The tremor can be estimated only by a close study of the tracings. It is totally unconnected with their "stability," or the amount or direction of their deviation. There is probably no tremor registered by this instrument which cannot easily be seen, and the study of its character is complicated by the presence of the coarse movements in the tracing.

Many of the fine tremors are not registered, because the slight support given by the thumb causes them to cease in the finger tested, although the other fingers continue their motion as before.

Hard-working laborers present no special tremor, but have less "stability" than these accustomed to more delicate work, but such tremor as existed in them was not overcome by mere contact with the instrument.

The emotional tremor is not a fine one. Its amount varies considerably with the individual, and frequently modifies or obscures any other tremor which may exist. It does not, however, seem to affect the control (stability) of the hand.

HEAD MOVEMENTS. STATIC EQUILIBRIUM.

The observations in regard to static equilibrium were made upon the same individuals as those from whom our second series of hand tracings was taken, that is, on healthy men who were undergoing a competitive physical examination, and whose ages were all, according to their declaration, between twenty and thirty, though it is probable that a few may have been somewhat above the specified age. The total number examined was one hundred and eighty-one, and they were all tested in regard to their relative steadiness in the upright position, with the eyes open and with the eyes shut.

The method of examination was as follows. The men were made to stand with their heels together in military attitude, and with the eyes fixed on some object at a distance, yet easily seen. The apparatus used consisted of a square piece of board held in position on the head by plates of spring brass, and in appearance much like the cap of an Oxford student. On the upper surface of this board a paper was placed to receive the tracing. A horizontal rod was so arranged that it could be adjusted at the desired height, and to this a pen was secured by a hinge-joint, which allowed a vertical motion only. In each case the time allowed was thirty seconds, and the pen was not allowed to touch the paper until a moment after

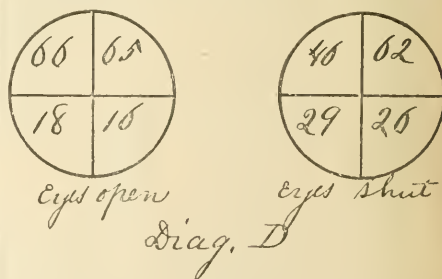
the subject had taken the required position. The observation was first taken with the eyes open, and then, after an interval, repeated with the eyes closed.

From these experiments we obtained the following results. No person stood absolutely still during the time of the trial, but some moved much less than others.

The direction of movement was as follows. With the eyes open one hundred and thirty-eight moved forward, and only thirty-five backward.—the remaining eight either moving laterally only, or the direction of movement being indeterminate. With the eyes shut one hundred and ten moved forward and fifty-eight backward, while in eleven the movement was either lateral only or indeterminate, or equally forward and backward. These figures show that the ordinary man, while standing unsupported, has a strong tendency to move the head forward slightly, and this seems to be more free to show itself when the eyes are open, and the person can perceive that he is not actually in danger of losing his balance, than with the eyes shut, when a stronger exertion may be made to keep upright.

In regard to lateral motion, we find that with the eyes open eighty-five moved to the right, and eighty-six to the left, showing no preference for either direction. With the eyes shut, however, ninety-seven moved to the right, and seventy-eight to the left, showing a slight preponderance in favor of the former. Those not counted moved either nearly straight forward or backward, or the direction of their motion could not be determined.

In most of the cases, however, as may be seen from the above, the motion was not simply an antero-posterior or a lateral one, but a combination of the two. Thus with the eyes open sixty-five moved forward and to the right, sixty-six forward and to the left, sixteen backward and to the right, eighteen backward and to the left. With the eyes shut, sixty-two moved forward and to the right, forty-six forward and to the left, twenty-six backward and to the right, twenty-nine backward and to the left (diagram). These figures show again the



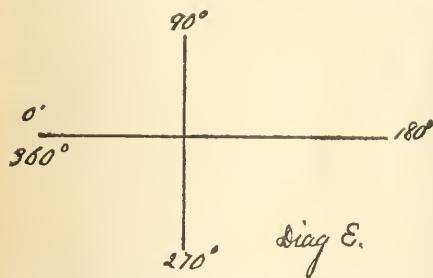
strong tendency to move forward in each case, rather than backward. They show also that this is less marked with the eyes shut than with the eyes open. With the eyes open, for those moving forward there is no preference shown for one side over the other, but with the eyes shut decidedly more move forward and to the right than forward and to the left. When moving backwards, a slight preference is shown, both with the eyes open and

shut, for the left rather than the right. With the eyes shut there certainly appears to be a decided tendency to move either forward and to the right, or in the reverse direction, backward and to the left, rather than in the other diagonal,—ninety-one (55.8 per cent.) moving in the one diagonal and only seventy-two (44.2 per cent.) in the other.

The foregoing figures show only the general directions of movement, but a number of measurements were also made to determine the position of the person at the end of the trial in relation to his position at the beginning. It was quite obvious, from an examination of the tracings, that the position at the end of the trial was not by any means always that furthest removed from the position at starting, but that, on the contrary, the subjects moved first in one direction, and then frequently backwards towards or even beyond the starting point,—these movements being, moreover, not always regular, but irregular, or more or less zigzag.

The directions of the points of ending from the starting points were measured on the tracings in degrees and minutes by means of a projector, and the following were the results obtained.

In only a certain proportion of cases could the two points be determined with sufficient accuracy to admit measurement of their relative direction. The direction was always measured from the starting point, which in all cases had been marked, to the point of ending. It was stated, as before noted, in degrees and minutes,—the line of the board pressed on the paper being taken as the base line. Thus any line parallel to this ran from 0° to 180°, and its perpendicular from 90° to 270°.

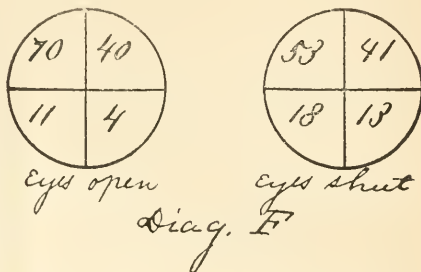


But of one hundred and twenty-five cases with the eyes open, in which these directions could be accurately determined, we found that in forty (32 per cent.) the ending point was upward and to the left of the starting point, since the position of the head at the end of the test was forward and to the right of that at the beginning. In seventy cases (56 per cent.) the position of the head at the end of the time was forward and to the left. In only eleven cases (8.8 per cent.) was it backward and to the left, and in only four cases (3.2 per cent.) backward and to the right.

From the same number of cases, with the eyes shut, we found that in forty-one (32.8 per cent.) the position of the head at the end of the time was forward and to the right of its position in the beginning. In fifty-three cases (42.4 per cent.) it was forward and to the left of its original position,

while in eighteen cases (14.4 per cent.) it was backward and to the left, and in thirteen cases (10.4 per cent.) it was backward and to the right.

Position of Head.



From these figures we see that at the end of a certain period (thirty seconds) in the normal man, standing upright and striving consciously or unconsciously to maintain a stable equilibrium, the tendency is that the head should be in front of its original position, and rather to the left than to the right. Moreover, we see here, as in our previous results, the greater backward tendency with the eyes shut than with the eyes open, 24.8 per cent. of the former to 12 per cent. of the latter, or more than twice as many of those with their eyes shut, having had their heads back of the original position at the end of the half-minute, than of those with their eyes open.

The second question considered in these observations was the amount of movement. As the actual length of the lines could not readily be measured, this was determined by measuring the space covered by the lines. Thus the distance from the lowest point directly upwards to a point situated on the same horizontal line as the highest point, was considered as the absolute length. In other words, the distance between two straight parallel horizontal lines, the one passing through the lowest, and the other through the highest point, was considered the length; and similarly the distance between two straight parallel vertical lines drawn through the extreme points on each side was considered the breadth. All measurements were estimated in centimetres.

The measurements were calculated from one hundred and fifty cases as they came in direct order.

The average length with the eyes open was 3.764 cm., the greatest length in any one case 9.2 cm., the least 0.8 cm.

The average length with the eyes closed was 3.475 cm., the greatest length 8.9 cm., the least 1.2 cm.

The average breadth with the eyes open was 1.951 cm., the greatest in any case was 5.4 cm., the least 0.6 cm. (three cases).

The average breadth with the eyes closed was 1.963 cm., the greatest 6.8 cm., the least 0.4 cm.

From these results we can draw several conclusions. In the first place it is evident, as indeed is

very apparent from the tracings, that the antero-posterior movement is, both with the eyes open and shut, much more extensive as a rule than the lateral movement. Secondly, that the antero-posterior movement is on the average decidedly greater with the eyes open than with the eyes shut, while the lateral movement is the same under both conditions, being if anything more marked when the eyes are closed.

In order to show the amount of variation, a calculation was made of the number of cases which were within the limits of each centimetre.

In the following table, in the column under zero, is found the number of cases which measured less than one centimetre; in the column headed one, those measuring between one and two centimetres, and so on.

Table showing amount of variation in antero-posterior movement with the eyes open:—

0	1	2	3	4	5	6	7	8	9
1	20	37	48	25	11	9	6	2	1

This table reads: in one case only the length measured less than one centimetre; in twenty cases between one and two centimetres; in thirty-seven between two and three centimetres, and so on.

Measurements were also made to determine the distance between the starting point and the point of ending in each case, which shows the amount of variation in the position of the head at the moment of ending from that at the beginning. The average in one hundred and twenty-five cases with the eyes open was 2.840 centimetres; the greatest distance was 7.7 centimetres; the least was 0.2 (two cases). In the same number of cases with the eyes closed the average was 2.716 centimetres, the greatest distance was 8.0 centimetres, the least was 0.3 centimetres (two cases).

CONCLUSIONS.

I. The ordinary healthy man, when standing erect unsupported, has a tendency to move forward slightly, and this tendency seems to be more marked when the eyes are open.

II. Those in whom there is a forward movement with the eyes open show no preference in regard to the direction of the lateral movement combined with it, the number moving forward and to the right, and the number moving forward and to the left being nearly equal. When the eyes are closed, however, there is a stronger tendency to move forward and to the right than forward and to the left. Moreover, more persons with the eyes closed moved backward and to the left than backward and to the right.

III. The position of the head at the end of half a minute was found in a large majority of cases to be in front of the position at starting, and a larger number were forward and to the left than forward and to the right. This applies both when the eyes were open and when they were closed.

IV. More than twice as many persons, when their eyes were closed, had their heads back of the original position as did with their eyes open.

V. The extent of the antero-posterior movement was somewhat greater with the eyes open than with

the eyes closed. The extent of the lateral movement was practically the same under the two conditions.

VI. The average extent of the antero-posterior movement was much greater than that of the lateral movement. In the majority of persons there was but little individual variation in the extent of the movements.

VII. The average distance of the head at the end of the time from its position in the beginning was about 2.8 centimetres with the eyes open, and 2.7 centimetres with the eyes closed.

We cannot conclude this paper without drawing attention to the very interesting article of Dr. Hinsdale on this subject in *The American Journal of Medical Sciences* for 1878, where the first reported observations on these head movements are detailed.

PLATE III.

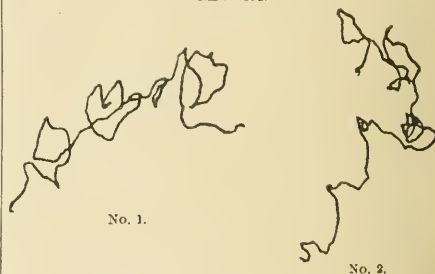


PLATE IV.

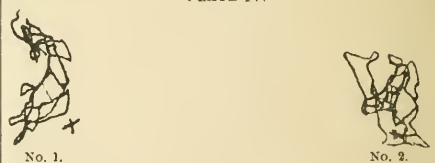


PLATE V.



Head Tracings (natural size).

In each case the tracings are taken from a single individual with the eyes open (2), and with the eyes closed (1). In all cases they are normal tracings.

III. These are typical tracings, rather mobile. The direction of movement is rather uncommon, being in both backward and to the left.

IV. Typical tracings, rather stable; direction of motion forward and to the left.

V. Typical tracings, average movement; direction forward and to the right.

We desire to express our special thanks to our friend, Dr. McCollom, to whose kindness we are indebted for the opportunity of making many of our observations, and also to Dr. Rufus A. Kingman, to whose skill we owe the excellent photograph of the tremograph.

REPORT ON DISEASES OF CHILDREN.¹

BY T. M. ROTCH, M.D.

THE CEREBRAL PALSIES OF CHILDREN.²

OSLER has reviewed the clinical material at the Philadelphia Infirmary for Nervous Diseases and at the Pennsylvania Institution for Feeble-minded Children at Elwyn. Three divisions are made: hemiplegia, one hundred and twenty cases; bilateral hemiplegia, nineteen cases; and paraplegia, eleven cases.

Hemiplegia is a common affection in children, according to some writers occurring as frequently as spinal paralysis, but at the Philadelphia Infirmary for Nervous Diseases the proportion is not quite one to four. Of the one hundred and twenty cases, five were boys and sixty-three girls. There was right hemiplegia in sixty-eight and left in fifty-two cases. Of one hundred and ten cases at which the age at the onset was noted, fifteen were congenital, and in eighty-one the disease came on within the first three years of life. In nine cases the children were delivered with forceps; three were due to trauma; sixteen followed the infectious diseases. In the majority of cases the disease begins with convulsions and the hemiplegia is noticed when the child recovers consciousness. Incomplete recovery is the rule, but the patients are liable to the serious sequences of epilepsy and mental disorders. Thirty-one cases presented post-hemiplegic movements. The result of an analysis of ninety autopsies is given. In sixteen instances there were vascular lesions, as plugging of a sylvian artery in seven, and hemorrhage in nine.

The age of onset in this group was high, as, excluding three congenital cases, there was only one under three years of age. Atrophy and sclerosis were met with in fifty cases. Two instances are recorded of sclerosis from the Elwyn Institution.

Bilateral spastic hemiplegia is characterized by a spastic condition dating from, or shortly succeeding birth. There is no wasting; the reflexes are increased, the mental condition profoundly disturbed and ataxic, and athetoid movements of the most exaggerated kind may occur. Nineteen cases are described; two of bilateral athetosis. In sixteen reported autopsies the condition has been either cortical sclerosis or porencephalus.

Spastic paraplegia in children is closely related to bilateral hemiplegia, but the arms are not affected. It dates from birth, or comes on within the first years of life. The legs are stiff, the heels raised, and there is strong adductor spasm. The patient walks on the toes or there is cross-legged progression. The intellect is not so profoundly impaired as in bilateral hemiplegia. Eleven cases are described.

The morbid anatomy of the affection is not yet

clear. Only one autopsy (by Förster, from the Dresden Children's Hospital) is reported. Cerebral lesion with descending degeneration was present. The reasons are given for believing that it is of cerebral origin, as suggested by Heine many years ago, when he named the disease "paraplegia cerebri spastica." In the discussion on the pathology of the cerebral palsies, apoplexia neonatorum is held to play an important part in the production of bilateral hemiplegia and paraplegia. In hemiplegia there is still much doubt as to the nature of the initial lesion. Strümpell's policephalitis has not yet been demonstrated anatomically, though the view is very plausible, and subsequent autopsies may show the truth of it. The relation of the cases to the infectious diseases may be due to embolic processes associated with endocarditis, to arteritis or periarteritis such as has been described in the heart in typhoid fever, or to changes in the cerebral gray matter, similar to those which have been described in the cord in measles by Barlow.

The conclusion is reached that infantile hemiplegia is the result of a variety of different processes, of which the most important are:—

- (1) Hemorrhage, occurring during violent convulsions, or during paroxysm of whooping-cough.
- (2) Post-febrile processes: (a) embolic; (b) endo- and peri-arterial changes; (c) encephalitis.
- (3) Thrombosis of the cerebral veins.

Under the section on treatment the question of operative interference is discussed, and two cases are noted in which trephining was performed for Jacksonian epilepsy following infantile hemiplegia. These are held not to be suitable cases for operation.

ACETONURIA.⁴

Baginsky has demonstrated the presence of acetone in the urine of healthy children, thus showing the existence of a physiological acetonuria for children, as has already been done for adults. He found that, pathologically, acetonuria stands in the closest relationship to the duration and intensity of the pyrexial condition; and experimentally, too, he found that in dogs acetonuria is intimately connected with protein waste.

THE INFLUENCE OF BACTERIA UPON THE DIGESTION OF CHILDREN.⁵

Baginsky, in a paper before the Berlin Medical Society, states that the bacterium of the lactic fermentation causes the production of acetic acid and acetone, as well as lactic acid. This formation goes on without oxygen, and is not hindered by the bile.

The neutral lactates are changed to butyric acid; starch is not changed to sugar, nor is casein or albumin decomposed. The gases formed when acetic acid is produced are carbonic acid, hydrogen, and methane.

He proposes to name this bacterium the "acetic bacterium." He further found that this bacterium is destroyed by acetic acid.

In examining the stools of children suffering from cholera infantum, he isolated a bacterium which produced green stools (the germ of Hayem

¹ Continued from page 573.

² Med. News, July 11, 21, and 28, Aug. 4 and 11, 1888; Amer. Jour. Med. Sciences, Nov., 1888.

⁴ Archiv f. Helikunde, vol. ix.; Amer. Jour. Med. Sciences, April, 1888.

⁵ Berlin. Klinisch. Wochenschr., No. 26, 1888; Amer. Jour. Med. Sciences, Oct., 1888.

and Lesage), and also a bacterium growing in white colonies. Both of these liquefy gelatine, and both are inhibited in their development by the acetic bacterium; this germ has the property of preventing the growth of pathogenic germs in the intestine.

Baginsky considers that only the primary manifestations of cholera infantum are caused by bacteria, and that the secondary, severer phases result from the extensive anatomical lesions which have occurred in the intestine. It is evident that the treatment of a given case will depend upon the stage of the disease. He found that calomel, boric acid, and resorcin prevent the growth of the acetic bacteria; naphthaline and iodoform are inert. If the case is seen early, when acetic fermentation is excessive, these remedies and the withdrawal of milk are indicated. If pathogenic bacteria have accumulated in the stomach or intestines, irrigation with antiseptic fluids is advised. Each case must be studied separately, and interference with the conservative processes, as shown in the inhibitory action of certain bacteria, should only be undertaken intelligently.

Clinical Memorandum.

VICARIOUS MENSTRUATION.¹

BY H. F. VICKERY, M. D.

Clearly marked cases of vicarious menstruation are so rare that I should like to put on record the following. In January, 1888, my advice was asked about Miss E. F., by her mother. The young lady was fourteen years old, and had always been well. She was not at all nervous, read no novels, and spent much time out-doors, riding, or otherwise sensibly occupied. She was not a "bleeder," and not subject to nose-bleed. In the preceding June the first menstrual flow took place, lasted one week, and was normal in every respect. Four weeks later, however, the menses did not appear, but for three or four days there were one to three profuse nose-bleeds daily. There was also a slight headache (congestive?). The statement was volunteered that the blood seemed to irritate or excoriate the nose somewhat. This monthly epistaxis continued up to the time of my knowledge of the case, in January. It did not seem to me, however, that any but expectant treatment was justifiable, the general health being so perfect. It remains to say that after these nose-bleeds had recurred with perfect regularity for fourteen months the catamenia began, scanty at first, and the epistaxis diminished. And at seventeen months from the first menstruation, the function had become normal, and so remains.

I have imperfect notes of a second case seen at the Massachusetts General Hospital. The girl, C. McD., æt. 13, was brought by her mother, who told me that about Christmas, 1887, the backache of which the girl had complained became worse, and for two or three days she spit up blood. The same symptoms recurred in January. In February she had a severe nose-bleed for one hour. In March

she had nose-bleed two or three times. I did not feel certain about the interval between these occurrences, nor indeed of the accuracy of the statements made me; but I did not think there was any intention to deceive. This report was in March, 1888. A few months later the catamenia had appeared for the first time and become normally established, and the epistaxis and spitting of blood had ceased.

New Instrument.

A NEW FORM OF CLINICAL TUNING FORK.¹

BY CLARENCE J. ELAKE, M. D.

THE tuning fork is especially useful as a hearing-test instrument because it affords a tone of definite musical value, having a definite decrease in intensity from the moment it is set in vibration—unless constantly actuated as in the forks kept in vibration by an electric current,—and because it can be used in testing the hearing power not only through the medium of the air but also through the medium of the bones of the head; the stem of the vibrating tuning fork in the latter test being touched to the teeth or pressed upon the vertex, the forehead, or the mastoid process, or elsewhere upon the head.

The value of the tuning fork as an instrument of precision, however, is lessened by the fact that not only the *intensity* of its tone but also its *tone* value may be varied by the means and the force used in setting it in vibration; if, for instance, an ordinary tuning fork is struck upon a hard substance, there is immediately heard, in addition to the fundamental musical tone which is the characteristic of that particular fork, a number of overtones stronger and sharper in proportion to the force of the blow and the hardness of the substance against which the tuning fork is struck; if the fork is struck against some soft substance, the palm of the hand for instance, the sharp tones are not made prominent, and only the fundamental tone is heard,—varying conditions which in a series of comparative tests afford large margin for error.

To overcome these difficulties two plans have been adopted,—one that of actuating the fork by a blow from a hammer falling through a definite space, or moved by a spring of definite strength, the other (Poltzer) that of affixing clamps by means of screws to the tips of the tines of the tuning fork, in order by the additional weight to decrease the production of the short sound-waves of the overtones.² Both the falling and the spring hammer were found to be unreliable for ordinary clinical work, and the movable clamps, although they possessed the advantage of permitting a change of the tone of the fork within an octave above its fundamental by moving the clamps up and down (Koenig), were found in rapid clinical work to be inconvenient. The French fork, which has its tines inclining toward each other at the tips and which is set in vibration by drawing a stick of wood or bar of metal upward and outward between the tines, though convenient, affords a tone

¹ Read before the Boston Society for Medical Improvement, November 26, 1888.

¹ Read before the Boston Society for Medical Improvement, Nov. 25, 1888.

² Bezold clamps the overtones of the fork by fastening a ring firmly round the lower portions of the tines.

of varying pitch and intensity according as wood or metal is used and in proportion to the rapidity with which it is withdrawn.



By making a tuning fork weighted at the ends of the tines, as represented in the accompanying cut, the fork is found to be, of course, less productive of overtones, and by drawing the fork through the fingers or through a small ring, from below upward, the pressure upon the inclined surfaces of the projections forces the tips of the tines together, and the release sets them in vibration with a definite initial excursion.

The best standard fork for general clinical purposes is the physical C. 512 vibrations; but in order to make reliable tests it is important to have a series of forks covering a range of at least four octaves, one below and two above the tone mentioned, and also to include, as suggested by Dr. J. Orne Green, an A fork intermediate between the two upper C's. The establishment of a standard set of forks for uniform clinical use would be a decided advantage in the comparison of observations of different experimenters in a field which is at present deservedly attracting much attention, and as a suggestion in this direction a pattern series of forks on the above plan is now being made.³

In especial tests it is also an advantage to add to this series a second C. 512, which shall be so adjusted as to give beats when sounded in conjunction with the standard fork, a means of test which is sometimes of value in medico-legal as well as in ordinary clinical cases.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M. D., SECRETARY.

NOVEMBER 26, DR. O. F. WADSWORTH, President, in the chair.

DR. H. L. MORSE showed

THREE CASTS OF THE MEMBRANA TYMPANI

consisting of the whole dermoid coat of the membrana, which he had removed entire from the ears of two phthisical patients. He had records of a number of other phthisical patients from whom he had removed similar casts of the membrana. All of these cases were patients who had well-marked physical signs of phthisis, but of rather a slow, mild form of the disease. In one of the cases the patient came under observation for the trouble in the ear some three or four months before he had any symptoms of disease in the lungs. When first seen he had a chronic myringitis, with a dull red and thickened membrana, and no symptoms of any other trouble in the middle ear. After several weeks the dermoid coat of the membrana peeled off in the form of a cast similar to those shown to-night.

They are of interest chiefly as showing the re-

sult of one of the forms of inflammation in the ears, which we may find in phthisical patients, and it is also of interest that in one of the cases the trouble in the ear antedated by three or four months the first symptoms of disease in the lungs.

DR. BLAKE: The occurrence of casts is an interesting phenomenon in these cases, and even with an already existing perforation of the membrana tympani the casts will form and slowly or rapidly separate according to the rate of progress of the tuberculous disease; indeed the implication of the ear seems to bear a definite relation in its rate of progress to that of the progress of the trouble in the lungs; and I should like Dr. Green's opinion as to the bearing which a slowly progressive tuberculous or other disease of the lung may have upon the repeated separation of layers of epidermis in this way, whereas in cases of more rapid progress of the disease in the lung there is congestion of the upper portion of the tympanic cavity and rapid breaking down of the tissues. Is it not due to the reflex relationship between the lung and the ear?

DR. GREEN: I see no better name than that of Wendt, "desquamative inflammation." It seems to me that it comes under that head. Why it is I do not think we know. As far as I know, pathology has not settled how it comes, or why. I have regarded this as the result of one form of inflammation of the tissue, resulting in desquamation instead of the higher form of suppuration, or something of that kind, and the inflammation in the ear is an inflammation due to the mucous membrane. I am not at all clear on the reflex origin of it. I have been inclined to attribute it to the tendency that there always is in mucous membranes to become inflamed in phthisis. Almost always in phthisis you get catarrhal conditions of the mucous membrane, and in a certain number of cases an inflammation in the mucous membrane of the ear, in the middle ear, and consequently a myringitis which I have not regarded generally as specific, but as a simple inflammation. I should have classed it under what the Germans call desquamative inflammation, just as you may have desquamation coming on in the tympanum or in the meatus. It is interesting coming in connection with general disease, but at the same time I have always attributed it to inflammation rather than considered it anything especially specific in the phthisical. This designation is not an arbitrary thing, but has been proven by microscopic investigation. It was proven by Wendt, and accepted, I think, by a large number of Germans, as one form of inflammation. Since his time I am not aware that anybody has attempted any microscopic investigation of the subject.

DR. W. P. BOLLES showed a

DERMOID CYST

which he had removed, and which had existed for twelve years. For many years it was supposed to be a fibroid of the uterus.

DR. BLODGETT: Dr. Bolles' very interesting history of this case has recalled a somewhat similar one to my mind. It was a case occurring some years ago in the practice of Dr. Wing. The patient died, and I made the autopsy. The history was of a longer duration than that of Dr. Bolles, and, like his own case, appeared to be a fibroid enveloping, or at least obscuring, the uterus and filling almost

³At the Institute of Technology, through the courtesy of Prof. Charles R. Cross.

the whole abdominal cavity. The weight of this was more than fifty pounds. It was accompanied during its later development by certain symptoms which seemed to indicate the presence of fluid. The patient observed this earlier than it could be detected by the physician, and described the sensation as that of "swashing." Her impression was that there was fluid, and that it was variable in position. At the autopsy a very large false aneurism was discovered in the middle of the mass of growth, it having originally been fibroid which had later undergone a malignant degeneration, in certain parts of sarcomatous character. In the middle of one of the larger masses, and entirely surrounded by true fibroid tissue, was an aneurismal sac about the size of the head of a child at full term, which accounted for the sensation experienced by the patient, and the indistinct fluctuation which had been described to the physician, but which was not explainable before death. I have never since had an opportunity to observe anything similar until this evening. The symptoms in Dr. Bolles' case certainly presented a marked resemblance to those observed in the patient of Dr. Wing.

DR. CLARENCE J. BLAKE read a paper on

A NEW FORM OF CLINICAL TUNING FORK.

DR. WORDSWORTH: Dr. Blake has preferred putting a ridge on the instrument to prevent the person running his fingers further along and producing louder tones. Would it not come to the same thing if one individual is stronger than another?

DR. GREEN: I do not see how that could be the case. The fork is set in vibration by pressing the arms together. Anybody in using the fork ought to press the arms firmly together and let go. It is merely the rapidity with which they are drawn through the hand that increases the intensity of the tone. Passing the finger and thumb down to this ridge would be practically the same as pressing the arms together and letting go. The weakest patient must be strong enough to do that, and the strongest patient could not do more than that. It is possible that with rapidity of motion one might get a little difference in the intensity of the vibration. It seems to me to be the nearest solution to getting an equal intensity of tone. This is what we have been struggling for for twenty years, and have never got any approach to it before.

DR. BLAKE: Another point: where the tuning fork is drawn through the hand throughout its whole length, there is greater spring from the ends of the fork where the pressure is made from the centre towards the tip than where it is from the tip alone.

DR. GREEN: I would suggest making the handle of the fork a little bit longer, three-fourth inch or so. Then one would be less likely in placing the fork over the mastoid to touch it to the patient's auricle and so stop the vibration of the fork.

DR. H. L. MORSE read a paper on

TREATMENT IN CASES WHERE SYMPTOMS POINT TO INFLAMMATION IN THE MASTOID ANTRUM AND MASTOID CELLS, BUT WHICH DO NOT CALL FOR AN ARTIFICIAL OPENING INTO THE MASTOID PROCESS.

DR. GREEN: I agree with the writer in almost all his conclusions. Certainly the free exit of the

pus and thorough cleansing are the first things to be used in all of these forms of inflammation. I would add to what he says about treatment that I would make the cleansing as antiseptic as I could. Instead of warm water I prefer solutions of some of the antiseptics; not that you can make the ear perfectly aseptic, but I think we have reason to think it diminishes the amount of suppuration.

In the first three of the four classes of cases the writer makes, I fully agree with him in everything. In the last class of cases I am not quite certain that I am as conservative as he is. My experience more and more shows me that where you have got perceptible oedema behind the ear you have got pus; and I find that the oftener I make Wilde's incision now the oftener I find a hole through the bone. I think this is because I look for it more thoroughly than I used to. It is rather an exception with me to make Wilde's incision without finding at least a raw spot, and in the majority of cases a little opening: so that although Wilde's incision relieves a great many of the cases, yet in many we shall, I think, find a small opening, you do not increase the risks of the operation in the least and you improve the chances of rapid improvement in the patient by clearing that opening out, the opening being a slight carious opening and it is better to clear away all the carious walls down to the solid bone; and in doing that you evacuate the pus of the mastoid and hasten the cure, I think.

The exact time to open the mastoid is not an easy thing to settle. I believe in a conservative course. It is a serious operation, and not to be undertaken without serious consideration. I think on the whole, of late years, the experience of the largest operators is getting to be more in favor of earlier operations than it was. Schwartz, who has done more of the operations than anybody else, is, I am told, more and more in favor of earlier openings. The same, I think, is the case with Politzer.

What you are to call acute cases is also not easy to settle. I cannot put myself on record better than I did in an article written two or three years ago for "Buck's Handbook of Medical Science." If, in spite of antiphlogistics, and thorough cleansing with antiseptics, the pain continues, and swelling over the mastoid increases to distinct periostitis, and continues beyond four days, incision should be made down to the bone through the periosteum. After the periosteum has been incised it should be slightly raised and the cortex examined. I should like to add that point to what the author has written — after the Wilde's incision the necessity of examination of the bone for these little points.

If any serious symptoms appear — chills, slight fever, above all any symptoms pointing to the brain, — the question of operation becomes a serious one and should be considered immediately.

Again, we have the cases which I believe the author of the paper speaks of, where none of the methods relieve. I perhaps may be a little bit more radical in adopting an operation earlier than he would in the cases in which the symptoms continued, although he does not state exactly what he considers acute cases. With a great deal of pain, etc., unrelieved by antiphlogistics, by thorough cleansing with antiseptics, from five to seven days I should very seriously consider an operation. If

before that any serious symptoms set in pointing to the brain, or with chills, or high fever, I should consider an operation seriously earlier than five to seven days.

DR. BLAKE: Dr. Morse has certainly covered the ground thoroughly in regard to cases in which the question of opening the mastoid does not enter; and in reference to that question I fully agree with Dr. Green in the importance of carefully examining the bone in the event of making a Wilde's incision, which may be the preliminary to the necessary opening of the mastoid, an operation safe in proper hands, in which, with due precautions, there is little danger, and from which there have been few fatal results.

DR. GREEN: One other point I wanted to suggest to the author, as it seems to me a slight addition though an important one, and that is, that cholesteatomatous masses are often very serious indeed, and two or three words added to his paper calling attention to the fact would, I think, add force to the paper. It seemed to me he passed over it a little lightly. I have seen fatal meningitis produced by underlying caries of the bone where cholesteatomatous masses were found. There was a cholesteatomatous mass with underlying caries. I have had several cases of that kind. One appeared regularly at the City Hospital for ten years. On further examination I found I had a very large mass to deal with, too large to remove it. The only thing to do was to chisel away the whole bone. In the existing condition of things it did not seem advisable to urge it upon her; and she refused to consider it at all, and went on for years, appearing once in nine months or a year with a little acute attack of inflammation, which was relieved by clearing away what we could; but I was confident we never got out a quarter part of it. Finally her husband appeared one day and told me she had an attack of acute meningitis, from which she died the next day.

DR. J. WHITNEY advocated the use of hot water, saying that he had never seen good results from cold.

DR. MORSE: I would like to say to Dr. Green, in regard to feeling for a soft spot of bone or an opening into bone in Wilde's incision, that I had written those very words in this paper; but on thinking it over it seemed to me that the cases which I wished to speak of were those where the pus had worked its way between the skin lining the external auditory canal and its bony wall, had burst through the posterior wall of the cartilaginous portion of the external canal and lay outside of the surface of the bone. Certainly, if the person finds soft bone, or particularly if he finds an opening into the bone, this very fact shows that he has to do with a class of cases where an opening into the mastoid is indicated and should be made either primarily or by doing Wilde's incision, and following it up by breaking open the small sinus in the bone and enlarging it.

In regard to the masses of epithelium and dried pus, there is no doubt whatever that some cases die finally of meningitis where these masses have formed in the antrum and cells, and have been removed over and over again by aurists and have collected again; necrosis has gone on under these masses and

it finally makes its way through to the brain. I have in mind one case in particular where a patient was under Dr. Blake's care and my own for a number of years. In the early part of one summer the patient went away for a vacation. She was treated for malaria and typhoid fever because she had persistent headache. Finally, some four months after she had been seen by an aurist she became very ill; she became almost entirely deaf, and it was on account of her deafness that she was asked who her aurist was and that we were sent for. She was dying of meningitis when we saw her. In that case I had performed Wilde's incision some two or three years previously, and finding an opening into the bone had enlarged it and thoroughly cleared the mastoid antrum and cells. After the Wilde's incision had been performed, and the wound healed and the discharge from the ear had ceased, the masses began to form once more and had been removed from the middle ear through the external auditory canal. In that case, or in similar cases, if an aurist had been called early enough, he would have opened the cells once more and got free syringing through into the middle ear. Such cases as this, it seems to me, are again a little outside of the class of cases I wish to speak of. If there is caries or necrosis in the antrum and cells, removing the mass does not cause the discharge to cease and the ear to seem well; it is followed by purulent discharge, which does not dry up at once, showing that clearing the cavity out is not sufficient to cure the case. We have to probe, and if we find bare bone and it does not disappear we have to make an opening into the mastoid cells.

I am obliged for the criticism about the antiseptics. It was an oversight on my part. I did not intend to imply that we never used anything but warm water.

In regard to cold applications behind the ear: the object of using the cold was to allay the inflammation in the mastoid cells and mastoid antrum before there was any indication for operating, or leeching even. It often allays pain, and sometimes the inflammatory process seems to go down quicker and more effectually than when we use heat. At the same time a large number of cases, immediately after the application of cold, feel chilly and are worse for its use. In these cases we have to use heat instead of cold; but where cold does not cause these unpleasant symptoms and does check pain, I think it is often more effectual than heat. That has been my experience and was the reason why I laid some stress upon cold as well as heat.

DR. H. F. VICKERY reported a case of

VICARIOUS MENSTRUATION.

—A reception was given to the medical students of Jefferson Medical College by Prof. William S. Forbes, at his residence, Thanksgiving evening. After having tested the many good things, they were received with hearty Thanksgiving greetings by Prof. Forbes. The remainder of the evening was devoted to social conversation and the singing of old college songs. Many persons prominent in the medical and other professions were present. A similar reception was given by Prof. Forbes last year.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE,
PATHOLOGY, AND HYGIENE.

ALBERT N. BLODGETT, M. D., SECRETARY.

OCTOBER 10, 1888. Previous to the reading of papers, Mr. A. E. LEACH, of the firm of Leach and Greene, exhibited some new or improved instruments for surgical, therapeutical, and hygienic purposes.

The first paper was upon

SYPHILIS OR TUBERCULOSIS? ¹

by Dr. F. W. STUART.

DR. F. C. SHATTUCK: This is a very interesting case; and certainly the therapeutic results bear out the diagnosis of syphilis reached by the reader. Of course there is one means of differentiating between the diseases, the examination for bacilli, a means which, however, presents greater difficulties when applied to discharges from joints, serous sacs, etc., than when applied to sputum.

I have, as it happens, recently had under my care two cases in which this very question of syphilis or tuberculosis was naturally raised. One was a young man who came into the hospital without any very definite history except that he had been playing ball, which he was not accustomed to do, ten days before entrance, followed by general muscular soreness which any of us might have after some unwonted exercise. Then came abdominal pain; and when he entered the hospital he had a certain amount of fever; very marked abdominal tension, although not very great distention, because the man had a strong abdominal wall, which did not easily give way. The division of the recti muscles stood out in the clearest way, and the distention was due not only to gas in the intestine, but to free fluid in the peritoneal cavity. The lungs were clear. It seemed as if there might be some intestinal obstruction, partial or complete. Rectal examination was made, and a nodular enlargement of the prostate was found. There was also a hard lump in one epididymis. A consultation was held with Dr. Cabot with reference to surgical interference, the probable diagnosis seeming to be tubercular peritonitis. It was, however, ascertained that the man had before admission been treated by the iodide of potash, and it was determined to resume this drug. From this moment rapid improvement set in.

The ascites disappeared entirely; the prostatic enlargement and the nodules of the prostate diminished in size; the lump in the epididymis was not modified; but the man soon became convalescent, and I discharged him from the hospital two or three days ago, well as far as all general symptoms go.

The second case is one which was sent in to me perhaps a fortnight ago, — a man who presented a clear history of syphilis contracted during the war, and followed by loss of the uvula. Some five or six years ago the man began to have a cough with expectoration; and he has had three or four attacks during these last years of cough, with pretty pro-

fuse expectoration lasting for some time, then ceasing in great measure, with perfect recovery for all practical purposes between these attacks. I think the last attack — I speak from memory — was in 1884. Last June the man was walking in the street at 8.30 A. M., and the next thing he knew it was 10 o'clock A. M., and he was in a police station. The man was not intoxicated; he had loss of consciousness; as to convulsion we are not informed.

About five weeks ago he was taken with sudden stabbing pains in the right side, followed by cough. When he came into the hospital his general condition was rather poor, though he was no thinner than he ever has been. He is not a large, robust man. About a day after entrance he began to expectorate some moderately fetid sputum, and then we got, in the course of a day or so, signs of a large cavity in the upper lobe of the right lung, with a certain amount of infiltration of the surrounding tissue. We were greatly helped in our knowledge of this case by the fact that Dr. James Minot had had him under observation during the previous attacks, and had sent him into the hospital. After each one of these attacks the improvement had been immediate on the administration of iodide of potash. That is what we are giving him now. The man is doing well. There is no fever, no loss of flesh, no hæmorrhage; but a sharply localized process in the upper lobe of the right lung. Three careful examinations of the sputum have been made for bacilli, and none have as yet been found.

It seems to me not improbable that if we, as a routine matter, treated every case of pulmonary tuberculosis that came along with mercury and the iodides, we might cure some that we now don't cure. At the same time we should hasten the end of many others.

With regard to the question of the administration of the iodides, it would seem to me that the iodide, when given in sufficient doses, will cause tertiary manifestations to disappear, but does not prevent them from returning. The prevention of recurrence is furthered by mercury. Therefore it is extremely important to use in all these old tertiary cases, in addition to a general tonic, mixed treatment — one for immediate, the other for a more permanent effect.

DR. VINCENT Y. BOWDITCH: It seems to me, in the first place, there can be very little doubt as to what the nature of this thing is, namely, syphilis. As Dr. Shattuck suggests, the examination of the secretion may help.

As to the iodide of potash, I should agree in pushing it as far as possible. I think oftentimes we neglect to help the case by not pushing it far enough. In many cases it seems as if the iodide of potash cannot be borne, the patient vomiting, etc. I recall one special case at the Carney Hospital — case of syphilis evidently; and beginning with five-grain doses he vomited immediately, and I thought I should not be able to give it to him at all. I found, by giving a saturated solution — one grain to a minim of water — and giving but one minim in aerated water — siphon soda-water — after each meal, he was able to retain it perfectly well. I gradually increased that a minim a day until he was able to take ten or fifteen grains and finally

¹ See page 575 of the Journal.

sixty or eighty; and the man is now practically well. I merely mention that as a practical point.

DR. F. W. STUART: I didn't mean that I gave thirty grains right off. I started him with five grains three times a day; then ten grains, etc., increasing by five grains. But it seems to me in his case it is a question of tolerance. He has taken thirty grains three times a day for about a month before he began to vomit, and I have given it simply in water. The ordinary dispensary formula gives it in water, and he very much prefers it now with gentian. He says that "covers it up," prevents the nausea. This was a case of intolerance late in the disease.

DR. A. N. BLODGETT: I have found the syrup of raspberry to be a most agreeable vehicle for iodide of potash. I have been able to procure a solution to the amount of fifty per cent. by weight of the iodide of potash in raspberry. There has been no nausea; no disturbance of the stomach—occasionally there occurred some digestive difficulty which was laid to the medicine, but I think improperly so. The only symptoms I have noticed referable to the iodide of potash were a metallic taste in the mouth after considerable quantities had been taken and continued some time. I have tried various vehicles with more or less flattering success, but I have as yet discovered nothing which I think has been so easily borne, and has covered up the disagreeable features of iodide of potash, as far as taste and immediate effects are concerned, as does the syrup of raspberry. It can be diluted with water; and the action when first taken into the stomach is in many cases more agreeable than is produced by any other medium that I have tried. The medicine is one which is sometimes so hard to get into the system that I fancy any variation of the ordinary vehicles for its use may be desirable.

DR. P. C. KNAPP: It is needless to repeat the remark—the fact that the limit of intolerance of iodide of potash is with the smaller doses—five to ten grains. Personally I do not consider I am treating syphilis unless I give doses of thirty grains and over; and it is my rule in treating cases of syphilis of the nervous system, which, of course, is about the only form that I see, to begin with thirty-grain doses, and increase from that. Giving iodide of potash in that way, the cases of intolerance I have found to be exceedingly rare. Where I have had occasion to use iodide of potash for other things, other affections, giving it in smaller doses (five to ten grains), I have got a much larger percentage of intolerance.

A paper on

MASSAGE IN WRITER'S CRAMP AND ALLIED AFFECTIONS.²

was read by DR. DOUGLAS GRAHAM.

DR. FOLSOM: I would like to ask the reader if he knows what Mr. Wolff's method consists in—Wolff of London? He claims, I think, that he uses exercise and calisthenics alone.

DR. GRAHAM: Exercises so as to get all these muscles thoroughly tired out, and general calisthenics as well, so as to exercise all the muscles of the body.

DR. FOLSOM: He claims some very remarkable

results in pretty obstinate cases. I don't suppose he makes his treatment exactly known.

DR. GRAHAM: I think he relies principally on strengthening the weak set of muscles.

RESOLUTIONS.

DR. F. MINOT: It is to be regretted by all of us that Dr. Bowditch is unable to be present through illness. It is hardly necessary to allude to his constant philanthropic efforts to relieve the sickness of our country in times of distress from epidemics; of the great wisdom of his plans for relief, and the importance of the measures which he now proposes. Dr. Bowditch's opinions on this subject are well known to most of us; and to those who have not read them I will say that the several copies here of a letter which he wrote in the papers last month will satisfy their desire to know what Dr. Bowditch thinks on the subject. I have been requested to read the resolutions which Dr. Bowditch suggests to this society.

THE PRESIDENT: These resolutions, as I understand it, provide only for a committee of five to report at the next meeting as to the voice of this society. I presume such a committee would present further resolutions to be acted upon by the society at the next meeting; and if there is no amendment offered to these resolutions, will the society make some motion as to how the committee shall be appointed.

DR. BLODGETT: I move that the committee be appointed by the chair. (Carried.)

THE PRESIDENT: The chair appoints Dr. Henry I. Bowditch, Dr. Francis Minot, Dr. G. H. Lyman, Dr. C. F. Folsom, and Dr. G. B. Shattuck to report to this society at its next meeting.

Adjourned at 9.45 o'clock.

NEW YORK ACADEMY OF MEDICINE. SECTION ON PUBLIC HEALTH, HYGIENE, AND STATE MEDICINE.

TYPHOID FEVER.

At a meeting of the Section on Public Health, Hygiene, and State Medicine of the New York Academy of Medicine, held December 7th, Dr. Cyrus Edson, chief of the bureau of contagious diseases of the city board of health, read a paper on "The Poison of Typhoid Fever." In the course of it he said that nothing was so discreditable in civilization as typhoid, since the disease was found everywhere and yet was easily preventable. Polluted water, milk, meat, and ice are the principal sources of infection. Wells are especially open to suspicion, and his experience and observation had led him to believe that there was scarcely a safe one in the country. Having referred to a number of epidemics which had been distinctly traced to a polluted water-supply, he said that he had just learned from Dr. Foriye Barker of an instance occurring at a popular resort in New York State, where twenty-two persons had been taken sick, in consequence, in all probability, of using ice cut on a lake near by.

In typhoid we acknowledged that atmospheric contagion was impossible by admitting typhoid

² On p. 569 of the Journal.

patients to our general hospitals; but he believed that in this disease, as in cholera, digital contagion was possible, and that without proper care the germs might thus be left by the hands on door knobs, banisters, etc.

During the past autumn Dr. Edson said he had investigated one hundred and forty-six cases of typhoid in the central part of New York city. Of the patients, seventy-two were out of the city during the preceding thirty days, and of these twenty-nine had been in places known to be infected. About seventy-five of the patients had not been out of the city, as far as could be learned. Six cases occurred in a tenement house on 22nd street, where the water-supply was so arranged that a little of the contents of the vaults was sometimes pumped into the water-pipes. In a house on West 27th street the first case was imported from the country, but five others resulted from it; and in this instance also there were defects in the water-supply. Four boys had been attacked who were in the habit of bathing in the river near the mouths of sewers. Over fifty other cases, he said, must be traced to recognized causes—milk, ice, or digital infection. During September, October, and November, 1888, five hundred and fifty-seven cases and one hundred and thirty-two deaths were reported in the city, and in the same months of 1887 there were four hundred and thirty-five cases and one hundred and five deaths.

Safety would come from care in using ice, in employing only boiled milk, and in washing the hands carefully before eating, since it was an established fact that the typhoid poison could enter the system only through the alimentary canal. The Health Department, he said, was doing all that it could to prevent the disease. Every typhoid case reported was visited, careful instructions were given, and disinfecting measures were carried out.

In the discussion which followed the paper, Dr. JOHN C. PETERS said that at present there was little danger from the Croton supply, but that increased danger might be looked for as population in the Croton district increased. The aqueduct commissioners had assured him, however, that they would appeal to the State Board of Health to take suitable measures to prevent the future pollution of the water.

Recent Literature.

The Principles of Cancer and Tumor Formation, By W. ROGER WILLIAMS, F. R. C. S. London: John Bale & Sons. 1888.

As stated in the preface, this is an introduction to a complete treatise on the treatment and pathology of cancer and tumor formation. The second part will be devoted to general pathology and treatment, and the four succeeding ones a series of monographs on that of the chief local varieties of the disease.

Briefly presented, the point which the author hopes to establish is that new growths depend upon the inherent property of indefinite and irregular multiplication of all cells, and which is only kept

in check by "the restraining influence of the organism." When this is weakened from any cause, impaired nutrition, for example, they are reproduced without regard to the needs of the locality where they arise, and the result is a tumor formation. The degree of malignancy depends upon the degree to which the restraint is removed, the most malignant being the most free. To support this the laws of growth and reproduction are appealed to, and the evolution of vegetable and animal neoplasms are presented, and all are so forcibly used as to entitle the author's views to be regarded as a theory, rather than a mere hypothesis. It may be characterized as a germinal theory, in distinction from the embryonic theory of Cohnheim.¹

In all speculations of this sort, something has to be assumed which is incapable of material demonstration; in this case it is the restraining influence of the organism as a whole on the development of the cells. But certainly the theory is a seductive one, from its wide generalization, and from its so well explaining the frequency of new growths in old age, a period when nutritive and inhibitory functions begin to fail. If correct, it shows the needlessness of searching for a micro-organism in cases of cancer, and also does away with the possibility of an origin from contagion.

The arguments are in general well and concisely stated, but there is a little repetition incident upon the fact that some of the chapters were originally published as magazine articles. It is a very readable book and will well repay perusal, and furnish food for reflection for those who care for aught else than the purely practical side of our profession.

A Text-Book of Pharmacology, Therapeutics, and Materia Medica. By T. LAUDER BRUNTON, M.D., D. S. C., F. R. S., etc. Adapted to the United States Pharmacopœia by Francis H. Williams, M. D., Boston, Mass. Third edition, Philadelphia: Lea Brothers & Co. 1888.

The first edition of this work was noticed in the Journal, December 17th, 1885.

In the present edition, considerable new matter has been added to bring the work up to date. The section on the action of drugs upon the eye has been carefully revised. The section on antipyretics has been rendered somewhat fuller, and some diagrams illustrating the pathology of fever, and the mode of action of antipyretics, have been introduced. The author still adheres to the opinion expressed in his first edition that "the most rapid and powerful antipyretic in specific fevers is the application of cold by bathing or sponging; and probably next in efficiency come large doses of quinine and salicylate of sodium" (p. 420). A short chapter on the treatment of cough and on the pathology and treatment of asthma has been introduced. The arrangement of the vegetable materia medica has been almost entirely remodelled on Hooker's plan; the general index has been carefully revised, and the Index of Diseases and Remedies (which is of considerable value for reference) has been revised to a certain extent. The additional matter in this edition amounts to about 120 pages, but by using

¹ This presupposes the existence of included embryonic cells, which lie dormant until something starts them up into the irregular growth of tumors.

thinner paper the bulk of the volume has been but little increased. A little more than a third of this work (twenty chapters) is devoted to Pharmacology. This is, in our judgment, by far the most valuable portion of the work. Nothing so original and so complete on the action of drugs upon the body generally, and on its various parts, has appeared during the lifetime of the present generation. This is strong language, but it is the truth. Twenty-five years ago it might well have been said that there was no *science* of therapeutics, that medicines were given for the most part empirically. In the student days of many, now veterans in the profession, it was taught that nothing definite about the actions of medicines was known. Jalap purged because it had a purging property; opium relieved pain because it had a pain-relieving property. That some considerable advance from this state of uncertainty to more definite knowledge has been made in the past forty years is owing to the fact that, coincidentally with the great progress which has been made in histology and organic chemistry, experimental physiologists have been contending with the vexed problems of disease and of drug action, and the results of these researches are embodied in this book of Lauder Brunton. The great merit of the work, however, is not so much that the author has amassed such a body of facts from the archives of contemporaneous medical literature, adding thereto valuable contributions of his own (see pages 29, 42, 47, 55, 124, 129, 150, 176, 186, 228, 273, 430, etc.), as that he has been able so well to co-ordinate them into an intelligible and rational system of pharmacology; and henceforth no treatise on therapeutics will be considered as complete that does not in some measure adopt his method.

The physiological part of this work will be of especial interest to busy practitioners who have not had the time to keep up with the progress which has been made the past three or four decades in this department of study.

In some respects the present edition is hardly up to the times. Thus, under the head of hypnotics, no allusion is made to paraldehyde and urethane, the properties and uses of which were known before this edition went to press. No reference is made to Preyer's theory — based on accurate experimental observations — as to the proximate cause of sleep. The antithermic properties of antifebrin and antipyrin are mentioned, but nothing is said of the analgesic properties of these medicaments, properties which have been now known for more than two years. The benefits of large doses of strychnine in delirium tremens are not alluded to. We find no mention made of salol, which has now for three years or more been used on the Continent as a substitute for the soda salicylate. Nothing is said of salicylate of bismuth, so much vaunted by some Continental authorities for its superiority over tri-nitrate of bismuth in gastro-intestinal affections. There is no allusion to the use of hydrofluoric-acid inhalations in phthisis, or to the rectal medication of the same disease by gaseous injections of hydrogen sulphide and carbon dioxide. There is much that might seem a little imaginative, as, for instance, the diagram on page 576 illustrative of the action of acids and alkalies in headache. One disposed to be over critical might, moreover, challenge the scientific validity of

statements made in almost every chapter. But it is not in the spirit of fault-finding that the busy physician will approach this book, but to learn something that will better fit him for his work, and on every page he will find something that will reward him for the time spent in its perusal.

We therefore conclude by commending this book as one which every physician should own and study. It is a work which, if once owned, will be likely to be read and consulted till the covers fall off from much use, and therefore we would here take the occasion to advise our readers before purchasing to see that their copy is bound in leather, and not in cloth.

E. P. H.

A System of Obstetrics by American Authors.
Edited by BARTON COOKE HIRST, M. D. Vol. 1.
Svo. pp. 808. Philadelphia: Lea Brothers & Co. 1888.

This work, which is to appear in two volumes, is the companion of the *System of Gynecology* by American Authors already issued by the same publishers. The favor with which composite treatises on medicine and surgery have been received by the profession warrants the belief that the same system of conjoint authorship may be successfully applied to obstetric medicine. Certainly, specialization in medical writing is in keeping with modern tendencies in medical practice; and, with a carefully elaborated system and judicious editing, should be productive of the best results.

The present volume embraces eight chapters. The first, on the History of Obstetrics, is by Engelmann, whose studies amply fitted him for this work. While not of practical importance, it is of great value and interest. The chapter on Ovulation, Menstruation, and Fertilization, and the Development of the Embryo, by Martin of Baltimore, is clearly written and well illustrated. The editor, Dr. Hirst, has written the chapter on the Fœtus, its physiology and pathology. We especially approve the system on which this chapter is prepared, by which the pathology of a part is considered in connection with its physiology and development. The physiology and pathology of pregnancy is well treated by Jaggard on the same general plan, and the chapter is embellished with a colored plate of the appearance of the areola in pregnancy, reproduced from Spiegelberg. The Phenomena and Conduct of Natural Labor are satisfactorily portrayed by Dr. Bussey; but we regret that the importance of external palpation as a diagnostic measure was not more fully presented, and that the details of obstetric asepis were not more clearly described and more forcibly insisted on.

The chapter on the Mechanism and Treatment of Labor, by Penrose, is a disappointment. The retention of the old nomenclature, and the description of six positions of the fetal head, while perhaps convenient to those who have been hitherto accustomed to them, unfit the chapter for modern use. The treatment of posterior positions of the occiput and chin is not in accord with the best modern teaching. Dr. Reeve contributes a well-written and valuable chapter on the Use of Anæsthetics in Labor, considering the subject from an historical and a practical point of view. The author's belief in the superiority of chloroform over

ether for obstetric anaesthesia will hardly find acceptance in this part of the country; and as he does not describe the use and advantages of ether, this want has been supplied by the editor. Chloral, bromide of ethyl, and cocaine receive adequate consideration. Parvin's chapter on the Anomalies of the Forces in Labor, embracing also a consideration of pelvic deformities and fetal anomalies, is written in the author's well-known clear and scholarly style.

As a whole, the volume deserves to rank well among similar works; and while not adapted to the use of the student, it will doubtless be favorably received by the studious physician. The appearance of the second volume will be awaited with interest.

The Urine and the Common Poisons. Memoranda, Chemical and Microscopical, for Laboratory Use. By J. W. HOLLAND, M. D., professor of Medical Chemistry and Toxicology, Jefferson Medical College. Illustrated. Second edition, revised and much enlarged. Philadelphia: P. Blakiston, Son & Co., 1888.

Chemical Experiments for Medical Students. Arranged after BEILSTEIN. By W. S. CHRISTOPHER, M. D., demonstrator of chemistry, Medical College of Ohio. Cincinnati: Robert Clarke & Co. 1888.

These books may be properly noticed together, inasmuch as both have been prepared with the same object in view, namely, to furnish a laboratory guide for the use of students of medicine.

Dr. Holland's work is limited to the chemistry of the urine and of poisons. It is a book which we can cordially recommend as in every respect an excellent one for use in the laboratory.

Dr. Christopher in his book first describes the chemical properties of nearly all the more important inorganic and organic compounds, whether poisons in the ordinary acceptance of the term or not. This part of the work will be found satisfactory so far as it goes. We do not, however, believe with the author that systematic qualitative analysis should be wholly omitted, as not adapted to the wants of the medical student.

In physiological chemistry, the work deals with the proteins and carbo-hydrates, the digestive processes, blood, bile, milk, and urine. The amount of instruction indicated by the author in these subjects will hardly satisfy the requirements of the medical student of to-day. The section on urine is especially unsatisfactory.

The Physicians' Visiting List for 1889. Philadelphia: P. Blakiston, Son & Co.

This is the thirty-eighth year of publication of this compact and excellent Visiting List. It is arranged for 25 patients per week. The blank pages are preceded by 32 pages of valuable data, including a number of useful diagrams.

—The Androscoggin Medical Association desire to have a general hospital established in Lewiston, Me. A committee has been appointed to take initiative steps to the obtaining of a charter, and to make other provisions towards this end.

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A SIDE LIGHT UPON THE PLAGUE OF THE SIXTEENTH CENTURY.

AMONG the great plague years in the history of the city of London is the year 1563. Two centuries and more before, the Black Death, made forever famous and awful by the pen of Boccaccio, had devastated Europe, and just a century later the pestilence took its final farewell of England. But 1563 was a bad year for the inhabitants of London. A glimpse of it, interesting to every student of the history of medicine, has just been presented in two old volumes, reprinted by the Early English Text Society. The one,¹ the work of Thomas Vicary, chief surgeon to Saint Bartholomew's hospital, first appeared in 1548 and was reissued in 1577 by the surgeon of Saint Bartholomew's. It contains, besides a treatise on human anatomy and various interesting contemporary documents, to some of which we may take occasion to refer at a future time, certain orders of the mayor and aldermen of the city of London, called forth by the plague. For instance, at a meeting, November 15, 1547, the lord mayor reported that it was the wish of the chancellor that signals should be displayed over houses where the plague was. It was ordered that householders in such cases should display in forty days a cross of Saint Anthony upon their houses, and that all wells and pumps should be drawn three times a week, and twelve buckets of water poured down the street gutters. In 1563, the worst year of the disease, it was ordered that two hundred blue headless crosses should be made for the chamberlain, to be set up on the doorposts of infected houses. Three days later two hundred more crosses were ordered. Again two days

¹ *The Anatomic of the Bodie of Man*, by Thomas Vicary, sergeant of surgeons to Henry VIII., Queen Mary, Edward VI., and Queen Elizabeth; master of the Barber Surgeons' Company and chief surgeon to St. Bartholomew's hospital, London, 1548-62. Early English Text Society. Extra series lib. 1885.

later the bailiff of Finsbury was furnished with blue crosses, and, what was more to the purpose, was ordered to have the dunghill lying in the highway near Finsbury court removed, and not to suffer any dung or filth thenceforth to be placed there. August 26, 1563, the mayor and aldermen adjourned for three weeks on account of the severity of the plague. Two weeks after reconvening they appointed two honest, poor men, under pay, to burn and bury such straw, clothes, and bedding as they could find in the fields, upon which had lain or died any person sick with the plague. January 20, 1564, the inhabitants were ordered "with all dyligence to ayre, clense and purge all theyre howsez, beddyng and apparrell for the daunger of the infeccion of the sycknes of the plague, forseinge neuertheles and takynge care that they or any of them doe neyther hange or beate oute . . . eny maner of beddyng or apparrell that hath beyn or come nere to the daunger of infeccion of the sayd sycknes."

William King, surgeon of the pest-house, petitioned the court September 10, 1611, for compensation in view of his "great care and diligence in caring of such persons as have beene sent thither," and because from his position his friends and former acquaintances refused to employ him in his profession. The appreciation held by the council for King's services and the value of his forfeited practice, is shown by their voting him £3 a year, to be paid quarterly, "so long as he shall continue his place of a chirurgeon at the Pest-house with that care and diligence as heretofore he had used." It was not long, however, before greater liberality was shown to the physicians. June 28, 1625, a committee of eight was appointed to confer with the doctors regarding the employment of one or two physicians by the city to treat those sick with the plague. This committee reported six days later that they had agreed with a Spanish doctor for one hundred marks per annum, and with Master Healt, surgeon, for fifty pounds per annum "to doe their best endeavors for the curing of all the poore infected with the plauge for nothing; and of the better sort infected for some reasonable recompence."

Another view of the plague of 1563 is shown by the curious "Dialogue against the Fever Pestilence" of William Bullein. This quaint old drama was published in 1564, and of this first edition only one copy is known to be in existence. The Early English Text Society have republished this book, which we can cordially recommend to these of our readers who like to give an evening occasionally to the rarer literary classics. Despite occasional prosy passages the dialogue is on the whole entertaining. The chief characters are Civis and Uxor,

the former a prosperous London citizen, originally from the north country; Roger, their servant; Antonius, a rich Italian merchant, none too honest; Medicus, a precious charlatan, who plays on the fears and credulity of his rich patient; Crispinus, his apothecary, an appropriate tool of an unscrupulous master; Avarus and Ambodexter, two shyster lawyers, who have their eye on Antonius' fortune, for which, however, Medicus, as being more urgently in his patient's demand, appears to have the inside track. Mors and Theologus take a large hand in the closing drama. At first Civis and his wife propose to stand their ground and not be driven from the city by fear, but after the experience of Antonius with the doctor and his other victimizers, the citizen's heart begins to fail him. He says; "Good uife, the dailei iangling and synging of the belles, the commynge in of the minister to every house, in ministering the communion, in readyng the Homelie of Death, the diggyng up of graves, the sparring in of windowes, and the blasyng forth of the blewse crosse, do make my harte tremble and quake." His wife is more than ready to flee. To his self-excusing of his flight and "trust that it is not againste Gods commandemente or pleasure that wee departe from this infected Ayre," she replies promptly, "I knowe not what God will in our departynge, But my fleshe trembles when I doe heare the Death bell ryng." They set forth from London, with rising spirits as they ride forth into the beautiful country. Roger, a wise fool, beguiles the way with many quaint conceits and tales of folk-lore. They alight at an inn, where they entertain at their private table Mendax, a traveller, who fills them with many wonderful stories of his adventures in "Terra Florida" in America. Later, having left the inn, a storm arises: Civis is suddenly overcome with terror. Mors appears. Civis hides his wife and Roger runs away. Mors gives his grim message. Theologus is summoned; a long dialogue ensues on mighty themes, and the curtain falls on the death of Civis.

Apart from the general literary value of this old drama, the physician will turn with special interest to the passages between Antonius and his medical adviser, who is named in the text of one of the editions Dr. Tocrub, an anagram upon the name of a Dr. Buroot, a somewhat celebrated man of that time, an expert in metals and minerals. At his first visit, Medicus cheerfully tells Antonius "there are no verie good tokens neither in your Vrin, Pulse, sterte, etc.," but on Antonius making considerable display of his riches, promised to take his case. Tocrub has little use for religion or the Bible, but he does repeat with unction the following text: "Honour the Phisician with the honor that is due vnto hym, because of necessitie, for

the lord hath created hym: and hee shall receive giftis of the kyng, yea, and of all men." Calling in his apothecary he gives his orders, and when the latter says he has used up all his fine myrrh, and asks what he shall do, Toerub says, "You are a wise man: put in *quid pro quo*, called *an-bakimura*."

When Avarus and Ambedexter arrive, the physician hastens to bleed and purge his patient, sending them word that he is not to be disturbed. They wish to be made executors of his will, and, in revenge upon Toerub for keeping the prey all to himself, they steal his mule. Discovering his loss, he is about to rush off, when the frightened patient begs him to stay, and offers to pay double for the mule.

Antonius' distress of mind increases. Crispine's conscience begins to trouble him for the rotten drugs he has given, but the doctor reviles him for his foolish qualms. To Antonius' increasing largesses, Toerub affects to offer objection, but speedily yields the point, so as not to "contrary" the patient. A long and rather wearisome conversation ensues between doctor and patient, the former explaining, in accordance with the Aristotelian philosophy, the nature of earth, the elements of God and the soul. Antonius after a while brings him to the question of the pestilence, which he explains in accordance with the teachings of Hippocrates, Galen, Etius, and others. From vague generalizations he is recalled by Antonius saying, "Goe not about the bushe with subtle words, but plainly speake the truthe to me, beyng in this fearful danger, as you do wel knowe that I am in." The physician thereupon gives some not unwise advice, regarding diet, excesses, fright, cleanliness. "No Priuies at hand, a softer fire with perfumes in the morn-yng."

Then follows a description of the symptoms of the plague, substantially as we know them: the buboes, the carbuncles, etc. To which the patient naively says, "You have shewed more perilles then helpees be thereunto." Then the physician proceeds to give the treatment, for which he draws upon the medical classics, for pills, potions, powders. To some of these Antonius naturally demurs, saying, "These are strong thinges for many weke stomakes," and adds, "I have heard saie that garlike and newe ale shoulde be good for the Plague." Medicus sentimentously replies, "You doe saie truthe; garlike is good for to bryng it, but not against it."

The prescriptions given are long and elaborate, and among the emotions which they excite in the mind of the medical reader of to-day is perhaps chiefly that of wonder that the Black Death of the fourteenth century claimed in London, after all, only one hundred thousand souls.

SCARLATINAL RHEUMATISM.

OLLIVIER, in a recent lecture delivered in the *Hôpital des Enfants Malades*, treats of the swollen, painful joints which often complicate or follow scarlet fever.

As to the nature of scarlatinal rheumatism, he thinks that this is a complication, and not an intercurrent affection; in other words, we have here a malady which has sprung up under the influence of scarlet fever, and which is only an exaggeration of certain phenomena determined by this disease. Sennert came near the truth when he said that toward the close of scarlet fever the peccant matter attacks certain of the joints and inflames them.

Although Blondeau, eighteen years ago, thought that he had established a parentage between scarlatina and rheumatism, both having among their manifestations arthritides, sore throat, endocarditis, and cutaneous lesions, the erythema nodosum being to rheumatism what the scarlet eruption is to the other disease, there is really nothing but a certain analogy to support this view, while the two diseases are clearly separated by their origin, their symptoms, and their effects. The view is much the more probable that the arthritis of scarlet fever, like the endocarditis and pleurisy which sometimes accompany this specific fever, is but the manifestation of the exanthema on the serous system in general.

The most of these arthritides, formerly called secondary rheumatisms, merit the name of infectious arthritides. They are in fact pseudo-rheumatisms, such as one meets in the course of divers diseases: blenorragia, puerperal fever, dysentery, erysipelas, even tuberculosis.

By what processes are these morbid phenomena of the serous membranes brought about? It is probable that they are due to the irritation determined by certain micro-organisms which penetrate these closed sacs, being conveyed by the blood; in fact, recent bacteriological investigations have more than once proved the presence of microbes in the joint liquids of infectious arthritis.

As for the prognosis of scarlatinal rheumatism, it is relatively favorable, this complication generally terminating in recovery. It will not do, however, to forget that the joints may suppurate, and that the patient is then especially in danger of vegetant endocarditis, or of suppurative pericarditis.

GUM CHEWING.

THE *New York Medical Journal* has a good word to say of the habit of chewing gum, which, despite the fact that this habit has been condemned by all authorities on good breeding, the Journal thinks may in some cases favor digestion by an increase

of the salivary secretion, besides acting as a gentle stimulant to the stomach by reason of some of the aromatic principles being swallowed with the saliva.

It is possible that gum-chewing, if indulged only occasionally, and in moderation, with physiological intent, may have a beneficial effect in cleaning the teeth, and promoting a more free flow of saliva, but the writer in the *Journal* surely cannot have heard of the cachexia peculiar to the inveterate chewer of spruce gum in certain localities, as in the French-Canadian part of the Dominion, and in some parts of the Northern and Western States; this condition is characterized by a pale, yellow complexion, loss of flesh, strength, and appetite, with dulness and inaptitude for mental application. At least this is the report of school teachers who have witnessed the effects of the habit on school children, and have found it necessary, in the interest of the health of their pupils, to absolutely interdict the practice. Physicians have also given testimony of similar purport.

THE DEATH PENALTY BY ELECTRICITY.

At the late annual meeting of the New York Medico-Legal Society the report was presented of the committee appointed in September to investigate and report on "The best method of executing the law punishing criminal cases by electricity."

Experiments have been made upon twenty-four dogs, two calves, and one horse, with both the continuous and the alternating currents, and the committee found that with the latter as low as one hundred and sixty volts would suffice to kill a dog, while with the continuous current a much higher degree of strength was required to produce a fatal effect. Death by the alternating current was without a struggle, while with the continuous current it was painful and accompanied by howling and struggling.

The committee recommended that the criminal to be executed should be securely fastened in a chair, and that one electrode should be applied to the spine between the shoulders, and the other to the top of the head. A dynamo capable of generating an electromotive force of at least three thousand volts should be employed, and a current with a potential of from one thousand to one thousand five hundred volts and with alternations of not fewer than three hundred per second. Such a current allowed to pass for from fifteen to thirty seconds would insure death.

After considerable discussion the recommendations of the committee were unanimously adopted as the voice of the society.

MEDICAL NOTES.

— A correspondent writes to the *Boston Record* as follows: "Within a few days my attention has been brought to a matter concerning the public health wherein it seemed to me the school committee has been decidedly in fault. The text-books in some classes, where measles and scarlet fever prevailed last year, were taken up, put away without special precaution, and redistributed a short time since. In two classes that came under my observation there was no case of similar disease when the books were given out, but in a few days the children began to be taken down with measles, and a large number of cases can be traced to this centre of contagion. The greasy dirt that gathers on covers and leaves of much-used books affords, like city text-books, the best of soils for cultivating disease germs.

Scarlet fever may be readily propagated in this way, and its epidemics in various parts of the city may have owed much to this cause—an easily avoidable source. The thorough disinfection, or better still, the burning up, of a few hundred old books each year, might save the lives of many children.

— The Ladies' Health Protective Association of New York held a meeting December 11th, and talked over several matters which investigation has satisfied them stand sadly in need of reform. For some time past the association has been attempting to arouse a public sentiment which shall demand that New York city be furnished with garbage cremators in place of the dumping scows, which are emptied into the harbor. A committee has held a conference with the Board of Health, and that body has assured the ladies that if facts regarding efficiency and cost of the cremator can be secured, it will heartily co-operate in an attempt to have them introduced here.

The ladies at their own expense have engaged a civil engineer, who will visit the cities of Pittsburgh, Buffalo, St. Paul, Minneapolis, and Des Moines, and make a detailed report upon the cremators in use there. Several of the companies making them have offered to put cremators in on trial, and the offer of one company has been accepted, and a site secured for its location.

— The medical examiners of the Boston life underwriters held their December meeting at Young's Hotel Dec. 11, President G. N. Carpenter in the chair. At the banquet speeches were made by Dr. Richardson, Dr. Wells, Agent-General Phelps, of Vermont, Dr. E. N. Whittier, Dr. Bundy, and J. B. Niver. Dr. Oliver Wendell Holmes sent a letter of regret.

—The *Indianapolis News* says: Des Moines, Iowa, sets an example for this and other cities to follow that do not already do likewise. Des Moines has a crematory for the city refuse which cost only \$1700. As an indication of its effectiveness there was at one time recently burned in it, in one hour, two dead horses, seven dogs, eighteen barrels of garbage, three hods of manure, fifteen bushels of rotten eggs and three barrels of rotten fish, and no offensive smell was emitted. The disposal of city rubbish with us is coming to be a question of increasing importance; for with the use of natural gas an enormous amount of waste that was always burned remains to add to general accumulation, and "hauling it off" is a process that will not do forever.

—The *Chicago Tribune* interviewed a "leading physician" as to whether Sir Morell Mackenzie's fee in the case of the Crown Prince was often duplicated in Chicago, and received this estimate of average proportional earnings in that city:—

"There are, I think, not over half a dozen men whose income from their practice exceeds \$10,000 or \$12,000. They are men of the widest reputation, who have been years in building up a practice among a class of people that will pay a little above the usual rates. Moreover, they are men of sufficient business ability to succeed in other walks of life. If they have grown rich it is out of shrewd investments, not practice. There are a large number who earn on the scale from, say, \$12,000 down to \$6,000. Physicians consider themselves in good practice if they collect \$5,000 a year. The great majority earn far below \$5,000. Many make less than \$1,000 per annum."

—Dr. Nathan R. Gorter, a physician of Baltimore has sued Mr. Robert Garrett in the superior court for \$30,000, for professional services rendered by the plaintiff to the defendant during his recent trip around the world. He remained with the party for eight months, during which his attentions to his patient were so unremitting as to impair his own health. Payment of his claim was refused on the ground that it was excessive.

—An English medical contemporary, referring to the horrible "Whitechapel murders," of which, by the way, there has been a fresh specimen within a few weeks, solaces itself with the recollection of an epidemic of murder which swept over Texas a year or two since, lasting about a year. Eight women in all were killed, including two white-married women. The others were colored women and girls. These murders have never been explained. The assassin left no trace whatever to identify him. There was a fearful similarity among all these murders. Nearly

all were killed about midnight, and usually within a few days of full-moon nights. All of the victims were struck with some sharp instrument about the head, and on the same side of the head. All were slain in profound silence, even persons in the adjoining room hearing nothing. The bodies were all found in the same position. All were dragged out into the back-yard.

—The first annual meeting of the Southern Surgical and Gynecological Society closed its sessions December 6th.

The meeting has been a success in its every detail. A vote of thanks was extended to the president, Dr. Haggard, and the secretary, for the manner in which they had conducted their work.

Officers were elected for the ensuing year and committees appointed. The next meeting of the association will be at Nashville, commencing on the second Tuesday in November, 1889.

The officers are as follows:—Dr. Hunter McGuire, president, of Richmond, Va.; vice-presidents, Drs. W. O. Roberts, of Louisville, Ky., and Bedford Brown, of Alexandria, Va.

—The national association of railroad baggage agents have recently met to prepare rules and regulations regarding the transportation of corpses. They have sent to all State boards of health copies of a system of rules prepared by a special committee, with a request that the boards suggest such changes as they see fit. The Iowa board recommended that scarlet fever, typhoid fever, and puerperal fever be added to the list of diseases which render corpses non-transportable; that uniform regulations be adopted regarding disinterment; and that undertakers be compelled to undergo an examination as to their qualifications, and receive a certificate entitling them to engage in business.

—A lay writer in the *San Francisco Chronicle* pleasantly compares horse-doctors and "ordinary" doctors rather to the disadvantage, in respect to lucidity of directions, of the latter, and adds:—

"You know how doctors make out prescriptions. They put on the bottle, 'A teaspoonful three times a day.' Now, naturally, you have a great respect for a doctor's instructions as long as you are sick, and you worry over that 'three times a day.' You try to divide the day into three parts and fix a time at which you will take that medicine. You are busy and you forget to take the second dose on time, and you have to go to bed before it seems to you natural to take the third dose. You get up in the middle of the night and take it. Then you remember when you wake in the morning that you took it some time in the night, and you did not look at

the clock, and you feel either that it will do you no good, or it will kill you if you take too much of it, or if you don't give one dose a reasonable time to act before you take down another. And you don't know when to stop, whether one bottle's enough, or whether two bottles are too much. If the prescription would tell you—well—it wouldn't make much difference. You'd get mixed up all the same. I like this Arizona horse-doctor's prescription. It is clear, lucid, unequivocal, even if it is badly spelled. It is here *verbatim et literatim* :—

"One table spoon full for 3 days and leve of 3 days and repeat for 3 days and leve of for 3 days and repeat for 3 days. fead it on the Tung. Doe not Blankett to warm. fead soft fead."

—The failures of the faith cure, under the somewhat positive requirements of a new civilization, are illustrated by a Western contemporary, which says: "Dr. Jeremiah Addison, a 'faith curer' from Tin Cup, Colorado, had a brilliant success in Farmington, until he tackled the case of a cow-boy who had been stabbed. Just as the 'doctor' was telling him that he was only imagining he was hurt, the cow-boy's revolver went off, and the physician from Tin Cup fell into a dry-goods box, and would have been killed if friends had not interfered."

NEW YORK.

—At the annual meeting of the Society of Medical Jurisprudence and State Medicine, held December 13th, the following officers were elected: president, Dr. Landon Carter Gray; vice-president, C. H. Kittell; recording secretary, E. C. Spitzka; corresponding secretary, Dr. J. F. Chauveau; treasurer, D. McL. Shaw. The paper of the evening was by Austin Abbott, Esq., on "The Whitechapel Murders and Criminal Lunacy," and in the course of it he said: "These slaughters are wholly within the lines of the habitual conduct of barbarous ancestors, indulged in for the pleasurable sensation of witnessing tortures. Cruel mutilations are not, therefore, inconsistent with average soundness of mind. The Whitechapel murderer is behind the times. He is an anachronism, but not necessarily to be accorded the charity of considering him insane."

—It is announced that Mr. John Jacob Astor has signified his intention to erect a pavilion for male patients in connection with the New York Cancer Hospital, which is to be a memorial of his wife, and will cost about \$150,000. The entire amount of Mr. Astor's gifts to the hospital exceed \$300,000. The wife of Gen. Cullum, another of the founders of the institution, left by her will provisions for the erection of a chapel at a cost of \$50,000; and work will be begun on the new

pavilion and the chapel as soon as the architect's plans have been perfected. The Cancer Hospital has just celebrated its first anniversary; having been opened for the reception of patients December 7, 1887. During the year two hundred and sixty-one women have been treated in it. It is the first hospital erected in this country with circular wards, and this special feature has proved very satisfactory.

—The annual meeting of the Medico-Legal Society was held December 12th, when the following officers were elected: president, Clark Bell; vice-president, Dr. W. H. Stevinson; secretary, Albert Bach; treasurer, E. W. Chamberlain.

MISCELLANEOUS.

HOSPITALS AMONG THE GREEKS.

AN interesting lecture, which is reported in the *British Medical Journal* Nov. 10, was given on November 3rd by Miss Jane E. Harrison, at Toynbee Hall, Whitechapel, London, on hospitals among the Greeks. The lecturer, who illustrated her discourse by the use of a magic lantern, said there was no one of the Greek gods who had been so thoroughly misunderstood as Æsculapius, the god whom the people came to consult in their difficulties, and especially in cases of sickness. His temple at Athens, which had only recently been excavated, was nothing more nor less than a hospital, where people went to get their diseases diagnosed and cured. This, like the other Greek temples or hospitals, had three indispensable things—a shrine, a large apartment in which the patients slept or walked about, and a spring of clear water, known as the holy well. From the very earliest times the people were always careful to choose for their temples very healthy places—as a rule, some far-away inner valley, where there was a pleasant grove of trees and plenty of pure water. The lecturer went on to describe the method of treatment which the patients underwent, and the manner in which they were really made to dream, and thus came to believe so thoroughly in the powers of the dream god Æsculapius. In the first place, a patient had to leave his home and most of his friends, so that there was a complete change of environment. He found everything quiet and tranquil, and he was shown all the offerings made by former patients in thankfulness for the good they had received from the dream god. He would have a long conversation with a priest, who by this means discovered what the patient's ailment was, and, after a burnt-offering on the altar, he went to bed. It was not at all wonderful, under the circumstances, that he had a dream. There were some who would not conform to the rules as to diet, and we were told that the gods wisely refused to visit them in the night. There were, however, some heavy sleepers who could not dream, and these were allowed to have a friend to dream for them, or for a small sum they could hire a professional dreamer. In some instances there was no doubt the priests dressed up in fantastic garments and appeared before the patients,

who were thus led to believe they saw visions. After the dreams, practical remedies were applied, and many of the remedies of Esculapius were the same as would now be given in similar disorders; and there was an instance of a physician offering as a token of his gratitude a stone set of his surgical instruments. The lecturer then gave an interesting description of a number of stone offerings placed in the temple by patients.

SCURVY IN THE RUSSIAN NAVY.

DR. A. P. LEVITSKI has published as a graduation thesis an interesting work on scurvy in the Russian navy from 1835 to 1884, which we find noticed at some length in the *Lancet*. During this period of fifty years the total number of cases of scurvy was 114,266. In the first half of these fifty years 6 per cent. of the men were affected, during the second half 2.2 per cent., and during the final quarter of the period only 1.6 per cent. This improvement seems to have been due to the better care that has been taken of the men in recent years, and especially to the improvement in their dietary. The cases have been less numerous at sea than ashore, and this difference is ascribed to the ration of meat allowed at sea being nearly double that allowed on shore. Climate alone appears not to play any part in the etiology of the disease. It occurs in all latitudes, and is sometimes very rife in the tropics. During the first half of the fifty years referred to, the Black Sea fleet suffered less than the Baltic fleet, and the Archangel fleet showed a scurvy rate only half as high as the Black Sea fleet, and less than half that of the Baltic fleet. In the latter half of the fifty years the rate in the Archangel fleet was only about a quarter of that of the Baltic fleet. During autumn and winter the disease, as a rule, almost disappears, both at sea and on shore. The general sickness rate has increased in recent years, while the scurvy rate has, as we have seen, diminished in a marked degree. In the Archangel, Black Sea, and more especially in the Caspian fleets the sickness rate from fever has lately been very high, being nearly 40 per cent. in the Caspian fleet ashore and 55 per cent. afloat; but, nevertheless, in all these fleets the amount of scurvy has been insignificant. Again, catarrh and febrile affections are more frequent at sea, scurvy being, as above mentioned, more frequent ashore. The main factors in the etiology of scurvy are fatigue and insufficient nourishment. Thus it has been observed, over and over again, both at sea and on shore, that an outbreak of scurvy has followed an increase of work, the diet being of the ordinary kind; also that such outbreaks could be checked either by diminishing the work or by improving the diet, especially by increasing the meat ration.

SUBDURAL ABSCESS OF THE BRAIN.

THE *Polyclinic* (Nov., 1888) publishes the following conclusions of Sir William Stokes regarding abscess of the brain:—

1. That after the primary symptoms of cerebral traumatism have subsided, there is frequently a latent period of varying length, during which there are no distinct brain symptoms connected with abscess formation whatever.

2. That their appearance is, as a rule, sudden, and if uninterfered with they run a rapidly fatal course.

3. That the occurrence of pus production resulting from cerebral traumatism is not incompatible with a perfectly apyrexial condition.

4. That this latter fact will probably aid in differentiating traumatic cerebral abscess from meningitis or encephalitis inflammation.

5. That both as regards color and consistence there is great variety in the contents of cerebral abscess cavities, and that, as shown in Wilne's case, published by Rose, of Berlin, they may become transparent.

6. That antisepticism has largely diminished the risks of the operation of trephining.

7. That, having regard to the great mortality of cases of cerebral abscess when uninterfered with—viz., from 90 to 100 per cent.—the operation is indicated even when the patient is *in extremis*.

8. That, in the case when the trephine opening does not correspond to the situation of the abscess, exploratory puncture and aspiration may be employed.

9. That by the adoption of this measure the necessity for multiple trephine openings can be largely obviated.

10. That the employment of a blunt-pointed aspirating needle, as suggested by Rentz, is probably the safest mode of exploration and evacuation.

11. That drainage is desirable in the after-treatment of such cases.

12. That both during and subsequent to operative interference in these cases a rigid antisepticism is imperatively required.

Correspondence.

"THE NURSE AT LARGE."

Boston, Dec. 12th, 1888.

MR. EDITOR:—Will you allow me space for reference to the "nurse at large" to be found at No. 6 Carver St.?

From 9 to 11 o'clock A.M. orders for the nurse may be left at this place, in the rear rooms, up one flight. Physicians who wish to meet her in person before she goes on duty, will find the nurse at the office between 1.30 and 2 o'clock P.M.

She is a trained nurse, and her work is to teach the friends of *poor* patients how to take care of them. She will visit a patient every day so long as her services may be required. She is not allowed to spend the night by the sick bed unless it be absolutely necessary. She goes from patient to patient during the day, teaching the various things needed in the care of the sick.

This is a charity. The services of the nurse are offered gratuitously to the very poor. The ladies who originated the work are anxious to make it a success. Its advantages hardly require mention. Our physicians have been notified of it, but, as yet, notwithstanding the fact that this charity was inaugurated twelve months ago, but very few have called for the services of the nurse. It is hoped that she will not be forgotten.

Truly yours,

HAMILTON OSGOOD.

WOOLLEN OR COTTON UNDERCLOTHING.

Boston, Dec. 12th, 1888.

MR. EDITOR:—The writer was early instructed, and has ever believed, that flannel (woollen) underclothes were not only healthy but were a necessity in winter, if not the entire year. The reasons were supposed to be obvious to any intelligent person.

But lately many of the physicians of Boston, and among them some of the leading lights, have been instructing their patients not to use woollen underwear *at all*, but to wear cotton, winter as well as summer; that if with these they wear proper outside garments when in the open air they will be healthier—freer from coughs, colds, rheumatism, and other afflictions the use of cotton has been supposed to aggravate and flannel to relieve.

This disconcerts all my preconceived notions of the fitness of things as regards underwear. What most surprises me is, that after trying it for a winter the patients themselves are enthusiastic advocates of cotton, declaring they were "never so free from coughs and colds," and suffered less from rheumatism, etc., as well as being more comfortable, than when they wore woollens.

What shall we do, we poor mortals who are thus between two fires, and who want to keep as healthy and comfortable as possible, but who hardly dare discard our flannels for fear there may be a funeral in the family before the winter is over?

Will not the JOURNAL enlighten its readers on this really important matter, and particularly

ONE OF THE LATTY.

REPORTED MORTALITY FOR THE WEEK ENDING DECEMBER 8, 1888.

Cities.	Estimated Population for less.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diph. & Croup.	Typhoid Fever.	Scarlet Fever.
New York.....	1,526,081	700	351	21.36	13.86	1.12	7.28	4.06
Philadelphia.....	1,016,758	316	92	12.80	15.04	6.72	1.82	2.56
Brooklyn.....	751,432	304	128	16.30	14.19	8.91	2.31	3.52
Chicago.....	760,000	268	93	19.98	10.73	11.10	3.70	1.85
St. Louis.....	449,160	138	53	27.74	9.49	7.77	1.37	3.37
Baltimore.....	437,155	132	52	8.58	19.45	2.64	1.32	1.66
Boston.....	407,024	164	33	10.47	18.91	4.88	4.88	—
Cincinnati.....	325,000	107	—	18.66	13.02	12.09	.78	—
New Orleans.....	248,000	142	46	21.00	11.90	3.50	.70	.70
Buffalo.....	230,000	—	—	—	—	—	—	—
Washington.....	225,000	82	35	8.54	10.98	2.44	1.22	—
Pittsburg.....	210,000	—	—	—	—	—	—	—
Milwaukee.....	200,000	—	—	—	—	—	—	—
Providence.....	123,000	—	—	—	—	—	—	—
New Haven.....	80,000	—	—	—	—	—	—	—
Nashville.....	65,153	15	5	33.33	6.66	6.66	13.33	—
Charleston.....	60,145	37	11	25.90	—	2.70	8.10	—
Portland.....	40,000	19	2	5.26	10.52	—	5.26	—
Worcester.....	76,328	17	11	—	5.88	—	—	—
Lowell.....	69,530	—	—	—	—	—	—	—
Cambridge.....	64,079	18	5	5.55	5.55	—	—	—
Fall River.....	61,203	20	8	5.00	25.00	—	—	5.00
Lynn.....	51,467	10	—	—	30.00	—	—	—
Lawrence.....	40,175	8	3	—	25.00	—	—	—
Springfield.....	39,952	—	—	—	—	—	—	—
New Bedford.....	36,298	15	5	13.33	—	6.66	—	6.66
Somerville.....	33,307	—	—	—	—	—	—	—
Holyoke.....	32,887	—	—	—	—	—	—	—
Salem.....	28,781	8	1	—	—	—	—	—
Chelsea.....	27,552	7	1	—	14.28	—	—	—
Haverhill.....	24,976	8	5	12.50	12.50	—	—	—
Taunton.....	24,796	8	1	—	2.00	—	—	—
Brockton.....	24,781	—	—	—	—	—	—	—
Gloucester.....	23,187	—	—	—	—	—	—	—
Newton.....	21,105	7	1	—	—	—	—	—
Malden.....	18,932	5	1	20.00	—	—	—	—
Fitchburg.....	17,534	5	3	20.00	—	20.00	—	—
Waltham.....	16,651	6	—	—	—	—	—	—
Newburyport.....	13,839	5	1	20.00	—	20.00	—	—
Northampton.....	13,419	—	—	—	—	—	—	—

Deaths reported 2301; under five years of age 957; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas, and levers) 426, acute lung diseases 379, consumption 336, diphtheria and croup 191, typhoid fever 59, diarrheal diseases 13, scarlet fever 22, measles 34, malarial fever 26, whooping-cough 24, puerperal fever 14, erysipelas six. From diarrheal diseases, New Orleans 18, New York 13, St. Louis, Baltimore, and Charleston two each, Brooklyn, Chicago, Cincinnati, and Malden one each. From measles, New York 22, Chicago six, Brooklyn two, Philadelphia, St. Louis, and Baltimore one each. From malarial fever, New York seven, St. Louis six, New Orleans two, Brooklyn and Baltimore three each. Philadelphia and New-York one each. From whooping-cough, New York 13, Brooklyn four, Philadelphia three, Washington two, New Orleans and Charleston one each. From puerperal fever, New York

seven, St. Louis three, Washington two, Cambridge one. From erysipelas, Chicago and St. Louis two each, New York and Nashville one each.

In the 28 greater towns of England and Wales, with an estimated population of 3,308,271, the week ending November 21, the death rate was 18.2. Deaths reported 13278; infants under one year of age 825; acute diseases of the respiratory organs (London) 27, measles 239, diphtheria 57, whooping-cough 51, diarrheal 49, fever 42, small-pox (Cardiff) one.

The death-rates ranged from 9.3 in Derby to 23.9 in Blackburn; Birmingham 13.7; Bradford 19.1; Huddersfield 17.1; Hull 12.4; Leeds 1.8; Leicester 13.2; Liverpool 21.1; London 17.2; Manchester 25.2; Nottingham 17.2; Sheffield 16.2.

In Edinburgh 14.1; Glasgow 17.4; Dublin 25.9.

The meteorological record for the week ending December 8, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week end'g Saturday, Dec. 8, 1888.	Barometer.		Thermometer.		Relative Humidity.		Direction of Wind.		Velocity of Wind.		State of Weather.*		Rainfall.	
	Daily Mean.		Daily Mean.		S. A. M.	S. P. M.	S. A. M.	S. P. M.	S. A. M.	S. P. M.	S. A. M.	S. P. M.	Duration in Hours & Mins.	Amount in Inches.
Dec. 2	29.98	32.0	40.0	25.0	67	60	W.	W.	12	14	C.	C.		.00
" 3	29.96	35.0	41.0	30.0	70	53	W.	W.	12	8	C.	C.		.00
" 4	29.79	34.0	38.0	33.0	72	90	W.	W.	7	8	O.	T.	4.30	.00
" 5	29.70	40.0	47.0	31.0	74	53	S. W.	S. W.	14	8	O.	O.	3.00	.00
" 6	29.41	33.0	42.0	29.0	82	79	N. W.	N. W.	13	24	F.	C.	5.00	.01
" 7	30.01	30.0	45.0	24.0	56	56	W.	S. W.	15	14	F.	C.		.00
" 8	30.11	30.0	49.0	36.0	62	68	W.	S. E.	12	12	O.	C.		.00
Means for the Week	29.91		43.0	29.0		67.0								

* O, cloudy; C, clear; F, fair; G, fog; H, hazy; S, smoky; R, rain; T, threatening; N, snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM DECEMBER 8, 1888, to DECEMBER 14, 1888.

By direction of the Secretary of War Colonel JEREMIAH H. BAXTER, chief medical purveyor, will proceed to St. Louis, Mo., and Hot Springs, Ark., on public business connected with the Medical Department; on completion thereof to return to his proper station. Paragraph 13, S. O. 286, A. G. O., Washington, December 12, 1888.

TOWNS, FRANCIS L., major, surgeon, is relieved from duty at the post of San Antonio, Texas, and will report in person to the commanding officer, President, of San Francisco, Cal., for duty at that station, relieving Major HENRY K. TILTON, surgeon, and by letter to the commanding general, Department of California, paragraph 19, S. O. 286, A. G. O., Washington, D. C., December 8, 1888.

TILTON, major, upon being relieved by Major Towns, will proceed to West Point, New York, and report in person to the superintendent of the U. S. Military Academy for duty at station, relieving Major CHARLES F. HEIZMANN, surgeon. Paragraph 19, S. O. 286, A. G. O., Washington, December 8, 1888.

HEIZMANN, major, upon being relieved by Major Tilton, will proceed to San Antonio, Texas, and report in person to the commanding officer of that post for duty, and by letter to the commanding general, Department of Texas. Paragraph 19, S. O. 286, A. G. O., Washington, December 8, 1888.

FINLEY, JAMES A., captain, assistant surgeon, is relieved from duty at Fort Tipton, Dakota Territory, to take effect upon the expiration of his present sick leave of absence, and will report in person to the commanding officer at Fort Assiniboine, Montana, for duty at that post. Paragraph 19, S. O. 286, A. G. O., Washington, December 8, 1888.

JOHNSEN, RICHARD W., captain, assistant surgeon, is relieved from duty at Fort Adams, Rhode Island, and will report in person to the superintendent of the U. S. Military Academy, West Point, New York, for temporary duty at that station. Paragraph 19, S. O. 286, A. G. O., Washington, December 8, 1888.

LEAVE OF ABSENCE.

Leave of absence for fourteen days, to commence on or about December 24th, 1888, is granted Captain ALONZO R. CHAPIN, assistant surgeon U. S. Army. Paragraph 1, S. O. 291, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, December 11, 1888.

NOTICE.

An Army Medical Board will be in session in New York City, N. Y., from May 1st to 31st, 1891, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing permanent vacancies.

Persons desiring to present themselves for examination by the board will make application for the necessary invitation to the Secretary of War, before April 1, 1891, stating the place of birth, place and state of permanent residence, and enclosing certificates based on personal knowledge from at least two persons of repute, as to American citizenship, character and moral habits. Testimonials as to professional standing from professors of the Medical College from which the applicant graduated, and of service in hospital from the authorities thereof, are also desirable. The candidate must be between 21 and 28 years of age, and a graduate from a *Regular Medical College*, evidence of which, his Diploma, must be submitted to the board.

Further information regarding the examinations and their nature may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

J. S. MOORE, Surgeon-General U. S. Army, Surgeon-General's Office, Washington, D. C., Dec. 1, 1888.

DEATH.

Died in Charlestown, Mass., December 13, 1888, Henry Holton Fuller, M. D., M. S. S., aged fifty-two years.

A PRIZE OFFERED TO MEDICAL MICROSCOPISTS.

In behalf of The American Association for the Study and Cure of Inebriety the sum of One Hundred Dollars is offered by Dr. L. D. Mason, Vice-President of the Society, for the best essay on "The Pathological Lesions of Chronic Alcoholism Capable of Microscopic Demonstration."

The essay is to be accompanied by carefully prepared microscopical slides, which are to demonstrate clearly and satisfactorily the pathological conditions which the essay considers. Conclusions resulting from experiments on animals will be admissible. Accurate drawings or micro-photographs of the slides are desired.

The essay, microscopical slides, drawings or micro-photographs are to be marked with a private motto or legend and sent to the Chairman of the Committee on or before October 1, 1890.

Chairman—W. H. BAILEY, M. D., F. R. M. S., Lond., Eng. (Chairman Med. Microscopical Soc., Brooklyn) 175 RUMSEY ST., BROOKLYN, N. Y.

BOOKS AND PAMPHLETS RECEIVED.

Rambles in the Highways and Byways of a Doctor's Life. An address before the Graduating Class at the 32nd Annual Commencement of the Medical Department of Dartmouth College, November 22, 1887. By WILLIAM S. LEONARD, M. D., Delegate from the New Hampshire Medical Society.

A Treatise on Hysteria and Epilepsy, with some concluding observations on Epileptic Insanity. By J. LEONARD CORNING, M. D., etc., etc. Detroit: George S. Davies. 1888.

Case of Emperor Frederick III. Full official reports. By the German Physicians, and by Sir MORELL MACKENZIE. The Reports of the German Physicians translated by Henry SCHWEIG, M. D. New York. 1888.

Tests for Diabetes Mellitus. By PALMER C. COLE, A. M., M. D., New York. Read before the Northwestern Medical and Surgical Society of New York, June 20, 1888. New York. 1888.

Transactions of the Obstetrical Society of London. Vol. XXX. for the year 1888. Part I. for January and February. London. 1888.

The Physician's Visiting List for 1889. Philadelphia: P. Blakiston, Son & Co.

Transactions of the New Hampshire Medical Society at the Ninety-eighth Annual Session, held at Concord, June 19 and 20, 1888.

Clinical Lectures on Diseases of the Urinary Organs, Delivered at University College Hospital. By Sir HENRY THOMPSON, etc., etc. Eighth edition. London: J. & A. Churchill. 1888.

Morrow's Atlas of Venereal and Skin Diseases. No. 2. William Wood & Company, publishers, 56 and 58 Lafayette Place, New York.

Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Second series. Volume fifty-third. London: Longmans, Green & Co. 1888.

The Medical News Visiting List, 1889. Thirty Patients per week. Philadelphia: Lea Brothers & Co. 1888.

Report of the Chief of the Bureau of Medicine and Surgery to the Secretary of the Navy, 1888. Washington. 1888.

The President's Annual Address. By Robert BATEY, M. D., Rome, Georgia. Reprint. Philadelphia. 1888.

Nystagmus in Connection with Diseases of the Ear. By CHARLES J. KLIPP, M. D., Newark, N. J. Reprint. 1888.

The Professional Canvasser, No. 1. Designed for and intended as an advertising medium of the interests of Fred D. Van Horen. Hunterton Lectures on Tension as met with in Surgical Practice. Inflammation of Bone. And on Crural and Intracranial Injuries. Delivered before the Royal College of Surgeons of England, June, 1888, by THOMAS BRYANT, F. R. C. S., etc., etc. London: J. & A. Churchill. 1888.

Original Articles.

RESUME OF TWO AND ONE-HALF YEARS' EXPERIENCE IN ABDOMINAL SURGERY.¹

BY J. C. IRISH, M.D., LOWELL, MASS.

On former occasions I have presented a report, more or less complete, of nearly all the laparotomies I had made previous to 1886, and I have reported but two or three of my cases since that date. In this paper, therefore, I shall present a brief summary of my work in abdominal surgery from the beginning of 1886 to the present time. My whole number of cases, as shown in the appended tables, during this period is twenty five,—fifteen ovariectomies and ten abdominal sections for other affections.

The numbers attached to the cases indicate their chronological order.

Before calling your attention to the results as shown in the tables, and to those particular cases that seem to have an especial importance, it may not be amiss to say a few words of some of the details in the operation of ovariectomy. In that most important matter of all, the avoidance of any septic infection of the patient, the precautions I take will doubtless seem very inefficient to my antiseptic friends. I have simply attempted to secure an absolute cleanliness of the room with its contents, the patient, nurse, assistants, sponges, instruments, and silk.

Before an operation, the silk has been boiled, and then, with the sponges and instruments, washed in a 1 per cent. carbolic solution. Especial care has been taken in cleaning the eyes of all the needles. A solution of carbolic acid of this strength has been shown to be utterly useless for the destruction of bacteria of any kind, and cannot, therefore, in any sense be considered as antiseptic.

Yet among the twenty-five cases, whose histories I present to-day, there is but one death that can by any possibility be charged to septic infection, and in this case I believe that the fatal result was due to some other cause.

Again, of those that have recovered, the temperature charts show their entire freedom from any sepsis. During their convalescence most have had a temperature that never exceeded 100° and none were higher than 101°, and that for only a short time. A sudden rise of temperature of a degree or more, lasting a few hours, often accompanies the appearance of a sanguineous discharge from the vagina, that usually occurs two or three days after an ovariectomy. This has been termed by one writer a "uterine epistaxis."

An incision at least three inches long I have found more convenient than a shorter one, and at the same time amply sufficient for the removal of single cyst tumors and multilocular cysts that do not contain much solid matter. Still I have never seen a laparotomy in which the length of the incision has apparently modified in any unfavorable way the subsequent progress of the patient.

Therefore, whenever it is difficult to reduce the size of a multilocular tumor, with the hand in the main cyst cavity to an extent that allows readily

its withdrawal, or whenever adhesions interfere, I believe it is much safer and better to sufficiently enlarge the incision than to employ strong traction. In this way all danger of rupturing the cyst, or of tearing off adhesions at places which will give troublesome hemorrhage, will be avoided.

The time occupied by an abdominal operation I believe to be an important factor in its influence upon the result.

The moment the abdominal cavity is opened and its contents begin to be handled or disturbed, the advent of shock is apparent in the patient, and is shown by an altered respiration and look of the countenance. This becomes more and more profound, so long as the manipulations continue. There is an immense difference, of course, in the degree of shock shown in different cases. Yet to a certain extent it is always present. The severity of it shows not only the present vitality or resisting power of the patient, but indicates, too, in some measure the future course of the case. Those cases in which the shock was profound, or long continued, or out of proportion to the severity of the operation have often gone badly with me. The reason that excisions of the intestines have been followed by so large a mortality is the great length of time the operation has required. The careful introduction of the thirty or forty Lambert sutures that are needed will occupy in expert hands at least an hour.

Post-mortem examinations after this operation have usually shown that death was not due to any failure of intestinal sutures or to peritoneal inflammation. The cause of death has been rather the shock and consequent exhaustion. Could this become an operation of fifteen minutes instead of an hour and a half, we might well expect from it many brilliant results. In the same manner, and almost to an equal degree, is the success of an ovariectomy or hysterectomy affected by the duration of the operative procedures.

In the closure of the abdominal wound, the advantage of bringing peritoneal surfaces in contact throughout its entire length is conceded. Primary union at the bottom of the incision is thus certainly secured, and the peritoneal cavity protected from the entrance of foreign matter. Some operators advise sewing together the peritoneal edges before closing the remainder of the wound. I think I accomplish the same purpose as surely, and much more rapidly, by introducing interrupted sutures about one-half inch from the cut edge of the peritoneum on each side, and bringing them out through all the overlying structures.

Table I. gives a résumé of fifteen ovariectomies, with thirteen recoveries and two deaths. The latter were Cases Nos. 31 and 42.

In Case 31 the patient had been confined to her bed two weeks. She had chills and fever followed by frequent profuse perspirations. She had become so much prostrated, that at the time of the operation her pulse could scarcely be counted and she was unable to lift her head from the pillow. Her temperature was 102°. It was evident that she was suffering from a severe septicemia, due to the abdominal growth, and that her only chance of recovery was in its removal.

Unpromising as our patient seemed, I decided to go on with the operation, with the faint hope that,

¹ Read before the Middlesex North District Medical Society, July 25, 1888.

TABLE I. — OVARIOTOMIES.

Number.	Name.	Residence or Place of Operation.	Date of Operation.	Medical Attendant or Assistants.	Age.	Length of Incision.	Double or Single Ovariectomy.	Character of Tumor.	Remarks.	Recovered.	Died.
26	Mrs. S.	Nashua.	1886, March 10.	Drs. Dearborn, Currier and Prescott	29	8 in.	Single.	Multilocular.	Tumor consisted mainly of one large cyst, weight 42 lbs. No adhesions.	Recov.	
27	Mrs. R.	Lowell.	April 12.	Drs. Benoit, Parker, and Bradt.	26	3 in.	"	Unilocular.	Tumor weighed 17 lbs. No adhesions. Highest temperature after operation 99.2°.	"	
28	Miss M.	Concord, N. H.	Nov. 4.	Dr. Walker	49	8 in.	"	Fibroid tumor ovary.	Tumor weighed 8 lbs. Ascites. Firm adhesions within pelvis and above; general health very poor.	"	
30	Mrs. W.	New Boston, N. H.	Dec. 22.	Drs. Weaver, Dearborn, Dinsmore, and Blandell.	58	about 7 in.	"	Multilocular, nearly solid.	Extensive parietal and intestinal adhesions. Ascites. Tumor probably malignant. Died one year after of cancer of bowels.	"	
31	Miss P.	Carlsile.	1887, Jan. 7.	Drs. Marsh, Benoit, and Gage.	46	3 in.	"	Unilocular, contents pus.	Parietal adhesions at time of operation. Temperature 102°. Pulse could not be counted. Could not sit up in bed. Weight about 20 lbs.		Died 24 day.
36	Miss D.	Lowell.	June 16.	Drs. Pillsbury, Benoit, and Bell.	30	3 in.	"	Multilocular.	Extensive recent adhesions. Weight 25 lbs.	Recov.	
37	Miss D.	"	June 29.	Drs. Plunkett, Spalding, and Gage.	52	about 3 in.	"	Unilocular.	No rise of temperature. Weight about 30 lbs.	"	
38	Miss Meg.	"	Aug. 13.	Drs. Plunkett, Fiske, and Bradt.	16	7 in.	"	Multilocular.	Ruptured cyst before operation. Weight 20 lbs.	"	
40	Mrs. H.	Billerica.	Oct. 6.	Drs. Howard, Lane, Wood.	33	5 in.	"	Multilocular.	Weight about 15 lbs. Sac degenerate and ruptured during operation.	"	
42	Mrs. L.	Pepperell.	Dec. 20.	Drs. Heald, Fletcher, and Benoit.	43	about 6 in.	"	Multilocular.	Sac and contents degenerate. Sac torn in removal. Extensive pelvic and other adhesions, complicated with fibroid uterus. Death from intestinal obstruction.		Died 8th day.
43	Mrs. M.	Ipswich, N. H.	1888, Feb. 29.	Drs. Dearborn and Wilber	34	5 in.	Double.	Dermoid.	Weight of tumor 90 lbs. Temperature and pulse remained normal after operation. No adhesions.	Recov.	
45	Mrs. F.	Charlestown, Mass.	April 3.	Drs. Sawin, Hammond, and Frazer.	31	about 6 in.	"	Multilocular.	Weight 32 lbs. No adhesions.	"	
46	Mrs. W.	Charlestown, Mass.	May 10.	Drs. Sawin, Hammond, and Hanson.	54	7 in.	Single.	Parovarian.	Under broad ligament, behind peritoneum. Everywhere adherent. Eucleated. No pedicle. Weight 15 lbs.	"	
47	Mrs. G.	Draut.	May 24.	Drs. Dutton, Heald, Sleeper.	42	9 in.	Double.	Multilocular, nearly solid.	Weight about 25 lbs. No adhesions. No rise of temperature.	"	
50	Mrs. F.	Lowell.	July 5.	Drs. Chadbourne, Bell, Bradt, and Benoit.	32	4 in.	Single.	Multilocular.	Weight 30 lbs. No adhesions.	"	

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The cause of the septicæmia removed, she might rally and recover. The removal of the tumor was a very simple matter, and the entire operation was completed in twenty-two minutes.

The patient, however, continued to fail, and died two days after. The operation apparently neither retarded nor accelerated the fatal issue. Although the tumor, when removed, was a single cyst, it had evidently been multilocular. By degenerative changes the partition walls had become broken down, and the different cysts had coalesced.

The contents, about nine quarts in amount, had all the physical appearances of pus. Though no microscopical examination of the liquid was made to determine its character, still I believe it to

have been purulent. The general symptoms and condition of the patient were such as we would have expected had there been a large collection of pus in the pleural cavity or elsewhere; viz., chills, fever, hectic, and prostration. When we recall that the lining membrane of ovarian cysts is usually covered with pavement epithelium, and that it otherwise closely resembles serous membranes, and that the latter, when acutely inflamed, always pour out pus or sero-pus, I think we may reasonably conclude that an ovarian cyst may sometimes contain pus, as well as a pleural cavity, or the closed peritoneum of a man. In short, these are examples of the formation of pus without the admission of air.

Case 42. Mrs. L., *et.* 43. The patient had become very much enfeebled before the operation. Extensive degeneration of the cyst walls and contents had taken place, and had produced, as it always does, a marked depression of the general health. Extensive adhesions were found, especially within the pelvic cavity. The sac was torn in several places during its removal, and the case was still further complicated by a large amount of ascitic fluid and a fibroid uterus. The patient died on the eighth day, from intestinal obstruction. The cause of death was ascertained by a post-mortem.

Case 27. Before the operation, had frequent attacks of asthma and a moderate amount of albumen in the urine. Since that time the urine has become normal, and there has been no recurrence of the asthma. One year and one day from the date of the operation the patient gave birth to a child.

In Case No. 50, albumen was found in the urine, but since the removal of the tumor it has entirely disappeared.

Table II. contains five cases of hysterectomy, four for large uterine fibromata and one for carcinoma of the body of the uterus.

In the latter case I was compelled to treat the pedicle intraperitoneally. It could not be brought out at the lower angle of the wound. The patient did not completely rally from the shock of the operation, and died two days later. Whether any failure of the intraperitoneal ligatures contributed to the unfavorable result I do not know. Certainly no profuse hæmorrhage occurred. The generally enfeebled condition of the patient was sufficient to explain the failure of the operation.

In the four cases of hysterectomy for uterine fibroids, the pedicle was treated extraperitoneally. Dawson's clamp was used in three of them, and the rubber ligature in one.

Case 39. The fibroma extended nearly to the uniform cartilage, but had not perceptibly increased during the past two or three years. It gave the patient no trouble except by its weight and size.

TABLE II.—MISCELLANEOUS LAPAROTOMIES.

Number.	Name.	Residence.	Date of Operation.	Medical Attendant or Assistants.	Age.	Character of Operation,	for diseases which operation was made.	Remarks.	Recovered.	Disd.
29	Mrs. M.	Lowell.	1886. Nov. 16.	Drs. Bass, Chadbourne, and Parker.	43	Hysterectomy.	Uterine fibroid.	Tumor weighed about 18 lbs. Pedicle treated with Dawson's clamp and pins.	Recov.	
32	Mrs. H. Concord, N. H.		1887. Feb. 23.	Drs. Bass, Benoit, Bell, and Bradt.	69	Exploratory incision	Uterine fibroid.	Incision 12 in. Many adhesions ligated. Adhesions posteriorly and in pelvis prevented removal. Tumor has not grown since operation. Growing rapidly before.	Recov.	
33	Miss F. Peterboro, N. H.		March 30.	Drs. Cutter, Chase, Haig, Hodgdon, and Aldrich.	38	Hysterectomy.	Fibrocystic tumor of uterus.	Tumor weighed about 18 lbs. Pedicle brought out in Dawson's clamp. At post-mortem only cause of death extreme dilatation of stomach.		Died 5th day.
34	Mr. P.	Lowell.	April 1.	Drs. Chadbourne and Johnson.	26	Laparotomy.	Circumscribed peritoneal abscess.	Reported elsewhere.	Recov.	
35	Miss H.	Lowell.	May 14.	Drs. Huntoon, Huotress, Bell.	50	Hysterectomy.	Carcinoma of body of uterus.	Ascites; been tapped, patient very weak. Pedicle treated intraperitoneally.		Died 2nd day. Shock.
39	Mrs. B. Nashua, N. H.		Aug. 17.	Drs. Dearborn, Wilber, Currier.	41	Hysterectomy.	Uterine fibroid.	At time of operation obstruction of bowels. Peritonitis. Tumor was gangrenous. Weight about 20 lbs.		Died 2nd day.
41	Miss W.	Lowell.	Oct. 22.	Drs. Chadbourne, Huntress, Bell.	24 1/2 yrs.	Laparotomy.	Seropus in abdominal cavity.	At 2 years of age had empyema. Cured by incision. Six months later pus in abdominal cavity. Cavity irrigated. Now perfectly well.	Recov.	
44	Miss P.	Clifton.	1888. March 29.	Drs. Cushing, Plunkett, Parker, Gage.	39	Hysterectomy.	Uterine fibroid.	Weight about 8 lbs. Pedicle treated externally. Rubber ligature and pins.	Recov.	
48	Mrs. C. Cornish, Maine.		June 14.	Drs. Swasey, Chase, Wilsoo, and Norton.	54	Myotomy.	Myoma from broad lig.	Weight about 12 lbs. Ascites; tapped several times. Extremely feeble.		Died 4th day. Suppression of urine.
49	Mrs. S.	Lowell.	June 20.	Drs. Smith, Cushing, Parker.	29	Myotomy.	Myoma.	Tumor weighed about 10 lbs., looked like a myoma. Microscope showed malignancy.		Died 4th day.

Therefore no operative interference had been advised. Suddenly, however, a violent peritonitis with great distention and obstruction of the bowels developed. Directly extreme prostration of the patient left no alternative except an immediate removal of the tumor. This was done three days after the advent of peritonitis, but still too late to save her life.

There was an extensive purulent inflammation of the peritoneum. Fully one-half of the fibroid, which had grown without the formation of any pedicle, directly from the body of the uterus, had become gangrenous. I am entirely at a loss to explain this sudden necrotic change in the tumor. Necrosis of a part or the whole of the tissues composing an ovarian cystoma often occurs, and is an impending danger during the entire period of their development.

Yet I had never before supposed that subperitoneal fibroids were in the least liable to an accident of this kind.

The fact, however, that they may become the seat of extensive necrosis, and thus fatal to the patient, is of some weight in determining the advisability of their removal.

No. 41. This was a case of abdominal section in a child thirty months old for purulent effusion within the peritoneum. Six months before, she had empyema, which was treated by free incision and drainage. Her recovery seemed complete, and she was strong and well. But in September she again began to lose flesh and color. The abdomen became distended and gave distinct fluctuation. October 22nd, an incision three inches long was made, and a considerable quantity of serum mingled with pus escaped. The abdominal cavity was washed out with many quarts of warm water, and the incision entirely closed. I felt that it would be safer in this instance to pursue this course, rather than use a drainage-tube. For if the liquid should reaccumulate, the cavity could again be opened. Fortunately, there has been no return of the difficulty, and the child is now in perfect health. I have found several cases of empyema reported, in which a secondary purulent effusion has occurred within the peritoneum. In some of them no connection between the pleural and peritoneal cavities could be found.

PELVIC HEMATOCELE:

OPERATION BY LAPAROTOMY; SUTURE OF CYST TO ABDOMINAL WOUND; DRAINAGE; RECOVERY.¹

BY CHARLES B. PORTER, M. D.,

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This case is presented as a contribution to the surgical literature on the treatment of large pelvic hæmatocele by abdominal incision and drainage. T— M—, aged 32, unmarried, entered the Massachusetts General Hospital, January 20th, 1887. Family history negative. Catamenia every four weeks; flow normal in amount, lasting four days, accompanied by considerable pain on the first and fourth, with vomiting. Last unwell, two weeks previous to entrance to hospital. No special

sickness. For the past few weeks has been losing color, appetite, and strength. Complains of dyspnoea on exertion; bowels perfectly regular up to date. Felt as well as usual and worked all day yesterday. At 4.30 A. M. awakened from sound sleep by sudden, sharp abdominal pain, which was at first located in left iliac fossa, but soon shifted to the right side and back. At the same time obstinate bilious vomiting. Had small movement from bowels two hours subsequent to the attack. This morning swelling appeared in the right iliac region, and has since been growing gradually. Pain steady up to 12 M., requiring several subcutaneous injections of morphine. Since that time pain present in paroxysms, and there has been but little vomiting. No chill. Patient passed urine at 6 A. M. Since then required catheter twice.

Examination: Patient lies without difficulty, with legs extended, is anæmic, poorly nourished, anxious expression, tongue moist with slight coat. Pulse 68, fairly strong. Heart: soft systolic souffle in pulmonic area. Abdomen: a circumscribed swelling, dull on percussion, markedly tender, in right iliac fossa, extending to pubes; abdomen elsewhere soft, resonant, not tender. Per vaginam: cervix movable, pointing downward and backward, not continuous, with swelling felt externally.

Per rectum: marked tenderness in front and to the right, tumor felt anteriorly like cervix, extending not quite to middle line. Urine: normally acid, s. g. 1029. No albumen; sediment slight.

January 20th. Milk and lime water, and brandy, ordered alternately every three hours. Poultries to abdomen; deodorized tincture of opium, minims 15 to 20 p. r. n.

During afternoon of day of entrance she vomited everything taken into stomach; morphine and poultries gave much relief.

On the 21st of January, pain was almost entirely controlled by numerous subcutaneous injections of morphine. Required to be catheterized every six hours; had chill at 2 P. M. No vomiting.

Examination of the tumor showed increased size, extending two inches to the left of the middle line. No fluctuation, marked tenderness over whole of tumor. Per vaginam: general sense of pressure downwards; body of uterus pushed over forward and to the left; temperature 99°, pulse fairly strong.

Peptonized milk was ordered, four ounces every hour, and enemata of the same every six hours. No marked change on the 22nd or 23rd, although morphine was required. No vomiting, but distinct fluctuation felt over the tumor, which remained of about the same size. (The foregoing is an abstract from the medical records of the hospital.)

On the 24th of January, the third day after entrance, I was asked to see the case in consultation, and advised transference to the surgical ward for immediate operation.

Operation under most careful antiseptic precautions. Ether given; an incision made in the right iliac region along the inner half of Poupart's ligament and about an inch above it. On opening the peritoneum there came at once into view a tumor evidently cystic, its walls being very dark-colored and glistening. The cyst did not appear to be adherent, but its relations were not thoroughly

¹ Read at the meeting of the Suffolk District Medical Society, October 27, 1888.

explored, for fear of rupture of its walls, which appeared exceedingly tense. Using fine, round needles, and silk sutures, the cyst wall was stitched to the anterior parietal peritoneum in such a manner that the presenting portion of the cyst, about the size of a half dollar, was entirely shut off from the general peritoneal cavity. In this surface a free opening was made, and about three pints of dark, bloody fluid escaped. There were no clots. Exploration of the cyst discovered several flesh-like projections into its cavity, feeling like clots; these were not disturbed. The edges of the wound of the cyst were stitched to the abdominal wound, and a large drainage-tube, reaching to the bottom of the cyst, was fastened in. The cavity was then thoroughly washed out with a hot solution of sulpho-naphthol.

The night following the operation there was slight pain which was relieved by one-sixth grain of morphine. On the following morning patient was comfortable and the dressings were changed.

During the next three days the discharge was discolored; on the fourth day after the operation there was no blood in the discharge. There was some pus from the granulations of the wound, and all stitches were removed.

The subsequent progress of the case was without interruption and towards recovery, and ten weeks from the date of the operation she was discharged from the hospital well.

Dr. Whitney's report of the examination of fluid is as follows:—

Thin, bloody fluid, sp. gr. 1007, highly albuminous. No formed elements except blood corpuscles. Blood in large amount but did not coagulate. Probably ascitic fluid with blood.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M. D.

PATHOGENESIS OF SYMPATHETIC OPHTHALMIA.

RANDOLPH¹ in an article which is prefaced by the consideration of the different theories of the pathogenesis of sympathetic ophthalmia, reports a series, or rather two series, of experiments intended as control experiments upon those of Deutschmann.² These experiments were prefaced by experiments tending to show that aseptic wounds of the eye did not progress to sympathetic ophthalmia. These trials were made upon dogs as follows:—

After sterilizing a cataract knife an incision was made at the upper border of the cornea, about half an inch below its junction with the sclera; the knife was then passed into the iris and cut upward entirely through the corneo-scleral junction as far as the ciliary region, and in several instances into the latter.

The cornea healed up promptly, so also the iris; the media always remained clear and not a symptom of cyclitis followed. For thirty-six hours after the operation there was slight photophobia and lachrymation, but these soon passed away. The dogs were kept under observation for four or five weeks and examined at different times ophthalmoscopically. The fundus was in every case normal, and further than the fact that the iris was often pro-

lapsed and healed into the wound, no pathological change was found.

Randolph's first series of experiments were made upon dogs, as he supposed that they would be less likely to succumb to the effects of a general infection, and in consequence would enable him to follow out more accurately the theory of Deutschmann. His method was the same as that employed by Deutschmann, and consisted in injecting a suspension of staphylococcus aureus into the corpus vitreum. The instruments employed were thoroughly sterilized previous to the operation. About two minims of the inoculation fluid was injected. After fixing the ball of the eye with forceps, the eye was pulled forward and a hypodermic needle was passed in half an inch posterior to the ciliary region. The organisms were obtained from a furuncle and were identical with the staphylococcus aureus of Rosenbach. Fifteen experiments were made in all. In nine of the cases the eyeball ruptured and the contents were disgorged. The other six cases had cyclitis, choroido-iritis, ending with phthisis bulbi. The trouble remained local. All the cases were examined every day with the ophthalmoscope. Never was anything unusual observed about the second eye, except that in two cases there was noticed, twenty-four hours after inoculation, an enlarged condition of the retinal vessels, associated with a general redness of the papilla. This disappeared at the end of three or four days. The observer considered it a reflex engorgement of the vessels, due, without a doubt, to the violent inflammation going on in the other eye, and that there is no reason to believe that it could ever have developed into a condition similar to that of the first eye. A most thorough examination of the optic nerve and of the chiasm failed to find any organisms.

Prof. Deutschmann's experiments were made upon rabbits; and thinking that as his experiments were made upon dogs, and that this difference might impair their value as control experiments, our author determined to repeat them upon rabbits.

In this new series of experiments the inoculation material was obtained as follows. A case of panophthalmitis was selected which had resulted from a piece of iron which flew into the patient's eye while working on the railroad. A few drops of pus were obtained from this case, and from them were made plate cultures after Koch's method, and finally a pure culture identical in every respect with the staphylococcus aureus of Rosenbach was obtained. The technique was the same as in the previous series of experiments. Fifteen rabbits were thus inoculated. One of these rabbits died forty-eight hours after inoculation, with all the symptoms of a general infection; and another at the end of ten days after inoculation. The latter gave evidences of brain trouble before death in spasmodic movements of the neck and inability to move without falling forward. Both animals were very young, hardly more than a month old, and much too young for such experiments. The other thirteen cases were killed at periods from fourteen days to two months after inoculation. Ophthalmoscopic examination was made every day for the first three weeks; and afterward never were more

¹ Archives of Ophthalmology, June, 1888.

² See these papers, vol. 116, p. 176; vol. 115, p. 521.

than three days allowed to pass without such an examination. Never did the fellow eye show the slightest symptom of sympathy. The fundus remained unchanged: perfectly normal. Every one of the cases suffered from irido-cyclitis in its most typical form. Microscopic examination of the nerves was made in both these series; and our author states that in the first five experiments on dogs he was perfectly convinced that he had a neuritis extending from the affected eye around to the fellow eye by the way of the chiasm.

He submitted the sections to skilled microscopists, and they agreed with him. The suggestion was made, though, that he kill a dog and study the normal parts. He did so, and to his surprise found that the normal optic nerve of the dog was most rich in nuclei—nuclei which gave to the nerve the appearance of dense, round-cell infiltration. He found also that these nuclei decreased as the chiasm was approached from either eye, and, as this is the appearance of the cell infiltration described by Deutschmann, hints that that observer might have mistaken the normal condition of the nerve for a neuritis descendens and ascendens. Randolph also draws attention to the fact that all of Deutschmann's cases, in which there were changes of the fundus, papillitis, retinitis, and choroiditis, died of a general infection, and says that in such cases the kidneys and heart and entire circulation are alive with pus cocci, and consequently it is not strange the fundus should be the seat of inflammatory changes, especially when we consider how very liable it is to participate in vital changes in the general system.

PATHOLOGY OF DIABETIC EYES.

Deutschmann³ describes the appearances found post-mortem in the eyes of four individuals who died while suffering from diabetes mellitus. Micro-organisms were searched for in vain in all four cases. The most remarkable feature in all four cases was the proliferation and oedematous swelling of the layer of the pigment cells of the posterior surface of the iris. A similar observation has been made by Becker, and also by Kamocki at the Heidelberg Congress in 1886. In addition to this process, which extended in a lesser degree to the pigment of the epithelium of the retina, the atrophy of the iris root, with increase of its nuclei and connective tissue, and the escape of the pigment into the anterior chamber, were the important pathological appearances.

From these observations Deutschmann concludes that either a long-continued hyperemia, or else actual inflammation of the iris must have existed, with an accompanying proliferation of its layer of pigment cells. This must have been an altogether insidious process, which led to connective-tissue hypertrophy, and consecutive atrophy without clinical symptoms. The condition of the retina lends probability to this hypothesis. The precise cause of this process is uncertain, and Deutschmann contents himself with asserting that it stands in some as yet unknown connection with the diabetic dyscrasia. He calls attention to the tendency which the epithelial structures exhibit towards necrosis in diabetes mellitus, and points out the

analogy between the changes which occur in the lens and in the cells of the pigment layer of the iris. All the lenses exhibited the peculiarities described by Becker, in the reaction of the nuclei of the cells to staining fluids, and the molecular disintegration of the nuclei themselves. Every stage was represented, from healthy, normally stained nuclei to complete disorganization; the latter being the commonest phenomenon. From this Deutschmann concludes that the lens (a purely epithelial structure) owes its opacity in diabetes to the same necrotic tendency that is shown by all the epithelial tissues in this dyscrasia. So long as the epithelium which constitutes the lens is alive and healthy, no pathological process of diffusion takes place, no matter though both aqueous and vitreous contain sugar; but when the necrosis of the lenticular cells begins, abnormal diffusion currents are set up (just as in the cadaver), which produce opacity and swelling of the lens.

PHYSIOLOGICAL AND PATHOLOGICAL CONDITIONS OF THE PUPIL.

Jessop⁴ has published an admirable series of lectures upon the physiological and pathological conditions of the pupil and accommodation, of which the substance is that the intra-ocular muscles are two circularly disposed muscles—the pupillary and ciliary, and in mammals consist of unstriated muscular fibre. They are supplied by two antagonistic sets of nerves—the short and long ciliary. The short ciliary induce on stimulation extreme contraction of both muscles, and the long ciliary produce the opposite effect, namely, relaxation of the muscles. The fibres of the short ciliary nerves can be traced to different collections of cells as centres, thus separating the action of the pupillary from ciliary muscle. In the same way the long ciliary nerves are connected with different centres; by the visceral fibres of the fifth they are connected with a centre in the medulla for the ciliary muscle, and by the cervical splanchnics and the second dorsal nerve with the spinal cord and medulla for the pupillary muscle. The actions of the pupillary muscle are to contract, to dilate, and consensual light reflex, and in association with accommodation, and besides these to dilate to sensory reflex; the actions of the ciliary muscle are to contract on accommodation, and to dilate on relaxation of accommodation. Thus the ciliary muscle acts normally in association with the pupillary, and the pupillary may either act by itself, or in association with the ciliary according to the stimulus provoking the action.

Pathological bilateral mydriasis may be present as a symptom in typhoid fever, aortic insufficiency, commencing insanity, meningitis (after initial contraction) cerebellar disease, hydrocephalus, helminthiasis, epilepsy (tonic stage), migraine, middle meningeal hemorrhage. The chief diseases characterized by bilateral equal myosis are hemorrhage into upper part of pons, general paralysis of the insane, meningitis, anaemia of the brain, paralysis agitans, venous obstruction as in mitral regurgitancy, pneumonia, typhus, variola, epilepsy (sometimes at commencement), anterior poliomyelitis.

³ Von Graefe's Archiv für Ophth., xxxii. 2, p. 228; Ophthal. Review, September, 1889.

⁴ Ophthalmic Review, July, 1888.

Unequal pupils are often found in cases of apoplexy, acute meningitis, chronic and acute alcoholism, general paralysis of the insane, locomotor ataxia.

Hippus, a condition of the iris characterized by choreic spasms producing rapid contraction and dilatation of the pupil, is seen in cases of epilepsy, mania, general paralysis of the insane, the commencement of sympathetic ocular disease, and cerebellar tumor. These movements are often associated with nystagmus, especially of central origin.

Drugs influencing the pupil when taken internally, but not acting locally, are morphia, strychnia, curare, quinine.

CONCOMITANT CONVERGENT STRABISMUS.

Laug and Barrett⁵ have continued their investigations of concomitant convergent strabismus, and state that, in regard to the possibility of alteration of vision in the squinting eye, in fourteen cases they obtained the distant vision in the squinting eye after accurately correcting the refraction, then prescribed the fully correcting glasses, which were worn by the patients for months or years. The distant vision was then tested again, with the following results. Of the fourteen cases, in eleven the constant use of glasses failed to effect any improvement whatsoever in persons varying from three months to five years, although in these eleven cases the squint was cured in eight cases, and improved in the other three, and although the resulting vision was binocular in two of the cured cases; in the other three cases, including one case of alternating strabismus with one amblyopic eye, some improvement of distant vision resulted. Our authors made careful inquiry for the existence of strabismus in the brothers or sisters of the squinting patient in eighty-seven cases. It was found that in sixty-two cases the patient was the only member of the family affected, the average number of persons in each family being five. In twenty-five cases more than one member was affected. In these cases the average number of persons in each family was six. Concerning the existence of strabismus in the parents or parents' families, investigation was made in seventy-seven cases with the following result:—

In fifty-five (71 per cent.) of the cases a negative reply was returned. In twenty-two (29 per cent.) a definite affirmative reply was obtained.

Our authors believe in the possibility of the transmission of squint, and cite the following case:—

A man who squinted married a woman who did not squint, and had a large family of children, of whom one, a daughter, who squinted, married a man who squinted; they had seven children, two of whom had strabismus. Of the children of the original marriage, a daughter, who did not squint, married a man who did not; they had ten children, of whom three had strabismus; one of these, a daughter, who squinted, married a man who did not, and they had two children, both of whom had strabismus. The age at which patients began to squint was investigated in one hundred and ninety-five cases. The average age at which it began was

3.4 years. In thirty-six cases it appeared in the first year of life, in thirty-four cases it appeared later than the fifth year, and in three cases beyond the tenth year. Of these thirty-four cases no less than ten were cases of alternating strabismus, in which vision in each eye was excellent. It is stated in conclusion that in a fair number of such cases of late origin, the extinction of vision by nebula seems to cause the strabismus to appear. With regard to the influence of atropine on convergent strabismus, the angle of convergence was measured before and during complete mydriasis and paresis of accommodation, with the following result. Of thirty-eight such cases the angle remained unaltered in eleven, was increased in eleven, and diminished in sixteen.

In order to ascertain whether the effect of atropine is of any service in prognosticating the effect of the constant use of glasses, a number of cases were noted. Of four cases in which atropine increased the strabismus, in three the use of glasses failed to produce any improvement. In the fourth case the angle was reduced from 30° to 8° whilst the glasses were worn, and to 15° when they were removed. Of six cases in which the atropine produced no alteration, the use of glasses effected material improvement in only three. In these the average improvement was 15° whilst the glasses were worn, and 12° when they were removed. Of five cases in which atropine improved the strabismus, the use of glasses produced material improvement in every case. The average improvement was 16° whilst the glasses were worn, and 16° degrees when they were removed.

DIFFERENTIAL DIAGNOSIS OF THE ELEVATORS AND DEPRESSORS OF THE EYE.

Mauthner,⁶ in an elaborate paper on paresis of the elevator and depressor muscles of the eye, gives the following differential diagnosis of the paralyses of the four recti and the four obliqui concerned in elevating and depressing the globes. If there is diplopia of the upper half of the field, single vision in the lower half of the field, an elevator is paretic. To determine which muscle is affected, find the place of the greatest vertical distance between the double images, then—

If the greatest distance is to the left and above—

1. Image of the left eye higher: rect. sup. sinist.
2. Image of the right eye higher: obliq. inf. dexter.

If the greatest distance is to the right and above—

1. Image of the right eye higher: rect. sup. dexter.
2. Image of the left eye higher: obliq. inf. sinist.

If there is diplopia in the lower half of the field, single vision in the upper, a depressor is paretic. To determine which muscle is affected, find the greatest vertical distance between the double images, then—

If greatest distance is to the left and below—

1. Image of left eye lower: rect. inf. sinist.
2. Image of right eye lower: obliq. sup. dexter.

If greatest distance to right and below.

1. Image of right eye lower: rect. inf. dexter.
2. Image of left eye lower: obliq. sup. sinist.

⁵ The Royal London Ophthalmic Hospital Reports, July, 1888.

⁶ Wien. Med. Wochenschrift, Nos. 24, 25, 1888.

THE LIGHT PERCIPIENT ORGANS.

Gunn,³ in an elaborate article on the nature of light percipient organs, and of light and color perception, reaches the following conclusions.

1. That all light percipient cells are modifications of epithelial cells, or developed from the same embryonic layer which forms them.

2. The ends of these cells corresponding to the cuticle have generally cuticular structures formed in the shape of rods.

3. That the opposite ends of these cells are either directly continued as nerve fibres or are connected with ganglion cells, and ultimately with nerve-fibres.

4. That pigment is practically always present, either in the light percipient cells or in close connection with them.

5. That all forms of vegetable and animal protoplasm sensitive to light are acted on by the shorter waves corresponding to the violet end of the spectrum, and that the same holds good in a marked degree in the case of all those light percipient cells as yet known to act to light.

6. That the property of phototaxis is universally influential in the manner in which these cells arrange themselves, and in the direction in which they contract upon exposure, *i.e.*, parallel to the incident light in both cases.

7. That the pigment cells have evidently the property of secreting chemical fluids according to their exposure to light and shade, and that the pigment contained in them is doubtless of service, as being a light absorbent, and thus aiding a rapid transformation of light energy into protoplasmic action.

8. That the result of the action of the pigment cells on the segments of the light percipient cells may be demonstrated by the electrical current produced.

9. That seemingly the strength of this current depends upon two factors, *viz.*, 1. the activity developed in the pigment cell under the action of light, and 2, the depth to which the cone is imbedded in it, *i.e.*, the extent of the surface exposed to its action.

10. That in the case of the vertebrates at least, this resultant current is greatest on exposure to yellow light, *i.e.*, to visible waves of medium length and refrangibility.

11. That the differences in the action thus produced, and consequently in the nerve current transmitted to the visual centre, are associated in our minds with sensations of differences of color.

12. That as regards the stationary rods the action induced will probably depend upon the amount of destruction of retinal purple, and the consequent demand upon the pigment cell. As this action is known to depend more on intensity or wave height than on wave length, it is improbable that the rods have any higher function than that of transmitting impressions which will be appreciated in our conscious centres as variations in light intensity.

13. The function of the retinal purple is probably mainly to protect the pigment epithelium from too great exposure, and thus to modify its secretion and its action on the end-organs imbedded in it.

Clinical Memoranda.

SPASM OF THE BRONCHIAL TUBES,

LIKE SPASMODIC ASTHMA, EXCITED BY A FOREIGN BODY INHALED INTO THE TRACHEA DURING AN EPILEPTIC SEIZURE.

BY PROF. J. M. DACOSTA, M. D., PHILADELPHIA.

[At the Pennsylvania Hospital, Prof. J. M. DaCosta made the following clinical remarks, at his lecture on December 1st, upon a case of spasm of the bronchial tubes, simulating a severe attack of spasmodic asthma following an epileptic fit, during which a piece of apple was inhaled into the air-passages.]

This case is peculiar, in my experience unique, in character. This boy, about sixteen years of age, was brought to the hospital five days ago by the police patrol, who found him lying on the street in an epileptic fit. Although perfectly conscious when admitted, he was suffering from great difficulty of respiration. He answered questions rationally, but with effort, owing to want of breath. We learned, subsequently, that the patient had received an injury by being struck on the left side of his head by a brick, some six years ago. About two years later convulsions occurred, which were epileptic in character, and gradually became frequent. He is certain that the epileptic attacks did not begin to appear until two years after he was struck upon his head. In spite of medical treatment, the convulsions persisted, and finally he sought surgical advice. Two years ago Dr. John Ashhurst trephined him at a point which can still be recognized by a depression. It is on a line with the border of the left ear, about the centre of the parietal bone. He says that at first there was no improvement from the operation, but that for the last six months he has had much relief; the convulsions now recur only about once in three weeks, though he takes no medicine; before the operation he had them sometimes twice a day. It is a fair inference that he was benefited by the operation, although improvement was not evident until eighteen months subsequent to its performance.

The special point to which I wish to call your attention is this: on the 26th of November, the day on which he was brought to the hospital, he had a fit and fell senseless upon the street, and as he was recovering from the attack he experienced great difficulty in breathing. When he was brought to the hospital he was suffering intensely; his respiration was labored and noisy like that of asthma, and his features showed that he had great respiratory distress. He was immediately seen by one of my colleagues, who happened to be present, and who kindly prescribed for him. Upon examining the lungs, it was found that the breathing was noisy; the inspiratory murmur weak and the expiratory exaggerated and prolonged. It was especially on the left side that the inspiratory sound was feeble; the percussion resonance was everywhere good. He was distressed and struggling for air, and in fact presented the symptoms and physical signs usually found in a case of spasmodic asthma. The heart was accelerated in its action and weak, but gave no evidence of organic disease. He coughed but occa-

sionally, and he had no fits of coughing or of suffocation. He was ordered to take tincture of belladonna in ten-drop doses, with a little ammonia, and subsequently smaller doses of belladonna with digitalis. His chest was dry-cupped, and he was placed in bed with his head and shoulders somewhat elevated.

These prescriptions, which were based on the thought of the relief of spasm, were followed by great benefit: his breathing became better and easier and he went to sleep. It looked as if the antispasmodics had done their work and that the attack had yielded; certain it is that he had no fits of suffocation or alteration of voice, but about twelve hours after he came in, in the middle of the night, he had a terrible attack of dyspnoea lasting about fifteen minutes, finally terminating, during a paroxysm of coughing, by the expulsion of this piece of apple, while the resident physician was preparing to make a laryngological examination. (The specimen shown was an irregularly shaped piece of apple, slightly smaller than it was, owing to the effects of the alcohol in which it had been placed for preservation; about seven-eighths of an inch in length and about one-half by five-eighths in cross section.) We then got the strange history that when the epileptic fit seized him he was eating an apple. During the convulsions this piece was drawn into the windpipe, and, owing to the insensibility of the larynx during the attack, it passed into the trachea down to its bifurcation and obstructed the left bronchus more than the right. Since the expulsion of the foreign body he has had no sign of asthma, and seems well, but he was allowed the use of bromide in order to prevent the recurrence of an epileptic fit.

There are several points of clinical interest in this case. One is the way in which ordinary spasmodic asthma was simulated by the symptoms produced by a foreign body in the air-passages. What was curious was that he had also the physical signs of asthma: noisy, labored respiration, intense dyspnoea, weak inspiration, prolonged expiration, with clearness upon percussion. With the exception of râles he had the signs which we would expect to meet with in a case of asthma. If you ask, "To what were these symptoms due?" we must answer, "To a condition of spasm of the bronchial tubes caused by this foreign body." Therefore, when I say that this is like a case of spasmodic asthma, I may go even further and say that it really was a case of asthma provoked by the presence in the bronchus of this piece of apple. There is almost identity of pathological condition; but instead of the irritant being of internal origin it was this foreign body.

From the liberal use of belladonna and free cupping of the chest, there resulted evident relief of the symptoms; the spasm evoked by the foreign body yielded, the patient breathed more easily, and even fell asleep. Please note, therefore, that the means employed largely removed the irritation, certainly the spasm, although the irritant remained.

Lastly, I may call your attention to the fact that the foreign body had passed the trachea, because if it had lodged in the windpipe it would have given rise to greater difficulty in breathing than even existed, to fits of coughing and strangling, and to impairment of voice. His utterance was distinct,

though somewhat feeble on account of his respiratory distress. I regret that no laryngoscopic examination was made at first. He was in such distress in bed that it was not attempted, and when about being made he expelled the apple. At present his breathing is natural. Upon auscultation, the respiratory sounds are heard on both the right and left sides, the expiration is neither harsh nor prolonged. The breath-sounds on inspiration are perhaps a little less distinct at the lower part of the left lung than at a corresponding point upon the opposite side, but the percussion note is clear; there is nothing abnormal. The heart, which was feeble, has regained its tone.

A CASE OF INTESTINAL OBSTRUCTION:

LAPAROTOMY; DEATH IN THREE HOURS; AUTOPTY.¹

By MAURICE H. RICHARDSON,

Surgeon to Massachusetts General Hospital.

The following case occurred in the practice of Dr. H. E. Marion, of Brighton, who has kindly sent me the following history:—

"L. H. A., 57 years of age, has been employed in the silk department of C. F. Hovey's for past twenty-five years. Previous history very good.

June 30th, 1888, he called with a friend at my office, giving the following history:—

On the 28th he had a slight chill; since then he has felt uncomfortable; sensation of fullness as if there were a twist (these were his own words) in the bowels. A cup of tea or a very little food made him feel full and uncomfortable, as if he had partaken of a large meal. Was obliged to unbutton his waistband on account of the fullness. He ascribes these uncomfortable symptoms to having drank in rapid succession several glasses of ice water during one of the recent hot days.

Pulse 100, temperature 99.4 degrees. Abdomen somewhat tympanitic and slightly tender on pressure in both iliac and hypogastric regions. He was advised to confine himself to liquid diet in small quantities, and often; to remain quiet during the following day (Sunday), and take elixir pepsin, strychnine, and bismuth, and let me know if he was not quite relieved.

I remarked to the friend that I saw nothing serious in his symptoms except the frequent pulse, and I hoped he would let me know in the morning if he did not feel much better. They spent a half hour socially with myself and wife, and he seemed in his usual good spirits.

July 2nd, 5 A.M., I found him in a good deal of pain, which was soon relieved by hot fomentations and one-fourth grain morphia. The day before (July 1) he felt so well that, contrary to orders, on the invitation of a friend, he took a ride towards evening, and on returning felt as if he was going to have a chill, which was prevented by going directly to bed. The night was passed tossing and turning, with more or less pain in bowels. Three liquid stools. Pulse 90, temperature 97.4 degrees. Abdomen but slightly tympanitic, with less resonance in left inguinal region. Urine, specific gravity 1030, acid. No albumen and no sugar. He spent the afternoon reading, and in the evening expressed

¹ Read at the meeting of the Suffolk District Medical Society, Oct. 27, 1888.

himself as being very much better, so much so that I jokingly remarked, as I left him, that I guessed he had cheated us out of a Masonic funeral.

July 3rd, 2 A.M. Has been in a good deal of pain since midnight. Took morphia at 12.30 and just before I came in, each time one-fourth grain, with no relief. Pulse 90, temperature 96 degrees. Hot fomentations, enema of hot water, and repeat morphia. Being obliged to go in town, I stopped on my way and asked my brother to run in and see him at eleven o'clock and give a hypodermic of morphia if he was not already relieved. My brother found him in collapse, and remained with him until I returned 12.30. By hypodermic of morphia and brandy, with hot bottles, reaction was well established when I returned. At two o'clock P.M. there was no special change in symptoms, except that the dulness in the left inguinal region was more marked, and a tumor could be made out extending from iliac crest for about four inches towards median line. Pulse 120 to 130.

Dr. E. N. Whittier saw him at eight o'clock in the evening, confirmed the physical signs as above, but hoped some of it might be due to cellular infiltration. Obstruction of the bowels was evidently the cause of it. On account of bad pulse, etc., it was thought best to use stimulants freely and watch the patient a little longer. During the following day, July 4th, he seemed more comfortable. During the night of July 4th he began to vomit. Physical signs had remained unchanged, and he had had no stool.

Early in the morning of July 5th I telephoned for Drs. Richardson and Cabot to come out prepared to perform laparotomy. Drs. Whittier and O. H. Marion were also present at the consultation. All agreed that the only chance lay in making an exploratory incision. This was explained to the patient, with the gravity of the case. He accepted the chances with, in his own words, 'Anything you say, doctor,' made his will, and gave himself up to the operation, from which he never fully rallied."

I was called to see this gentleman on the morning of July 5th, 1888, in company with Drs. Cabot and Whittier. The abdomen was a good deal distended, and everywhere tympanitic except to the left of the linea semilunaris of the left side, where it was somewhat dull. There was a distinct resistance in that region, almost precisely like that found in the examination of the case of volvulus reported by Dr. Warren (see *Boston Medical and Surgical Journal*, Oct. 18th, p. 380).

The resemblance was so strong between these two cases that I suggested volvulus as a probable explanation of the symptoms. Though the general condition of the patient was bad, and the prognosis very unfavorable, it was the unanimous opinion that laparotomy afforded the only chance for relief.

An incision of sufficient length was made in the left linea semilunaris, its centre being about opposite the umbilicus. On entering the abdominal cavity, a coil of dark purple intestine presented itself, so tense and distended as to feel hard and resisting, and evidently the cause of the diminished resonance and increased resistance over that region.

It seemed to Dr. Cabot and myself that this por-

tion of gut, about twelve inches in length, was distinctly twisted, and that this was the cause of the stagnation of circulation. The blood-supply had been cut off so long, from this or other causes, that there was a marked fecal and gangrenous odor to the whole.

The coil was next untwisted, and the abdominal cavity closed with a good deal of difficulty over the distended intestines.

The patient rallied somewhat from the operation, but died a few hours later.

At the autopsy, performed by Dr. Marion and myself, in addition to the strangulated condition of the bowel already referred to, the mesenteric vein was found to be filled with thrombus. The whole mass of intestines was taken to Dr. Fitz, who reported that the mesenteric vein for that portion of the intestine was filled with thrombus as far as the liver, and that it was impossible to say whether the twist caused the thrombosis or whether it was a case of simple thrombosis of the vein antecedent to the twisted condition of the bowel.

Drs. Cabot and Marion, as well as myself, who saw the condition at the operation, thought it unmistakable that there was a distinct twist. If there was none, and the whole trouble was caused by thrombosis, the case is interesting from the fact that symptoms of intestinal obstruction demanding laparotomy were or may be due to mesenteric thrombosis.

It is important in such cases to explore as early as possible, not only to relieve the condition of obstruction, but also to prevent gangrene of the affected part.

In case the bowel is gangrenous, the question arises between excision and suture, and the formation of an artificial anus. Secondary suture after artificial anus has thus far been more successful than immediate suture with return of the bowel to the abdominal cavity. In case, however, the strength of the patient is good, I believe it will be found to be better surgery to perform primary resection and suture than to do the palliative operation. I believe it to be true that the danger of the primary and single operation will not be as great as the sum of the dangers of artificial anus and secondary suture.

A CASE OF COMPOUND COMMINUTED FRACTURE OF THE SKULL.¹

BY F. B. HARRINGTON, M. D.

APRIL 10, 1888, H. W., twenty-nine years old, a brakeman, was struck by an overhead bridge. He was seen to fall from the car, and was found in a stupid and dazed condition, but not unconscious. He was brought to the Massachusetts General Hospital, where I saw him. There was a small transverse wound, half an inch long, just above the right superciliary ridge. The soft parts of the forehead and the eyelids were much swollen, so that no depression of the bone could be made out. There was crepitus over a considerable area, as if the bones were extensively comminuted.

The patient was dull, but answered questions coherently. He complained of severe pain in the

¹ Read at the meeting of the Suffolk District Medical Society, October 27, 1888.

head. The pupils could not be seen because of the swelling of the lids. In an hour he had become somewhat more stupid, and there were occasional twitchings of the left side of the body.

The head was carefully shaved and scrubbed with ether and with corrosive sublimate solution. A transverse incision four inches long was made. On coming down to the surface of the bone it was found to be extensively comminuted. The fragments were in irregular positions—some depressed, others elevated.

It became necessary to extend the incision at right angles to the original incision. A considerable amount of the frontal bone was removed, including both frontal sinuses and the orbital ridge, with about half an inch of the orbital plate on the left side. Some of these pieces were overlapped by others, and more or less depressed. At one point the dura was perforated by a fragment, which, pushing through it, pressed open the cortex. There was some hemorrhage from this wound in the dura, which was controlled by a catgut ligature. The extremities of the incision were brought together by sutures, but the greater part of the wound was left open, and packed with iodoform gauze.

The patient rallied slowly from the ether, and remained in an apparently comatose state for several hours. There was no return of the muscular twitchings, but he became violently delirious toward evening. On the following day he was better, but restless and delirious. The wound was dressed and was found perfectly healthy. In a few days there was some delirium. The wound healed rapidly. Ten days after the accident the patient had become quite rational, and gave a correct account of the accident, but was somewhat childish and inclined to somnolence. He continued to improve rapidly, and on June 2nd the wound was entirely closed except a small granulating spot.

The hospital record of June 13th says: "No head symptoms whatever. Declares himself to feel as well as ever. Wound entirely healed. Extreme depression in the frontal region. The cicatrix pulsates slightly. Discharged."

There are several points of interest about this case.

First. The retention of consciousness after so severe an injury. Apparently there was no time at which the patient lost consciousness until the ether was administered.

This illustrates very forcibly the importance of not attempting to measure the extent and degree of a head injury by the subjective symptoms.

A second point of interest is the irregularity of position of the comminuted fragments. It seems probable that, from the number and position of the fragments, necrosis of some of them must have occurred, even if there had been no sloughing and suppuration of the soft parts.

Moreover, it seems probable that if the fragments had not been removed, and the bleeding from the wounded dura controlled, there would have been fatal pressure from blood-clot.

If none of these had happened, the depressed fragments would certainly have produced subacute brain irritation, with its attendant miseries.

The lack of symptoms of paralysis was due, I think, to the fact that the motor area of the cortex was not injured or pressed up. It seems probable

that the delirium which followed etherization was due, not to the operation, but to the concussion taking place at the time of injury.

Such an amount of the skull might be removed by trephining the uninjured bone, as in case of a brain tumor, but it is rare that so extensive a comminution of the bone by injury is followed by recovery.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT.

STATED meeting at 19 Boylston Place, Saturday, October 27, 1888.

The President, DR. JOHN HOMANS, was in the chair.

A paper was read by DR. C. W. TOWNSEND ON

ACUTE LOBAR PNEUMONIA IN CHILDREN.

DR. FRANCIS MINOT said there were two points in Dr. Townsend's interesting paper to which he wished to allude. First, in connection with the etiology of pneumonia, it was surprising how often its infectious origin could, one might almost say, be demonstrated by the fact that we find several cases in one house, not merely in dispensary practice, but also in dwellings of a better sort and presumably in good sanitary condition. He had met with four cases, three of which were fatal, occurring in rapid succession in a recently built house in a fashionable quarter of Boston. On investigation it was found that a bad leak in the soil-pipe allowed the escape of filth upon the cellar floor, and of sewer gas from the drain into the house. In another house, whose sanitary condition was suspicious, he had had four cases of pneumonia in children, one of whom had a second attack two months after the first. The other point Dr. Minot wished to speak of was the treatment. He had listened with pleasure to what Dr. Townsend had urged in favor of a simple treatment. In a disease which in healthy children is almost never fatal, active remedies are seldom required. Even the amount of nourishment needed during the short fastigium of pneumonia is small, and children often refuse even milk until the crisis declares itself, when the appetite suddenly returns. While a student in Paris, forty years ago, he used to see large numbers of children in the "Enfants Malades," suffering with what was supposed to be lobar pneumonia, who were treated with tartar emetic. It was at that very time that Legendre and Bailly made the interesting discovery that in many of the fatal cases the solidified condition of the lung was due to atelectasis, and not to pneumonia, and could be restored to the normal condition by means of inflation. A better acquaintance with the pathology and the course of pneumonia in children has led to the abandonment of such barbarous remedies as tartar emetic, but he thought a rational treatment was far from being generally employed in this disease.

DR. ROTCH: There are a very large number of interesting points of difference between the lobar pneumonia of children and that of adults. I will not

take the time of the society in discussing them all, but refer to one or two which are of especial importance.

The age Dr. Townsend has spoken of. Some of the members of the society may remember the infant three days old presented by me at a meeting of this society about four years ago, with complete hepatization of the entire left lung.

A symptom (it might be called) of lobar pneumonia, and one of very great interest in infants and in young children, is the at times entire absence of the symptoms or physical signs which in the adult would indicate that pneumonia is present. Unconsciousness is at times an interesting feature of the disease, the infant being totally unconscious, and it being impossible to make a diagnosis by physical examination. I have seen children breathing a little rapidly and with heightened temperature, but with no other symptoms, lying perhaps a week or ten days entirely unconscious, and then having a pneumonia develop, the child becoming conscious sometimes before the crisis and sometimes after.

I should like to mention some cases of especial interest in this connection. Two little boys, one three and a half years old and one sixteen months, had tonsillitis. They lived in a country house where nothing could be found either at the time of the sickness or afterwards which would account for the disease being of infectious origin. On the 20th of November they began to vomit, and this vomiting continued for five days without any other symptoms except exhaustion; their temperature was about 100° to 101° . I saw them November 25th in consultation with Dr. Chase. At that time they were both unconscious. Their temperature had begun to go up somewhat higher, to 102° and 103° . Physical examination revealed absolutely nothing. The lungs sounded perfectly clear, and I was unable to detect anything else abnormal about them. They were simply unconscious, and there was this continual vomiting. Judging from cases with similar symptoms which I had seen before, I held the diagnosis in abeyance, but was inclined to think that the symptoms were those of acute milk poisoning; and the fact that they had been fed chiefly on milk, and that from the same cow, during these five days, made this opinion still more plausible, although the cases were both very obscure: The vomiting stopped within twelve hours after the milk was withdrawn, and they were fed on barley water, a fact which at first seemed to indicate that the milk was the cause of the symptoms, but which proved to be only a coincidence. I saw the children every day for three days, and they were simply unconscious and presented no physical signs. On the eighth day the younger child, the one that was taken sick first (the older child having been taken sick from twelve to twenty hours later), presented a small area, evidently pneumonia, at the apex of the left lung. This gradually spread; and the temperature went up from 101° to 105° , and there was rapid respiration and working of the alae nasi. This continued for seven days, at which time the crisis came, the temperature fell. The older child did not develop any pneumonic signs until about twelve hours after the younger child; i. e., he began to be sick later, and the pneumonic signs developed later, and appeared first at the left base. He

also was unconscious until the crisis. Both children had complete solidification of the left lung. The temperature ran from 105° to 106° . Various measures were used to reduce the temperature. The lukewarm pack was tried and antipyrin without success, and we then used antifebrin. Antifebrin worked very well indeed in grain doses, simply placed upon the tongue. I would like to draw attention, however, to the danger which there is from antipyretics in these cases. If they are given during the course of the disease, before the crisis has come, it is apparently safe to give them. The danger is in using them at the crisis and in judging just when the crisis will take place. Both children were taking antifebrin, and both were unconscious and evidently suffering from high temperature; so that I considered that any means of reducing the temperature would be justifiable. The older child I supposed to be almost twenty-four hours behind the younger in regard to resolution. He was given a dose of antifebrin on the seventh day from the time when I detected the pneumonia. The temperature went down from 105° to 103° . The child was breathing very quietly; seemed comfortable, and was left in the room with its grandmother and nurse. I went down stairs to talk over the case with the father and mother and with the attending physician. They all of them were in high spirits, and thought that the antifebrin was keeping the temperature down, and that the children were doing well. While we were talking I had a feeling (why I don't know) that something was going wrong with the older child, so I ran up stairs to look at it, although of the two it was the one about which I had the least apprehension. The child had stopped breathing. It was in a state of collapse; no pulse could be felt at the wrist; and it apparently was dead. With the stethoscope, however, I heard a few beats of the heart. By vigorous rubbing and giving enemata of hot brandy and water the child revived, and from that moment began to get better. The crisis had come just at the time when a dose of antifebrin was given, and the two coming together carried the temperature from 105° down to 96° in perhaps an hour. It was more than the child's vitality could stand; and it would have died unless resuscitated. I then went to see the younger child, and the antifebrin was beginning to take that temperature down pretty quickly; so we placed hot-water bottles about the child and gave stimulants, thus obviating the collapse which it evidently was falling into. Resolution quickly took place after that, and both children recovered. They were unconscious for fifteen or sixteen days, and showed no signs of pneumonia until the eighth day of their sickness. The crisis in one child was in seven days, in the other in six.

The physical signs of lobar pneumonia are very elusive in children in comparison with those of adults. Last spring I had charge of a child six years old—evidently a case of lobar pneumonia. The left lung was solidified. At the time of the crisis the temperature fell, but no râles whatever were heard. The child gradually got better; and the percussion became clear very quickly, apparently fading away almost from hour to hour. No sign of resolution, in the sense of hearing râles, could be detected, and scarcely any cough.

Prolonged resolutions in cases of lobar pneumonia are extremely interesting. I remember a child of five years, where, after a lobar pneumonia in which the whole of the right lung was involved, the temperature fell, but the solidification continued for from ten to twelve days; and then the child finally got well in a very exhausted condition, having an attack of pemphigus in the latter part of the disease. I think that in delayed resolution the danger of a catarrhal condition of the lung—phthisis—resulting is not nearly so great as in the adult, and I would say that in those cases even where dullness lasts for a long time with profuse rales and sweating, children are very apt to recover, although exactly the same physical signs would point to phthisis in the adult.

Empyema in the beginning is very difficult to distinguish from lobar pneumonia. In a number of cases which I have seen in my own practice and in consultation, empyema has been mistaken for lobar pneumonia in the beginning of the attack. It is possible there may be a certain amount of pneumonia in these cases; but at the same time, from following them up carefully, I have been impressed with the belief that they were simply cases of empyema.

The next paper was the report by Dr. C. B. PORTER of

A CASE OF PELVIC HEMATOCELE: OPERATION BY LAPAROTOMY; SUTURE OF CYST TO ABDOMINAL WOUND, AND DRAINAGE; RECOVERY.¹

In the unavoidable absence of Dr. Porter, the paper was read by the Secretary.

Dr. M. H. RICHARDSON then reported

A CASE OF LAPAROTOMY FOR VOLVULUS.²

Dr. E. N. WHITTIER: The great importance of the subject brought to notice by Dr. Richardson is borne out if we remember the tabulation of some twelve thousand cases of death from all causes, in which the reporter, a very accurate man, came to the conclusion that at least one in 280 died from intestinal obstruction. It is considered by most authorities that the table of Leichtenstern that one to 300 to 500 die of intestinal obstruction, is more correct. From 1839 fatal cases of intestinal obstruction collected by Mr. Durham, 546 died of internal strangulation; and the figures run very curiously in this wise: that of the 546 cases that died of internal strangulation 106 had volvulus; and of the 106, 65 died of twist of the large intestine and 41 of twist of the small intestine, somewhat upsetting the previous ideas I had had of the location of twist with reference to history of intestinal obstruction.

This case was one of peculiar interest from the very outset: the latency of the symptoms, the absence of severe abdominal pain, of frequent and early vomiting, of abdominal distention, of constipation and of ineffectual straining at stool, in fact the absence of all the characteristic symptoms of internal strangulation; and what was of particular importance as conveying, perhaps, an impression likely to deceive, was the history of two large semi-liquid discharges some time after the man had been considered to have been in considerable danger from

intestinal obstruction; and also the persistency of the patient, for in spite of what he spoke of in reference to a twist he insisted on going to his business and felt himself abundantly able. Certainly the first time I saw him there was nothing which would seem to warrant his being kept rigorously in bed and on liquid diet, other than the importance which should be assigned to cases of suspected intestinal obstruction. At that time a mass, not tender, easily moulded, doughy to the feel, irregular in outline, and somewhat irregular in surface, was in the left inguinal and left lumbar region, about midway between the anterior superior spine and the umbilicus and the margin of the ribs; affording evidence of an intestinal tumor and very slight additional evidence of anything more than a circumscribed peritonitis associated.

Apprehension at that time was well founded that a purulent cellulitis had taken place in the left lumbar region, and that if anything was done it would be to evacuate pus, which seemed to be making its way to the surface. The man was kept in bed and watched carefully. External applications were made, when suddenly in Dr. Marion's absence a collapse took place; and immediately after that it was decided, owing to increase in the gravity of the symptoms, that laparotomy should be done. If I understand the location of this volvulus, it was in the upper part of the duodenum? (turning to Dr. Richardson).

Dr. RICHARDSON: I think at the beginning of the jejunum.

Dr. WHITTIER: At all events the tumor was unexpectedly low for a volvulus, and in the left inguinal and lumbar region.

As a last resort (and it had not seemed to me at any previous time indicated) laparotomy was done to give the man the chance he was entitled to. I do not think operation two days previous would have saved him, for the autopsy showed a complication probably of a thrombosis of the superior mesenteric artery. There is nothing in the history of the case, other than the collapse, to establish time at which this was formed.

Dr. H. E. MARION: In this case vomiting took place on the night referred to, on the evening of the fourth, laparotomy on the fifth. If I remember rightly, the ecchymosed part of the small intestine removed extended from the upper part of the jejunum to nearly the whole of the ileum, including almost all the small intestine, and, if I remember correctly, Dr. Whitney, on making an examination of the liver afterwards, found micrococci in it. It is an interesting pathological fact.

Dr. WHITTIER: Was there in the vomitus an appearance of blood slowly transuded into the stomach, and had it undergone some putrefactive change?

Dr. MARION: I examined by microscope that morning. There were degenerated blood cells.

Dr. F. B. HARRINGTON then reported

A CASE OF REMOVAL OF A LARGE PART OF THE FRONTAL BONE FOR COMPOUND FRACTURE: RECOVERY.³

The President nominated Dr. E. O. Otis delegate to the annual meeting of the Connecticut State Medical Society.

¹ See page 621 of the Journal.

² See page 629 of the Journal.

³ See page 630 of the Journal.

The President also nominated the following secretaries of sections: Anatomy and Physiology, Dr. M. H. Richardson; Medical Pathology, Clinical Medicine and Hygiene, Dr. A. N. Blodgett; Obstetrics and Diseases of Women, Dr. G. Haven; Chemistry, Pharmacy, and Materia Medica, Dr. F. H. Williams; Surgery and Dentistry, Dr. G. H. Monks; Ophthalmology, Dr. M. Standish; Psychology, Dr. G. F. Jelly; Microscopy, Dr. W. J. Otis.

EXHIBITIONS OF PATHOLOGICAL SPECIMENS.

Dr. F. C. SHATTUCK showed some serum obtained by blistering a patient with hæmoglobinuria in his service at the Massachusetts Hospital, and also, for the sake of contrast, serum from a patient with chronic nephritis. The former was markedly red in color. It was drawn several days before, at a time when the urine was loaded with hæmoglobin, which soon after disappeared. The patient is a negro, has a malarial history, and is now in the second week of typhoid fever.

It cannot be positively determined at present what the relations of the hæmoglobinuric attack are, though the facts that it has been of short duration and that Ehrlich's experiment was successfully repeated in the case would suggest that it may belong in the paroxysmal class. This experiment consists in placing a tight ligature about a finger, then immersing the finger for twenty minutes in ice water, and, finally, for about ten minutes in tepid water. A drop of blood is then taken from the finger and put under the microscope, which shows that some of the red corpuscles have lost their coloring matter.

There was a malarial history. This fact, and the blood corpuscles so affected by the influence of cold, would indicate that the case is one of the paroxysmal form, and that the hæmoglobinuria is passing off.

The President, Dr. JOHN HOMANS, showed a uterine fibroid, weighing seven pounds, removed by him from a patient thirty-one years old by laparotomy. About two inches of the uterine canal was included in the tumor removed. The stump of the pedicle was treated extraperitoneally. The tumor was first noticed in April; and at the time of operation it extended above the umbilicus. It was nearly globular in shape. Both ovaries and tubes were removed with the tumor.

Dr. HARRINGTON: What was used for clamp?

Dr. HOMANS: The wire écarteur modified by Dr. Mixer. One of the modifications consisted in two little wheels being inserted at the shoulder of the clamp where the wire comes over: so that the wire is not so liable to break. If you look at the cut surface of that specimen you see how large the area was where the wire was put round, and yet that the portion of the neck of the stump was not larger than my little finger.

The society then proceeded to choose by ballot a committee of five to prepare a list of candidates for officers of the society.

The choice was announced by the President as follows: Dr. F. W. Draper; Dr. F. Minot; Dr. F. J. Knight; Dr. T. M. Rotch; Dr. M. Prince.

The society then adjourned.

NEW YORK COUNTY MEDICAL ASSOCIATION.

STATED meeting, November 19, 1888.

Dr. J. G. TRUAX read a paper on

PELVIC ABSCESS WITH LESIONS AS THE RESULT OF LACERATIONS OF THE CERVIX UTERI;

after which Dr. H. S. OPPENHEIMER read a paper on

HEADACHES AND OTHER NERVOUS SYMPTOMS CAUSED BY FUNCTIONAL ANOMALIES OF THE EYE.

It was the object of the paper, he said, to call more particular attention to the functional errors only: as the effect upon health, and even upon the formation of character, of errors of refraction, such as myopia and hyperopia, had now been extensively discussed, and the necessity for their correction generally recognized. Having stated that, of all the symptoms which brought patients to seek the aid of a physician, headache was probably the one most frequently complained of, he said that there was one cause of this which was frequently overlooked by the busy practitioner, viz., eye-strain. If sufficient attention was paid to this condition many a patient might be spared the fruitless use of a long list of remedies in the attempt to secure relief for a persistent or recurring headache. A number of the best neurologists and general practitioners had gradually during the last few years come to the recognition of the fact that a considerable proportion of their cases of headache, neurasthenia, vertigo, and even insomnia, inability to concentrate thought, etc., depend on the presence of mere functional disturbances about the eyes, and are relieved by their proper treatment in competent hands. More attention had therefore been paid to the careful examination of the functions of accommodation and fixation, and the close relationship existing between the focusing and the directing apparatus of the eye, than ever before; and it had been a cause of surprise to oculists even to discover how many of the merely functional disturbances of the nervous system, seemingly unconnected with the functions of the eyes, could be relieved by a careful and painstaking study and treatment of the muscular apparatus of these organs.

He said that in the present paper he had concluded to leave out the citation of cases, and content himself with giving in a general way the different symptoms, variously modified in individuals, which he had noticed as existing in connection with muscular asthenopia, and which subsequently disappeared, completely or partially, under treatment directed towards restoration of the muscular balance. In referring to some points in the anatomy and physiology of the ocular muscles, he said that it was to be borne in mind that in all its actions each muscle was steadied and balanced by more or less action of the opposing muscle, and that all the muscles of the eyeball, through their tone, contributed to the steadiness of its motion and the maintenance of its positions. What he desired to emphasize was the fact that the eyes, in working together, call for a variety of combined action on the part of the muscles. It was to be remembered that each eye has to be directed to a nicety, so that the image shall fall upon the most sensitive part of the retina,

the yellow spot, in order that both eyes may see the same object, and thus single vision with both eyes shall result. This was what was termed binocular vision. It was also to be remembered that the twelve muscles of the two eyes are supplied by six different nerves, and that the failure or weakening of any one of their muscles will disturb the harmonious working of both eyes. Considered in this way the marvel was, not that we have muscular insufficiencies and losses of balance, but that we ever have binocular vision at all. It took infants some months to gain control of the ocular muscles so as to obtain and hold a single vision with both eyes, and a considerable proportion of individuals never had it. Those who squinted never had it while they squinted.

In regard to insufficiency he said that a muscle was clearly insufficient which could not hold the eye in its proper place against its antagonist and allowed this antagonist to draw the eye to its own side, thus causing a squint; but technically a muscle was said to be insufficient which could do its work, but did it under such a strain as to cause unpleasant symptoms and sensations. It was a muscle which habitually maintained binocular vision by the expenditure of a greater amount of effort than was demanded in the perfect condition of equilibrium. In strabismus, however, there was habitual diplopia, conscious or unconscious, and therefore the constant striving to prevent deviation of the visual lines was not present. It was for this reason very rare to find in cases of strabismus the long list of symptoms with which oculists were so familiar in patients suffering from insufficiency. In the normal eye in a healthy subject the muscles were so perfectly balanced that they maintained their equilibrium at all ordinary distances, even when the effect of the will was wholly in abeyance.

Having described the method of testing for muscular insufficiency, and its variety and degree when present, with prisms, he said that it was hardly necessary to remark that the condition of the muscles varied in the same individual at different times and in differing conditions of health. Thus, in some nervous women he found that during the period of menstruation they would sometimes complain of pain or discomfort from the eyes, which might be relieved by the temporary wearing of glasses. There was, so far as his experience went, no observable relation between the severity of the symptoms present and the degree of insufficiency. Some people went comfortably about their business with a manifest degree of insufficiency which would drive those of a more nervous organization to distraction; and the nervous irritability of the individual seemed to determine in a great measure the appearance of many of the symptoms. Persons who used their eyes constantly in the examination of minute objects were very apt to feel slight tendencies to loss of muscular balance of the eye.

In most of the cases which had come under his observation there was some trouble of refraction complicating the muscular difficulty, and in quite a number of them, as he believed, causing it. Headache was perhaps the most constant symptom of all the cases. These headaches were not at all confined to the frontal or temporal regions, as one would expect. They might be general or they

might be referred to the vertex or occiput. One of his patients complained of pain in the back of his neck, which he said left him after he had begun to wear the proper glasses. Again, the headaches might be constant, or they might come on with the use of the eyes, or perhaps only after the eyes had been used for some hours. Some of the patients woke up with them. The headaches sometimes took on a neuralgic form, and in certain instances were exceedingly severe. Another quite frequent symptom was the inability, or the loss of disposition, to use the mind. Patients would say that they did not want to think, and when they were obliged to do it it seemed to distress or fatigue them. It was this class of patients also, strange as it might seem, that were apt to complain of insomnia. Dizziness, or some form of vertigo, was not a rare symptom, and it was sure to be complained of where the muscles were barely able to maintain an equilibrium. The least lapse would bring on diplopia, and this was apt to produce vertigo. One woman of fifty-three, who suffered from headaches, dizziness, and severe tinnitus aurium, for which she had taken large doses of the bromides, was promptly relieved of all these symptoms by the wearing of appropriate glasses.

People who found a great portion of their pleasure in reading were most apt to be depressed on discovering that they were no longer able to use their eyes *ad libitum*, and this depression was likely to produce in persons of a nervous temperament all sorts of neurasthenic symptoms. It was this particular class of patients who were changed so radically when they found that they could use their eyes with comfort again.

The treatment of these cases of insufficiency, Dr. Oppenheimer said, should always be preceded by a most careful study of each individual, by a rest of the eyes, where possible, with the use of atropine, and by a most painstaking correction of the anomalous refraction. The functions of accommodation and convergence were so closely interdependent that he found it difficult to give a satisfactory muscle test without knowing first what the state of muscular balance was, without having the accommodation completely at rest. This would frequently bring out a latent insufficiency which before had been masked. When there was a refractive error, the correction of this alone sometimes sufficed. In fact, where there were high degrees of astigmatism, he had frequently found that the correcting glasses for the refraction enabled the patient to use the eyes with comfort. In cases where a prism was incorporated with the correction for refraction, there was often some difficulty in the patient's becoming accustomed to its use; and he therefore usually began by correcting the insufficiency about one-half, or even less. Then, by increasing the prism as required he gradually accustomed the patient to accept aid in this way. When the patient was able to use the eyes with comfort he rested satisfied, and made no attempt to attain the ideal balance of the muscles.

When it was necessary to use prisms of such high degree as to give the patient the uncomfortable sense of everything being convex or concave, he advised tenotomy, and in performing this he followed the method of Snellen; beginning the divi-

sion at the middle of the tendon, and gradually cutting outward as far as might be required. In the slighter grades of insufficiency he greatly preferred the use of prisms to tenotomy, for the following reasons:—

First. It is the easiest to the patient.

Second. It is usually sufficient to restore the patient to the comfortable use of his eyes.

Third. Restoration to perfect health and condition quite often restores the equilibrium of the muscles, and a tenotomy may under those circumstances incline the balance in the opposite direction. He said he could not too strongly express his conviction that out-of-door exercise and all other hygienic and medical means to restore the general health are most important adjuvants to the special treatment.

So far from setting up an absolute standard for the strength of each set of muscles, and dividing tendons until this standard was reached, he believed it was as irrational to set up a standard of muscle power, and call deviations from this abnormal, as to set up a standard of weight for an adult man, and call every one not coming up to this weight atrophic. He then quoted a paragraph from a recent article in the *Archives of Ophthalmology*, by Dr. George Stevens, the champion of tenotomy, which he stated was, in language familiar to the non-specialist, equivalent to saying: If there is a lateral balance and a vertical balance of the muscles to your test, but the outer muscles do not appear quite as strong as they should be according to an arbitrary standard, and if you do not increase the strength of these supposedly weak muscles by practice of a few minutes at a time for several days, and do not succeed in weakening them either by resting them in letting prisms do their work for them, then an operation is undoubtedly permissible. If we remembered that this operation would be a tenotomy of the internus muscle, the muscle which of all others needed to be strong in order to converge properly, and that there was more or less convergence required for all distances within twenty feet (which meant, in a city, almost all the time), we got an idea to what a dangerous extent a hobby could be ridden. In such a case Dr. Oppenheimer would say: If a weak prism, worn for a few days, gives relief, let the patient continue to wear it, and when it ceases to answer increase its strength as required. He did not wish to have it inferred, however, that he did not tenotomize the internus for a pronounced insufficiency of the externus. He had certainly had some excellent results from doing this where he thought it indicated; but he did not operate for ailments imagined by the patient or the physician, nor did he claim to make effectual cures of epilepsy or chorea by tenotomy.

He then summed up the treatment of cases of eye-strain as pursued by him for headaches and other nervous symptoms as follows:—

First. All hygienic and medical indications to be carefully carried out by the attending physician.

Second. A most careful correction of the refraction and accommodation.

Third. Correction of muscular insufficiencies by prisms, begun with a less degree of strength than apparently necessary, and increased if this should prove insufficient.

Fourth. Tenotomy, if prisms do not relieve, or if they cause too much discomfort of themselves.

And, finally, when the patient can use his eyes with comfort, with the correction given him, I rest satisfied, and cannot think any operation justifiable under these conditions.

Recent Literature.

Essentials of Chemistry and Toxicology, for the use of Students in Medicine. By R. A. WITTHAUS, A. M., M. D. Second edition. New York: William Wood & Co. 1888.

This volume, which forms one of Wood's series of pocket manuals, contains 1053 questions, with answers based upon the author's excellent Manual of Chemistry. It is essentially, therefore, an abstract of the latter work. The author distinctly disclaims any intention of preparing a "cram compend," and has endeavored to make the book useless for this purpose. This book is one of the best of the numerous small volumes which have been from time to time published under the titles of "Essentials of Chemistry," "Aids to Chemistry," "Lecture Notes on Chemistry," etc.; and, used as the author recommends, in connection with his larger work, or with a course of lectures in chemistry, as an aid in preparing recitations, it will doubtless prove useful to the average student.

Ptomaines and Leucomaines, or the Putrefactive and Physiological Alkaloids. By VICTOR C. VAUGHAN, Ph. D., M. D., and FREDERICK G. NOVY, M. S. Philadelphia: Lea Brothers & Co. 1888.

On the Animal Alkaloids, the Ptomaines, Leucomaines, and Extractives in their Pathological Relations. By SIR WILLIAM AITKEN, Knt., M.D., F.R.S. Philadelphia: P. Blakiston, Son & Co. 1887.

The work of Prof. Vaughan and Mr. Novy represents the first attempt in this country to collect into one volume everything of importance pertaining to this subject. The character of the work is best shown by the following table of contents: Chap. i.: Definition and Historical Sketch of Ptomaines. Chap. ii.: Foods containing Poisonous Ptomaines. Chap. iii.: The relation of Ptomaines to Disease. Chap. iv.: The importance of Ptomaines to the Toxicologist. Chap. v.: Methods of extracting Ptomaines. Chap. vi.: Chemistry of the Ptomaines. Chap. vii.: Chemistry of the Leucomaines. Chap. viii.: The pathological importance of the Leucomaines. Chap. ix.: Literature. The bibliography in the last chapter is very complete, containing a reference to the original report of nearly everything of importance published up to the present year. The book is in all respects an excellent one, and should be in the hands of every physician and chemist.

The subject matter of Prof. Aitken's book originally formed a lecture introductory to the course of instruction at the Army Medical School at Netley. It is a small volume of fifty-six pages, and claims to be nothing more than a brief summary of the views now entertained regarding the origin of certain diseases through physiological processes going on within the body during life. The opening pages contain a short historical sketch of the ptomaines and leucomaines; then follows a brief discussion of their clinical and pathological aspects.

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ANNUS MEDICUS, MDCCCLXXXVIII.

THE thoughtful physician, of which species the JOURNAL is happy to number an unusually large representation on its subscription list, is wont to turn from the festivities of the holiday season, even from the necessarily somewhat engrossing work of closing up his books and sending out his modest reminders of indebtedness for professional service, to the editorial columns of the JOURNAL in its final issue for each year, to see what have been some of the more prominent events of the year that is closing. For such a reader we have to present the following partial review.

The epidemic diseases of the year 1888 have fortunately been few. Cholera has, except for some regions of South America, been practically confined to its Oriental habitat, and the unfortunate experiences of Southern Europe the previous year have not been repeated. Small-pox has also remained in abeyance so far as concerns English-speaking people. Yellow fever, on the other hand, has shown considerable activity in the southern parts of this country,—Jacksonville, Florida, being the heaviest sufferer. Sporadic cases occurred in southern Florida through last winter, the poison being introduced from Havana, where yellow fever is endemic, and the condition of which as a home of yellow fever offers a constant menace to our southern seaboard. A wide-spread but moderate epidemic of the disease prevailed in 1887 which resulted in 1270 deaths, mostly in Mexico, Brazil, Central America, and the West Indies, though 147 of them occurred in Florida. Early in last August the fever showed itself with uncomfortable frequency in northern Florida, and an epidemic of considerable proportions followed. Up to December 13, when

the issuing of fever bulletins was discontinued, there had been in Jacksonville about 4704 cases, with 412 deaths. The type of the disease was light, the mortality diminishing with the autumn months, though new cases continued to appear after the first frost, which was November 13. The low mortality rate, about 8½ per cent. compares very favorably with that of the epidemic of 1878, which in Louisiana, among 30,000 cases, was 16½ per cent. McClenny, Gainesville, Palmetto, Fernandina, and other Florida towns were visited by the disease, as were also Decatur, Alabama, and Jackson, Mississippi, but no considerable foothold was gained by the fever outside of Florida. A most annoying quarantine, however, was maintained for some weeks by nearly all municipalities in the Mississippi valley, as far north as Chattanooga.

Considerable attention has been directed, especially among the medico-legal fraternity, to the subject of the manner of executing the death penalty. A commission appointed the previous year by the governor of New York reported about the 1st of last January in favor of the use of electricity, and suggested several desirable modifications in the further conduct of executions, such as the limitation of publicity both in the admission of spectators and the printing of descriptions in the public press. The recommendations of this committee were sanctioned by the New York Medico-legal Society, but were disapproved by the Society of Medical Jurisprudence and State Medicine. The legislature, following the recommendations of the commission, passed a law, which goes into effect January 1 next, requiring the execution of criminals by electricity. As to the preferable method of applying this agency, experiments have been made by electrical engineers in presence of the author of the new law, a committee of the Medico-legal Society, and others interested, which go to favor the employment of alternating currents from a dynamo generating an electromotive force of at least 3000 volts.

A nine days' wonder, or rather a thirty days' wonder, of the year, was the fast of an Italian named Succì, who unlike others of his ilk, performed his fast under the constant supervision of scientific men. These were of the Medico-physical Academy of Florence, which body appointed ten or eleven committees, each to be in charge of some special department of physiological observation. The observations have been worked out with detail, and may be of some permanent value to science. Succì took, by previous agreement: 1, an occasional saline purgative; 2, an alkaline beverage; 3, water for washing out the stomach and other purposes; 4, olive oil, in inconsiderable quantity, for embroca-

tion. He performed his task successfully, and has since undertaken to duplicate it in Barcelona.

Certain occurrences of the year have brought into strong prominence the "wrong side" of our modern civilization, especially in the great cities. The "sweating" investigations made in England both by Parliamentary order and by the press have revealed a great deal of misery among a class of really skilled operatives, oppressed by employers who have put out tailoring work to be done in the homes of workmen at prices utterly inadequate to the support of the workers, who labor under conditions of privation and filth, whose possible ill effects may even reach the more favored persons who are destined to wear the garments so made.

Another comment on the occasional failures of civilization is in the series of mysterious murders committed in Whitechapel, London, by some person, evidently the victim of insanity of a perverted sexual type. The sanitary condition of the rookeries, inhabited by the victims and presumably their destroyer, has forced upon humanitarians the question whether society is not in a measure responsible for the physical conditions which lead to crime and disease, and so for these curses themselves.

A cancer bacillus was recognized toward the beginning of the year, at first by Scheuerlen, and later by Francke and others. Francke also discovered a sarcoma bacillus, larger and thinner than that of cancer, and otherwise slightly differing from it. The genuineness of these bacilli has however been questioned, and as is apt to be the case, some acrimony developed in the course of the discussion.

The year has also witnessed the "complete decline and fall" of the microbe of yellow fever described by Dr. Domingo Freire, of Rio Janeiro, and Dr. Carmona, of Mexico, together with the failure of the method of preventive inoculation suggested by them. Dr. Giliér, who was sent out from France to investigate the subject, joins with Dr. Sternberg, the commissioner appointed by our President to study the claims of Freire and Carmona, in denying the validity of the supposed discovery.

One or two unfortunate medical controversies, carried on largely through the columns of the daily press, have marred the year. Our English and German brothers have suffered perhaps most severely from them, but their unfortunate effects have been felt among the medical profession the world over. First in order of time was the controversy carried on in the columns of the *London Times* on Homœopathy, started by the bitter onslaught of Lord Grinathorpe upon regular medicine. Sensitive and zealous members of the profession rushed

to its defence, and the result was a newspaper war which, as always, left things exactly where they were, but with the disadvantage of an extensive advertising to the public of what they had previously known and cared little about. The lesson is one which medical men have been slow to learn, but which it is to be hoped they will now profit by.

Another most unfortunate controversy has arisen over the grave of one of the most heroic and patient of sufferers, the Emperor Frederic III., who died of cancer June 15. The German surgeons early diagnosed the disease, and advised extirpation of the larynx. Sir Morell Mackenzie discredited their diagnosis and opposed the operation. English men and methods are none too popular in German court circles, and when the disease showed itself to be actually cancer, there was little disposition to praise the course of the English surgeon. His action, whether prompted by a desire to keep up his patient's courage, or by the more diplomatic motive of doing nothing which should stand in the way of his patient's accession to the throne, even for ever so brief a time, and the consequently enhanced pension and emoluments of Queen Victoria's daughter, as the widow of a crowned emperor, was condemned. He was accused of letting the patient die by neglect, even of having removed healthy laryngeal tissue by mistake, and of other malpraxis. Mackenzie retaliated by accusing one of his opponents of bungling in performing tracheotomy, and threatens to sue any publisher who shall offer for sale the German surgeons' report. The sentiment of our English brethren seems to be somewhat adverse to their countryman's course, and the last move of the latter has been to resign his membership in the College of Physicians. The whole discussion "though it make the unskilful laugh, cannot but make the judicious grieve."

Meantime two illustrious men of the Western world have in the time of their mortal extremity required and received the best service of our profession, together with the warm sympathy of the public at large. The one, General Philip H. Sheridan, going down as a brave soldier to his death, and the other, Dom Pedro of Brazil, coming up from death's door to restored health, and to strength equal, it is hoped, to added years of enlightened rule.

The event of chief interest to the American medical profession during the year was undoubtedly the first triennial meeting of the Congress of American Physicians and Surgeons, which took place in Washington, September 18-20, and was presided over by Dr. J. S. Billings. Meetings of the Congress were held each evening, and the participating societies held each its separate session

daily. These societies were the Association of American Physicians, and the American Surgical, Climatological, Laryngological, Dermatological, Genito-Urinary, Neurological, Orthopædic, Otological (special meeting), Physiological, Ophthalmological (special meeting), Gynecological Societies, the American Association of Obstetricians and Gynecologists, and the Association of American Anatomists.

Besides this great assembly, the other more noteworthy medical gatherings of the year, outside of the State society meetings, have been as follows:—

The 17th Congress of the German Surgical Society convened at Berlin, April 4-7, 1888.

The 7th German Congress for Internal Medicine was held at Wiesbaden, April 9-12.

The American Medical Association held its 39th annual meeting at Cincinnati, Ohio, May 8-11.

The American Otological Society held its 21st annual meeting at New London, Connecticut, July 17.

The American Ophthalmological Society held its 24th annual meeting at New London, Connecticut July 18-19.

The Congress for the Study of Tuberculosis was held in Paris, July 25-31.

The British Medical Association held its 5th annual meeting in Glasgow, August 7-11.

The 7th International Congress of Ophthalmology was held in Heidelberg, August 8-11.

The Canadian Medical Association held its 21st annual meeting in Ottawa, September 12-13.

The 61st annual meeting of the Association of German Naturalists and Physicians occurred at Cologne, September 17-22.

The American Academy of Medicine held its 12th annual meeting in New York, November 13-14.

The American Public Health Association held, its 16th annual session in Milwaukee, Wisconsin, November 20-23.

Of the established Lecture Foundations, which during the year have called forth the matured teaching of eminent medical authorities, we mention, first, in England,—

The Lettsomian Lectures on Some Points in the Surgery of the Urinary Organs, by Reginald Harrison, F. R. C. S.

The Hunterian Lectures on the Tongue as an Indicator of Disease, by W. Howship Dickinson, M. D., F. R. C. P.

The Gulstonian Lectures on Insanity in relation to Cardiac and Aortic Diseases and Phthisis, by William Julius Mickle, M. D., M. R. C. P. L.

The Cavendish Lectures on the Altered Relations of Surgery to Medicine, by Sir W. Stokes, M. D.

The Croonian Lectures on the Antipyretics, by Donald McAlister, M. A., M. D., F. R. C. P.

The Bradshawe Lecture on Uremia, by William Carter, M. D., B. Sc., &c.

The Bowman Lecture on the Value of Eye Symptoms in the Localization of Cerebral Disease, by H. R. Swanzey, A. M., M. B., F. R. C. S. I.

In this country we have had—

The Middleton Goldsmith Lecture, which was given by Prof. J. M. DaCosta, of Philadelphia, before the New York Academy of Medicine, April 18, and was upon the Relation of the Kidney and Heart Affections.

Also the Cartwright Lectures on the General Pathology of Fever, which were given in March and April, by Prof. William H. Welch of Johns Hopkins University, and were published in full in this *Journal*.

As always, a sadly prominent part of review of the medical year is the list of eminent men of the profession who have been removed by death. Of these names we mention a few.

Arthur Farre, M. D., F. R. C. P., F. R. S., a distinguished physician and obstetrician, died in London, December 17 of last year, aged seventy-seven. He was professor of obstetric medicine in King's College Hospital from 1841 to 1862. He was made F. R. S. at the early age of twenty-eight. In 1851 and 1852 he was president of the Royal Microscopical Society. He was physician-accoucheur to the Princess of Wales and to several of Queen Victoria's daughters; was made physician extraordinary to the Queen in 1875, and in virtue of his seniority and prominence became honorary president of the Obstetrical Society, which position he held at his death.

Alexander Dickson, M. D., LL. D., F. R. S. E., professor of Botany in the Dublin University, and later at Edinburgh, physician and botanist, died December 30, 1887, at the age of fifty-two.

James R. Nichols, M. D., of Haverhill, Massachusetts, died January 2, aged sixty-nine years. He was the founder and editor of the *Journal of Chemistry*, now the *Popular Science News*, and the writer of some thoughtful essays on the great problems of life and death.

Prof. Tito Vanzetti, of the chair of Clinical Surgery in the University of Padua, died January 6, at the age of eighty. He had been a renowned operator, and amassed a fortune, of which he left \$20,000 for the advancement of clinical surgery in his own school.

Wesley M. Carpenter, M. D., of New York, died January 7, aged forty-nine years. He was particularly devoted to medical literature, was a member of the staff of the *Medical Record*, author of the "Index of Medicine," editor of the "Epitome of American Medicine and Surgery," and a prolific and

trustworthy writer in various medical encyclopædic works.

George A. Crosby, M. D., of Manchester, a distinguished member of a family renowned in the medical history of New Hampshire, died in Manchester, January 29, aged fifty-seven. He had been president of the New Hampshire Medical Society.

Ernest Leberecht Wagner, M. D., for twenty-five years professor of General Pathology and Pathological Anatomy in the University of Leipzig, died February 10, at the age of fifty-nine. His most noted work, "*Handbuch der allgemeinen Pathologie*," appeared in 1862, and passed through many editions, of which no less than six had been translated into English up to 1876. He contributed the article on Bright's disease to "*Ziemssen's Cyclopædia*."

Dr. Emil Bessels, physician, naturalist, Arctic explorer, and scientific director, first on the steamship *Alert*, 1869, and later with the *Polaris*, 1871, secretary of the Smithsonian Institution, died March 30, aged forty.

F. S. François de Chaumont, professor of Hygiene, at first conjointly with the late Dr. E. A. Parkes, at the Army Medical School at Netley, England, and a recognized authority in sanitary science, died in April, aged fifty-five.

Dr. Robert Hippolyte Brochin, editor-in-chief of the *Gazette des Hôpitaux*, died March 25, aged seventy-nine.

Cornelius Rea Agnew, M. D., the distinguished oculist of New York, died April 18, aged fifty-eight. He had been surgeon-general of the State of New York, an active organizer and worker in the Sanitary Commission of the war; a founder of the Union League Club of New York and also of the Brooklyn and the Manhattan Eye and Ear Hospitals, clinical professor of Diseases of the Eye and Ear in the College of Physicians and Surgeons, president of the Medical Society of the State of New York, and a member of a great number of important scientific societies.

Edward Greeley Loring, M. D., also a successful ophthalmologist of New York, died April 23, aged fifty-one. He was a native of Boston, where he received his medical education, but spent his professional career mostly in New York, where he was associated in partnership with Dr. C. R. Agnew, for whose professional chair he was suggested as a successor in the few days which elapsed between the death of the two men.

Edward S. Dunster, M. D., professor of obstetrics at the University of Michigan, formerly a teacher in the University of Vermont, Dartmouth Medical College, and the Long Island Medical College, and for a time editor of the *New York Medical Journal*, died May 3rd.

Thomas Harrington Tuke, M. D., widely known as a practical psychologist, for eight years president of the Medico-psychological Association, and an abundant writer on subjects connected with insanity, died June 9, aged sixty-two.

John Milner Fothergill, M. D. Ed., M. R. C. P. L., died June 28, at the early age of forty-seven. While never holding any professorial chair, he exercised a wide influence on the profession through his writings, which were numerous, among the best known being "*The Heart and its Diseases*," and the "*Practitioner's Hand-book of Treatment*."

A. Y. P. Garnett, M. D., of Washington, ex-surgeon general of the Confederate army, died July 11, aged sixty-eight. Besides his official relations with the Confederacy he was the personal physician and intimate friend of Jefferson Davis and many other leaders of the cause. After the war he returned to practice in Washington, where he was made professor in the Medical College. He was president of the American Medical Association in 1887.

Dr. Salvatore Tommasi, a leading representative of Italian medicine, died at Naples, July 13, aged seventy-four. He was already professor of the Practice of Physic in the University of Naples in 1849, when he was obliged to flee the country for his political views, but he later resumed a chair in the university, where he was made clinical physician-in-chief.

O. W. Wight, M. D., formerly health officer of Detroit, died in November, aged sixty-five. He was a pioneer in public sanitation, on which subject he had written, and as an executive officer acted with marked ability.

Prof. Heinrich von Bamberger, of Vienna, died November 9, aged sixty-six. He had been ordinary professor of internal medicine at Würzburg for eighteen years, when in 1872 he was called to Vienna to fill the chair on the same subject, succeeding Oppolzer. In 1885 he was elected Rector magnificus of the university. As a teacher he was very popular, and was the author of several useful monographs.

Henry B. Sands, M. D., an eminent practising and consulting surgeon of New York, and professor in the College of Physicians and Surgeons, whose distinguished services to practice of surgery are fresh in our readers' minds, died November 18, at the early age of fifty-eight.

Died in New Bedford, Mass., December 24, 1888, Charles Lamson Swasey, M. D., M. M. S. S.

NECROLOGY OF THE MASSACHUSETTS MEDICAL SOCIETY, 1888.

James Robinson Nichols, M. D., of Haverhill, died January 2, aged 68.

Luther William Bennett, M. D., of Boston, died January 4, aged 37.

Peter Parker, M. D. (hon. mem.), of Washington, D. C., died January 10, aged 83.

George Atwood, M. D. of Fairhaven, died January 16, aged 72.

Joel Spalding, M. D., of Lowell, died January 30, aged 68.

Charles Warren, M. D., of Wellesley Hills, died January 31, aged 73.

George Stevens Jones, M. D., of Boston, died February 2, aged 70.

Rowse Reynolds Clarke, M. D., of Whitinsville, died February 4, aged 65.

Nathaniel Gilman Trow, M. D., of Sunderland, died February 4, aged 76.

Charles Berwick Wellington, M. D., of Cambridgeport, died February 17, aged 28.

Francis Henry Mullen, M. D., of Dorchester, died March 15, aged 31.

George Arthur Priest, M. D., of Manchester, died April 25, aged 59.

Enoch Cross, M. D., of Newburyport, died May 17, aged 86.

Norman Smith, M. D., of Groton, died May 24, aged 76.

Alonzo White Bennett, M. D., of Uxbridge, died July 19, aged 67.

George D. Townshend, M. D., of Roxbury, died August 20, aged 46.

Henry O. Stone, M. D., of Salem, died August 23, aged 67.

John Cochrane, M. D., of Lowell, died September 9, aged 40.

Yorick Gordon Hurd, M. D., of Ipswich, died September 24, aged 60.

Samuel Kneeland, M. D., of Boston, died September 27, aged 67.

William Jerome Klinghammer, M. D., of Roxbury, died October 1, aged 31.

Joseph Sargent, M. D., of Worcester, died October 13, aged 73.

Lorenzo Wadsworth Tuck, M. D., of Boston, died October 19, aged 28.

Francis Dana Bartlett, M. D., of South Dartmouth, died November 11, aged 85.

Charles Bailey Slute, M. D., of Malden, died November 25, aged 45.

Henry Holton Fuller, M. D., of Charlestown, died December 13, aged 52.

Ira Russell, M. D., of Winchendon, died December 19, aged 74.

Edwin M. Snow, M.D., city registrar of Providence, R. I., died December 22nd, aged sixty-eight years. He was made city registrar and superintendent of health for Providence in 1855 at the time of the creation of those offices, and filled those positions with marked ability from that date

to the present time. He took a number of censuses of the city and State, and was supervisor for the district of Rhode Island of the national census of 1880. He served the correctional institutions of the State in many ways, and was chairman of the commission which built the new State prison at Cranston. He was one of the founders of the American Public Health Association in 1872, was vice-president 1872-74, and president 1875-76.

MEDICAL NOTES.

— The Philadelphia Polyclinic has established a three months' special course in ophthalmology. It will include systematic didactic instruction and quizzing, with three hours' clinical work daily.

— Growing out of the controversy between electrical engineers regarding the comparative lethal effects of the alternating and continuous currents of high intensity, as proposed for the execution of criminals in New York, the following singular challenge has been sent for what may be called an electrical duel:—

"In conclusion I desire to offer Mr. Westinghouse the following challenge. He asserts that the alternating current is less dangerous than the continuous current, but he has not proved it. I have asserted that the alternating current is five times as dangerous as the continuous, and I have proved it to be so in many cases. I therefore challenge Mr. Westinghouse to meet me in the presence of a committee of electrical experts, and take through his body, from hand to hand, the alternating current, with the same number of alternations per second as used by the Westinghouse company, while I take through mine a continuous current. We will then commence with 50 volts. Mr. Westinghouse, of course, leading, and will gradually increase the pressure, until either one or the other has cried 'enough,' and admitted his error, each contact to be for a period of five seconds. I warn him, however, that the alternating current at 160 volts for five seconds has proved fatal in my experiments, and that several men have been killed by the low-tension Jablochhoff alternating currents. HAROLD P. BROWN."

— New York has a benefactor who has discovered, and sells at the modest price of three dollars a gallon, a "microbe killer," composed of an "electrical extract of steam and air." His circular announces: "The microbe is the only cause of fermentation; we must learn to stop fermentation by killing the microbe. Fermentation causes sickness and death. The microbe cannot be killed by medicine. More people get killed every year by drugs than by microbes. Doctors vary in their methods of getting microbes out of you; some do it by pulling them

out through the skin with plasters, and others with a liniment. Others, again, try to shake them out with electricity, but medical science is baffled in not knowing how to kill the microbe without killing the patient; Radam knows how to do it, excepting in cases of low consumption—it is too late. The microbe killer will even kill the microbes on your teeth. Fits are cured in six months with the microbe killer—because fits are caused by people being so full of blood—so that when the spell comes on the blood runs to the head and brain. Insane persons can all be cured with the microbe killer, because it makes their blood as clear as scarlet. An attempt was made last summer to try the microbe killer on cholera and yellow fever, but the jealous doctors would not allow it. Take any disease. For instance, you eat too much; fermentation goes on in your bowels; now drink microbe killer, and fermentation is gone, or the microbes are killed. I have found the genuine life preserver, and have made a vital revolution with the microbe killer. *Similia similibus curantur.* Close all medical colleges, kill all the doctors, and burn every medical book. I am the great Doctor Eisenbarth, who cures every one by his own art. My name is Radam."

NEW YORK.

—The beautiful new Montefiore Home for chronic invalids, situated on the Grand Boulevard, at 138th Street, was dedicated with appropriate ceremonies December 18th.

—Small-pox has reappeared among the inmates of the Erie County Penitentiary at Buffalo, and the superintendent recommends that no prisoners be received for thirty days, and that all discharged prisoners shall be quarantined for a suitable length of time. The disease has also broken out in the county almshouse.

—The Hospital Saturday and Sunday Association has finally accepted the resignation of the Presbyterian Hospital from the association; this action having been long delayed in order that every possible effort might be made which should tend to preserve united action in the coming general collection.

—The mayor and several other city officials have just paid a visit to the new farm for the insane at Central Islip, Long Island, and expressed themselves as much pleased with the condition of the enterprise. There are at present accommodations for three hundred patients, who are taken from the crowded asylums on Ward's and Blackwell's Islands, and are placed in little colonies on the farm; and the Commissioners of Charities and Correction have asked for an appropriation of \$250,000 to continue the work during the coming year.

—The new Roman Catholic St. Joseph's Hospital, for incurable cases, which is situated north of the Harlem River, was consecrated in the presence of a large gathering by Archbishop Corrigan on the 11th of December. The building is a handsome structure of brick and terra-cotta, with beds to accommodate 250 patients, and is to be under the charge of the Sisters of the Poor of St. Francis.

—The estimate of the expenses of the Health Department for the coming year was \$421,461, and the Board of Estimate and Apportionment has cut this down to \$413,000. The appropriation for the year 1888 was \$394,877. The Butchers' Association urged that the Health Department be enabled to employ six inspectors for the purpose of preventing traffic in tainted meat, and the Board provided for the appointment of four inspectors,—two more than are now employed.

—During the past week the State Board of Charities held a meeting in Albany, at which its annual report was prepared for transmission to the Legislature. The statistics in regard to the insane are of the most interest, and show that the whole number of insane in the institutions of the State on October 1, 1888, was 14,772, as against 14,062 this increase of 710 being the greatest in any year in the history of the State. All of the asylums are full, and many are greatly overcrowded.

—Maurice Norton Miller died December 9, in the fiftieth year of his age. He was born in Keene, N. H., and was graduated from the medical department of the University of the City of New York. He practised for sixteen years in Philadelphia, and then returned to New York, where he has since resided. He was one of the lecturers at the Loomis Laboratory, connected with the University Medical School, and was also pathologist to some of the institutions on Ward's and Blackwell's Islands.

Correspondence.

SUPERSTITION DIES HARD.

BOSTON, Dec. 24, 1888.

MR. EDITOR,—A young woman under my care at the Boston Dispensary complained of an itching of the skin, for which I ordered her a wash, to use several times a day. On taking the prescription she remarked that my treatment was very different from the one she had when suffering from a similar itching several years ago, in the north of Ireland.

The two modes of treatment on the former occasion were to walk naked through a hank of green yarn three times, held by two women, or to make a grave, lie down in it, and have three shovelfuls of clay thrown on her.

She refused the yarn treatment, because she was

unwilling to be naked before the two women. She did not object to the grave, and declared herself benefited by it.

Yours truly,
JOHN W. FARLOW.

VEHICLES FOR IODIDE OF POTASH.

DORCHESTER, Dec. 22, 1888.

MR. EDITOR, — In your issue of December 20, under the transactions of the Suffolk District Medical meeting October 10, I noticed the variety of vehicles suggested to be used in the administration of iodide of potash.

Several years ago I had a patient who was particularly susceptible to the effect of iodide of potash. Having exhausted a long list of vaunted

vehicles to no purpose, I was about to give up in despair, when an old physician suggested to administer a solution of the drug in milk. A trial was made with most happy results. The patient, who could not tolerate ten grains at a dose, very soon could take forty grains in milk, with no symptoms of nausea. This may be an old and forgotten vehicle for the administration of iodide of potash, but to me it was new, and has ever proved unailing.

A goblet of milk will almost completely cover the taste of iodide of potash, and apparently in no wise interfere with its medicinal properties. As I do not now remember to have seen this method suggested in any text-book, I give you my experience, hoping it may prove useful to others.

A. W. BLAIR, M. D.

REPORTED MORTALITY FOR THE WEEK ENDING DECEMBER 15, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Typhoid Fever.	Diph. & Croup.	Scarlet Fever.
New York.....	1,526,081	684	280	20.85	15.90	1.45	5.80	4.93
Philadelphia.....	1,016,758	331	128	14.40	12.60	3.00	7.50	2.70
Brooklyn.....	751,432	339	129	13.34	11.31	1.16	7.35	.58
Chicago.....	760,000	—	—	—	—	—	—	—
St. Louis.....	449,160	—	—	—	—	—	—	—
Baltimore.....	437,155	161	58	12.16	14.25	2.48	2.48	—
Boston.....	407,024	170	55	15.66	15.08	.58	12.76	—
Cincinnati.....	325,000	100	—	14.00	16.00	3.00	9.00	1.00
New Orleans.....	248,000	139	35	13.63	2.88	—	3.60	—
Buffalo.....	230,000	—	—	—	—	—	—	—
Washington.....	225,000	82	30	13.42	14.64	1.22	3.66	—
Pittsburg.....	210,000	—	—	—	—	—	—	—
Milwaukee.....	200,000	—	—	—	—	—	—	—
Providence.....	123,000	—	—	—	—	—	—	—
New Haven.....	80,000	—	—	—	—	—	—	—
Nashville.....	65,153	15	2	13.33	6.66	6.66	—	—
Charleston.....	60,145	—	—	—	—	—	—	—
Portland.....	40,000	8	2	12.50	12.50	12.50	—	—
Worcester.....	76,328	24	10	24.96	8.32	4.16	4.16	4.16
Lowell.....	69,530	—	—	—	—	—	—	—
Cambridge.....	64,079	22	9	4.55	27.30	—	4.55	—
Fall River.....	61,203	22	8	4.55	22.75	—	—	4.55
Lynn.....	51,467	15	—	13.33	20.00	—	13.33	—
Lawrence.....	40,175	20	5	10.00	—	20.00	—	—
Springfield.....	39,952	10	4	40.00	—	—	20.00	—
New Bedford.....	36,298	6	2	16.66	16.66	—	16.66	—
Somerville.....	33,307	—	—	—	—	—	—	—
Holyoke.....	32,887	—	—	—	—	—	—	—
Salem.....	28,781	10	3	—	10.00	—	—	—
Chelsea.....	27,552	8	—	12.50	37.50	12.50	—	—
Haverhill.....	24,979	5	1	—	—	—	—	—
Taunton.....	24,796	3	1	—	—	—	—	—
Brockton.....	24,784	4	1	—	25.00	—	—	—
Gloucester.....	23,187	—	—	—	—	—	—	—
Newton.....	21,105	3	—	—	—	—	—	—
Malden.....	18,932	—	—	—	—	—	—	—
Fitchburg.....	17,534	5	—	—	—	—	—	—
Waltham.....	16,621	3	1	—	—	—	—	—
Newburyport.....	13,839	3	1	—	—	—	—	—
Northampton.....	13,419	—	—	—	—	—	—	—

Deaths reported 2192: under five years of age 765; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas, and fever) 348, acute lung diseases 338, consumption 253, diphtheria and croup 140, scarlet fever 49, typhoid fever 29, whooping-cough 37, diarrhoeal diseases 31, measles 24, malarial fever 6, erysipelas 6, cerebro-spinal meningitis 5, puerperal fever one. From whooping-cough, New York 29, Brooklyn 8, Washington 3, Philadelphia and Baltimore two each, Boston and Worcester one. From diarrhoeal diseases, New Orleans 10, New York 9, Philadelphia, Brooklyn and Springfield 2 each, Boston, Cincinnati, Washington and Worcester 1 each. From measles, New York 19, Brooklyn 5. From malarial fever, Baltimore 6, Brooklyn 1, New Orleans 3, Nashville 1. From cerebro-spinal meningitis, Washington 3, New York,

Worcester, and Fall River 1 each. From puerperal fever, Boston 1.

In the 28 greater towns of England and Wales, with an estimated population of 9,398,273, for the week ending December 1, the death-rate was 17.8. Deaths reported 3210: Infants under one year of age, 299; acute diseases of the respiratory organs (London) 258, measles 264, scarlet fever 59, diphtheria 63, whooping-cough 56, fever 47, diarrhoea 41, small-pox (Cardiff 2, Sheffield 1).

The death-rates ranged from 13.2 in Hull to 27.9 in Cardiff; Birmingham 18.3, Leeds 20.8, Leicester 13.9, Liverpool 23.5, London 16.5, Manchester 21.2, Newcastle-on-Tyne 22.3, Nottingham 18.8, Sheffield 17.7, Sunderland 17.4.

In Edinburgh 16.3; Glasgow 19.8; Dublin 22.2.

The meteorological record for the week ending December 15, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week end'g Saturday, Dec. 15, 1888.	Barom- eter.	Thermometer.				Relative Humidity.		Direction of Wind.		Velocity of Wind.		State of Weather.*		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	S. A. M.	S. P. M.	Daily Mean.	S. A. M.	S. P. M.	S. A. M.	S. P. M.	S. A. M.	S. P. M.	Duration: Hours & Min.	Amount in inches.
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	S. A. M.	S. P. M.	Daily Mean.	S. A. M.	S. P. M.	S. A. M.	S. P. M.	S. A. M.	S. P. M.	Duration: Hours & Min.	Amount in inches.
Dec. 9	30.02	36.0	39.0	34.0	92	86	89.0	E.	N.	11	12	H.	O.	13.30	.42
" 10	30.10	36.0	40.0	32.0	90	83	86.0	W.	N.	7	5	F.	O.	2.30	.02
" 11	29.96	40.0	42.0	35.0	88	92	90.0	E.	N.	16	16	F.	H.	12.40	.05
" 12	29.61	29.0	35.0	23.0	82	76	64.0	N. W.	W.	24	28	F.	C.	3.00	.04
" 13	29.84	26.0	27.0	16.0	36	53	44.0	W.	W.	19	12	O.	C.		.00
" 14	29.94	12.0	16.0	6.0	61	45	53.0	W.	N. W.	23	24	C.	C.		.00
" 15	30.38	23.0	32.0	14.0	52	79	66.0	W.	N. W.	23	21	C.	E.		.00
Means for the Week	29.92	33.0	24.0				70.0								

* O, cloudy; C, clear; F, fair; G, fog; H, hazy; S, smoky; R, rain; T, threatening; N, snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM DECEMBER 15, 1888, to DECEMBER 21, 1888.

ALEXANDER, CHARLES T., lieutenant-colonel, surgeon, and Captain HENRY S. KILBOURNE, assistant surgeon, detached for duty on Army Retiring Board, to meet at Vancouver Barracks, W. T., at the call of the president thereof. Par. 22, S. O. 292, A. G. O., Washington, D. C., December 15, 1888.

Leave of absence for one month, with permission to apply for an extension of three months, is granted Captain LOUIS A. LE GARDE, assistant surgeon. Par. 15, S. O. 290, A. G. O., Washington, December 13, 1888.

By direction of the Secretary of War, 1st Lieutenant NATHAN S. JARVIS, assistant surgeon, is relieved from duty at Fort Leavenworth, Kan., and will report to commanding officer at Fort Lewis, Col., for duty. Par. 14, S. O. 290, A. G. O., Washington, December 13, 1888.

HOPKINS, WILLIAM E., captain, assistant surgeon, is detached as member of the Army Retiring Board to meet at San Francisco, Cal., vice Major HENRY E. TILTON, assistant surgeon, relieved. Par. 3, S. O. 291, A. G. O., Washington, December 13, 1888.

By direction of the Secretary of War, the leave of absence granted Captain WILLIAM F. CARTER, assistant surgeon, S. O. No. 110, November 12, 1888, Department of Texas, is extended five months. Par. 4, S. O. 292, A. G. O., Washington, December 13, 1888.

Leave of absence for one month is granted Captain GEORGE MCCREEKY, assistant surgeon. Par. 4, S. O. 293, headquarters Division of Atlantic, Governor's Island, N. Y., December 15, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING DECEMBER 15, 1888.

PENROSE, THOMAS N., surgeon, ordered for examination preliminary to promotion.

ORRILL, A. S., medical inspector, ordered before the Retiring Board.

DICKSON, S. H., passed assistant surgeon, detached from the "Richmond" and to the "Pensacola."

ASHBRIDGE, RICHARD, passed assistant surgeon, detached from the "St. Louis" and to the "Richmond."

ATZAL, ERNEST W., assistant surgeon, promoted to passed assistant surgeon.

WIEBER, F. W. F., assistant surgeon, promoted to passed assistant surgeon.

SOCIETY NOTICES.

ANNUAL MEETING OF THE ASSOCIATION OF ACTING ASSISTANT SURGEONS OF THE U. S. ARMY.—The annual meeting of the Association of Acting Assistant Surgeons of the U. S. Army will be held in Newport, R. I., Monday, June 24, 1889, at 8 P. M. Members of the Association are cordially invited to read or present papers concerning the history and the welfare of the corps. Members who intend to be present are requested to notify the Recorder at the earliest possible date.

A. REEVES JACKSON, M. D., President,
277 Michigan Avenue, Chicago, Ill.
W. THORNTON PARKER, M. D., Recorder A. A. S.,
Newport, R. I.

SURGICAL SECTION OF THE SEAFORD DISTRICT MEDICAL SOCIETY.—There will be a meeting of this Section at 19 Boylston Place on Wednesday evening, January 2, at 8 o'clock. Drs. H. A. Baker and G. F. Grant will (by invitation) present a communication on the "Treatment of Pleuresies of the Palate," and will show patients, apparatus, etc. The subject will also be considered from a surgical point of view. Drs. R. W. Lovett and Edward Reynolds will report the results of the treatment of post-nasal catarrh by the removal of nasal obstruction in 110 cases.

G. H. MONKS, M. D., Secretary.

DIED.

Died at Winchendon, Mass., December 19, 1888, Ira Russel, M. D., M. M. S. S., aged seventy-four years.

OBITUARY. G. H. LODGE, M. D.

Dr. G. H. Lodge, one of Boston's oldest physicians, died December 17th, at his home, 142 Washington St. He was an uncle of Hon. H. C. Lodge, and leaves a wife and two sons, H. E. and Richard Lodge. Dr. Lodge was eighty-three years of age. He was a graduate of Harvard College in the class of 1825, and of the Harvard Medical School in 1828. In his collegiate course he was a classmate of the late Hon. Charles Francis Adams, Rev. S. K. Lothrop, and John Langdon Sibley.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the American Otological Society. Twenty-First Annual Meeting, Pequot House, New London, Conn., July 17, 1888. Vol. iv, Part 2, 1888.

Lectures to Practitioners on the Surgical Diseases of the Kidney amenable to Surgical Treatment. By David Newman, M. D., etc. etc. London: Longmans, Green & Co. 1888.

Lectures on Obstetric Pregnancy and Pelvic Hematocele. By Lawson Tait, F. R. C. S. etc., Birmingham. 1888.

Questions and Answers on the Essentials of Surgery: together with a Full Description of the Handkerchief and Roller Bandages. By Edward Martin, M. D. With ninety illustrations. Philadelphia: W. B. Saunders. 1888.

Questions and Answers on the Essentials of Obstetrics. Prepared especially for students of Medicine. By William Masters Ashton, M. D. With illustrations. Philadelphia: W. B. Saunders. 1888.

The Psychological Influence of Errors of Refraction and of their Correction. By George M. Gould, M. D., Philadelphia. September 29, 1888.

The Homing Instinct. An Explanation suggested. By George M. Gould, M. D. Reprint.

Double Choroiditis, with Partial Degeneration of the Optic Nerve, associated with Curious Lymph Extravasation into the Retina and Vitreous. By Charles A. Oliver, M. D., Philadelphia. Reprint.

A New Style of Bifocal Lenses. By George M. Gould, M. D., Philadelphia. November 3, 1888.

Is the Electric Light injurious to the Eyes. By George M. Gould, M. D., of Philadelphia. December 8, 1888.

Transactions of the Colorado State Medical Society. Eighteenth Annual Convention, Colorado Springs, June, 1888.

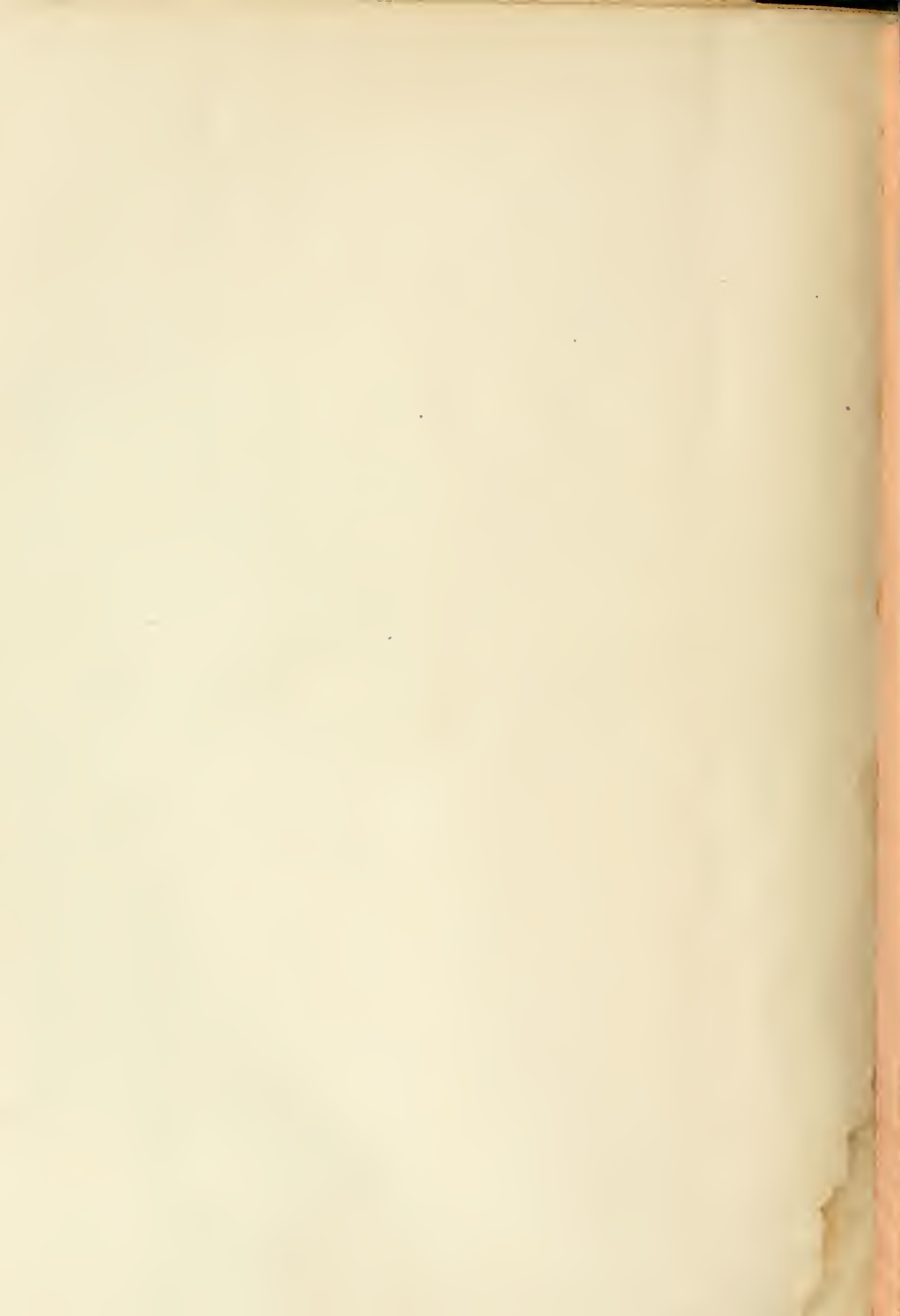
A Peculiar Case of Herpes Zoster Ophthalmicus, Serous Iritis, or "Ophthalmic Neuritis." By George M. Gould, M. D. Reprint.

Report of Proceedings of the Conference of Local Health Officials, held by invitation of the State Board of Health of Missouri, at St. Louis, December 4th, 1888. Sanitary Deficiencies in State—Epidemics of Small-Pox—Proposed bill for creation of Local Boards—Financial Condition of various State Boards—Resolutions.

The History of the Filaria Sanguinis Hominis: its Discovery in the United States, especially the Relationship of the Parasite to Chylolymph of the Uterine Vaginalis Testis. By William M. Mastin, M. D., Mobile, Alabama. Fellow of the American Surgical Association, and Member of the American Association of Genito-Urinary Surgeons. Reprint.

Exploratory Trephining and Puncture of the Brain almost to the Lateral Ventricle, for Intracranial Pressure supposed to be due to an Abscess in the Temporo-sphenoidal Lobe. Temporary Improvement: Death on the Fifth Day; Autopsy: Meningitis with Effusion into the Ventricle. With a Description of a proposed Operation to Tap and Drain the Ventricle as a definite Surgical Procedure. By W. W. Keen, M. D., Professor of Surgery in the Woman's Medical College of Pennsylvania; Surgeon to St. Mary's, St. Agnes's, and the Woman's Hospitals, etc. December 1, 1888.





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